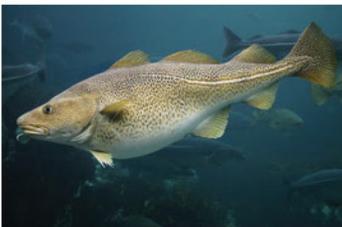




NAFO

Performance Assessment Review 2011





Northwest Atlantic Fisheries Organization

NAFO Performance Review

August 5, 2011

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Acronyms and Abbreviations

AI	Apparent Infringement
ASFA	Aquatic Sciences and Fisheries Abstracts (International cooperative information system)
CAWG	Catch Assessment Working Group
CBD	1992 UN Convention on Biological Diversity
CCAMLR	Commission for the Conservation of Atlantic Marine Living Resources
CEM	Conservation and Enforcement Measures
CEWG	NAFO Scientific Council Catch Estimation Working Group
CRDG	Compliance Review Drafting Group
COFI	FAO Committee on Fisheries
CPI	Consumer Price Index
CWP	FAO Coordinating Working Party on Fisheries Statistics
Des	NAFO Scientific Council Designated Experts
DSF	Deep Sea Fisheries
EAC	Ecology Action Center
EAF	Ecosystem Approach to Fisheries
EBM	Ecosystem Based Management
EEZ	Exclusive Economic Zone
FAO	Food and Agriculture Organization of the United Nations
FAO IPOA – IUU	International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, Adopted by FAO in 2001
FAO PSM Agreement	FAO 2009 Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing
FIRMS/FIGIS	Fisheries Resources Monitoring System
FIS Newsletter	Fish Information and Services Newsletter
FC	NAFO Fisheries Commission
FOC	Flags Of Convenience
GC	NAFO General Council
ICES	International Council for the Exploration of the Sea
ICFA	International Coalition of Fisheries Associations
ICNAF	International Commission for the Northwest Atlantic Fisheries
IEAs	Integrated Ecosystem Assessments
IFCPS	International Fisheries Commissions Pension Society
IUU fishing	Illegal, Unreported and Unregulated fishing
JNAFS	Journal of Northwest Atlantic Fishery Science
LRP	Precautionary Approach Limit Reference Point
MCS	Monitoring, Control and Surveillance
MoU	Memorandum of Understanding
MSE	Management Strategy Evaluation
MSY	Maximum Sustainable Yield



NAFO	Northwest Atlantic Fisheries Organization
NARFMO	North Atlantic Fishery Management Organizations
NAMMCO	North Atlantic Marine Mammal Commission
NCEM	NAFO Conservation and Enforcement Measures
NCP	Non-Contracting Party
NEAFC	North East Atlantic Fisheries Commission
NEREIDA	NAFO PotEntial VulneRable Marine Ecosystems- Impacts of Deep-Sea Fisheries (research expedition)
NGOs	Non-Governmental Organizations
NIPAG	Joint NAFO/ICES Working Group on Northern Shrimp Assessment
NPAFC	North Pacific Anadromous Fish Commission
NRA	NAFO Regulatory Area
PA	Precautionary Approach
PAF	Precautionary Approach Framework
PAWG	NAFO General Council Performance Assessment Working Group
PDI	Professional Development Internship
PICES	North Pacific Marine Science Organization
PRP	NAFO Performance Review Panel
PSCM	Port State Control Measures
PSM	Port State Measures
RFMOs	Regional Fisheries Management Organizations
RFMO/As	Regional Fisheries Management Organizations/Arrangements
RSN	Regional Fishery Body Secretariats Network
SEAFO	South East Atlantic Fisheries Organisation
SC	NAFO Scientific Council
SCR Docs	Scientific Council Research documents
SSB	Spawning-Stock Biomass
STACFAC	NAFO Fisheries Commission Standing Committee on the Fishing Activities by Non-Contracting Parties in the NAFO Regulatory Area
STACFAD	NAFO General Council Standing Committee on Finance and Administration
STACFEN	NAFO Scientific Council Standing Committee on Fisheries Environment
STACFIS	NAFO Scientific Council Standing Committee on Fisheries Science
STACTIC	NAFO Fisheries Commission Standing Committee on International Control
STACREC	NAFO Scientific Council Standing Committee on Research Coordination
TAC	Total Allowable Catch
UN	United Nations
UNCLOS	1982 United Nations Convention on the Law of the Sea
UN-DOALOS	United Nations - Division for Oceans Affairs and the Law of the Sea
UNFSA	1995 United Nations Fish Stocks Agreement
UNGA	United Nations General Assembly
VMS	Vessel Monitoring System



VME	Vulnerable Marine Ecosystem
WGDEC	Working Group on Deep-sea Ecology
WGEAFM	Scientific Council Working Group on the Ecosystem Approach to Fisheries Management
WGHARP	Working Group on Harp and Hooded Seals
WTO	World Trade Organization
WWF	World Wildlife Fund



Executive Summary

The Northwest Atlantic Fisheries Organization (NAFO) established a Performance Assessment Working Group (PAWG) in 2009 to set up a performance review (the “Review”) tasked with addressing NAFO’s strengths, weaknesses, challenges and successes, using specifically identified criteria (Appendix II). The Review would also identify areas for improvement.

The Performance Review Panel (the ‘Panel’) comprised three external experts and four internal experts. The external panel members were experts in the fields of fisheries management (Dr. Fábio Hazin), fisheries science (Prof. Denzil Miller), and the law of the sea (Mr. Milton Haughton). These panelists were nominated by FAO, ICES and UN-DOALOS, respectively. They have not participated in NAFO’s work to date and are not nationals of any NAFO Contracting Party. The internal experts were nominated by NAFO members as follows: Canada (James Baird), Denmark (in respect of Faroe Islands and Greenland) (Einar Lemche), the European Union (John Spencer) and the Russian Federation (Olga Sedykh)¹. In addition, the Chair of STACTIC (Gene Martin) acted as an information resource to be used by the Panel. The Secretariat provided administrative assistance and organized the two Panel meetings held at the NAFO Secretariat Headquarters in Dartmouth, Nova Scotia, Canada, during 28 February- 04 March 2011 and 31 May- 3 June 2011. This Executive Summary presents the main findings and recommendations contained in the Performance Review Report.

The Historical Context: 1978 to 1995

For most of its existence², NAFO has comprised four constituent bodies: the General Council, the Scientific Council, the Fisheries Commission and the Secretariat. Together, these bodies are mandated to “contribute through consultation and cooperation to the optimum utilization, rational management and conservation of the fishery resources of the Convention Area”. NAFO meets annually and, occasionally on an intersessional basis, to decide on management measures for the key fish stocks under its responsibility, including total allowable catches (TACs) and quotas for the subsequent year.

The 1978 to 1995 period was an extremely challenging one for NAFO. There were major differences of view between Contracting Parties on the appropriate management strategies to be followed for groundfish stocks. In that period, NAFO decisions were also largely taken by a simple majority, in accordance with the decision-making process outlined in the NAFO Convention. Such decisions, particularly between 1986 and 1991, were often reached only after divisive and acrimonious debates among Contracting Parties³. The entire process resulted in a significant number of objections by Contracting Parties not in agreement with the decisions taken.

The absence of agreed stock management strategies led to pre-1995, annual catches being frequently above the level recommended by the Scientific Council for many of the important groundfish stocks. This resulted in notable declines in many such stocks, with moratoria eventually being placed on most stocks. These moratoria applied to both discrete stocks within the NAFO Regulatory Area (NRA), as well as those occurring in the NAFO Regulatory Area and the adjacent EEZ. The key challenges for NAFO during this difficult period included:

- A lack of consensus in the Fisheries Commission, which resulted in the objection procedure being used by some Contracting Parties in a situation where there was no agreed dispute settlement procedure;
- Non-compliance by some vessels/masters, as well as the lack of effective follow-up/sanctions by certain Contracting Parties, and
- The unregulated activity of Non-Contracting Party vessels.

Post-1995, more constructive relations developed between the Contracting Parties. This is best demonstrated by the Fisheries Commission’s use of consensus-based decision making over the past 16 years. Other significant improvements noted after 1995 include:

- Elimination of Non-Contracting Party activity in the NAFO Regulatory Area;
- A substantial decrease in the frequency of objections to Fisheries Commission quota decisions;
- The prescription of a dispute settlement procedure in the modified Convention;

¹ A short *curriculum vitae* for each external and internal experts is provided in Appendix III

² Particularly prior to the process aimed at considering the Convention’s modernization (2005 to 2007).

³ These debates are documented in the Fisheries Commission’s Meeting Proceedings for that time.



- Improved compliance, as well as more effective follow-up of compliance violations by most Contracting Parties, following the incorporation of new and modern provisions on immediate follow-up and sanctions into the modified [NAFO Convention and Conservation and Enforcement Measures](#) (NCEM) (NAFO, 2011d);
- Disappearance of the pre-1995 adversarial decision-making processes, and their replacement by a more widely-accepted decision-making process. Contracting Parties now operate in a more collegial and transparent spirit, recognize the requirements of international instruments (e.g. Precautionary Approach and Ecosystem-based Management), and endeavor to reach consensus on management decisions regulating fishery resources and marine ecosystems.

Main Performance Review Panel Assessments and Recommendations

The Convention – Consistency With Other International Fisheries Instruments And Initiatives

Assessment

In common with other older Regional Fisheries Management Organizations (RFMOs)⁴, the [1978 NAFO Convention](#) (NAFO, 2004a) does not address several requirements established by more modern international fisheries instruments and initiatives. However, the [2007 NAFO Amended Convention](#) (NAFO, 2007a) has significantly improved this situation by rectifying many shortcomings of the original Convention. NAFO is to be commended, for instance, for having incorporated an ecosystem approach to fisheries management in the 2007 NAFO Amended Convention. Furthermore, the objectives, principles and obligations in the 2007 NAFO Amended Convention are in keeping with those enunciated in the United Nations Fish Stock Agreement ([UNFSA](#) (UN, 1995) and other recent binding and non-binding instruments, particularly in dealing with fisheries conservation and sustainable use, as well as protection of marine biodiversity. NAFO is also to be commended for incorporating and applying the precautionary approach in its work, even prior to such considerations being incorporated into the 2007 Amended Convention.

Basic Contracting Party obligations regarding data collection and sharing have also been clarified and strengthened. They are now in line with ([UNFSA](#)) (UN, 1995) and the [FAO Code of Conduct for Responsible Fisheries](#) (FAO, 1995) standards. Through the [2007 NAFO Amended Convention](#) (NAFO, 2007a), NAFO has incorporated the relevant provisions for cooperative and integrated Monitoring, Control and Surveillance (MCS) into its Basic Texts. It has also incorporated the general, and specific, flag State duties set out in [UNCLOS](#) (UN, 1982), the [Compliance Agreement](#) (FAO, 1993), [UNFSA](#) (UN, 1995) and other international instruments. On the other hand, although the 2007 NAFO Amended Convention contains provisions aimed at achieving consistency and compatibility of conservation and management measures adopted by coastal States and the Fisheries Commission for straddling fish stocks, these provisions are neither as obligatory nor as specific as UNFSA requirements.

The objection provision of the 1978 NAFO Convention permits States to choose not to apply conservation and management measures with which they disagree. The provision is broad enough to have the effect of undermining the effectiveness of conservation and management measures adopted by the Organization. However, the decision-making provisions in the 2007 NAFO Amended Convention are quite elaborate and represent a significant improvement on those in the 1978 NAFO Convention. The new requirements are likely to considerably reduce objections, since they are more detailed and crafted to create a coherent, timely and effective decision-making process. This, in turn, is supported by a balanced and strong dispute resolution mechanism. All these improvements should result in the adoption of conservation and management measures that are more acceptable to all Contracting Parties. Equally, they should strengthen commitment to consensus-based decision-making, limit recourse to the objection procedure, and translate into greater Contracting Party commitment to implement and comply with adopted measures, thereby enhancing the Organization's overall performance.

NAFO is also to be commended for introducing comprehensive provisions into its 2007 NAFO Amended Convention to provide a strong legal basis for cooperation with non-Contracting Parties. In accordance with international law, such cooperation includes taking action against non-Contracting Parties that undermine NAFO-adopted conservation and management measures. The 2007 NAFO Amended Convention also contains

⁴ 'Older RFMOs' are considered to be those prior to the early 1990s and/or the completion of the UNFSA negotiations in 1995.



comprehensive provisions for cooperation between NAFO and other RFMOs, as well as other international organizations.

Advice

The Panel:

1. Urges all NAFO Contracting Parties which have not already done so, to become party to [UNCLOS](#) (UN, 1982), the [UNFSA](#) (UN, 1995), the [Compliance Agreement](#) (FAO, 1993), the [Convention on Biodiversity](#) (CBD, 1992), and the [FAO Port States Measures Agreement](#) (FAO, 2009b)⁵.
2. Urges NAFO to consider policy measures to bolster its commitment to ensuring the compatibility of measures adopted for the conservation and management of straddling stocks within the Convention Area. Consideration should also be given to clarifying the respective responsibilities of the coastal State and the Fisheries Commission in coordinating their respective measures and actions, so as to ensure that compatibility.
3. Recommends that NAFO continue incorporating relevant Port State Measures, in particular those of the [FAO Port States Measures Agreement](#) (FAO, 2009b), into its monitoring, control and surveillance (MCS) provisions.
4. Encourages NAFO to continue developing market-related measures as way of improving the monitoring of total removals from the various fish stocks harvested in the NAFO Convention Area and in the event of any potential illegal, unregulated and unreported (IUU) fishery developing.
5. Acknowledges that the complexity of management issues may entail necessary lengthy discussions between Contracting Parties. However, the Panel would advocate that, to the greatest extent possible, but consistent with the effective functioning of the Organization, the Fisheries Commission's deliberations in the main are held in public sessions.
6. Notes that the provisions addressed in Part VII of the UNFSA have not been taken into account in the 2007 NAFO Amended Convention. While recognizing that this has not been an issue for NAFO, NAFO should, as appropriate, take into account the special requirements of developing States, in accordance with relevant international instruments, including UNFSA. It is suggested that the General Council may wish to further reflect on the matter.
7. Encourages NAFO to continue developing, strengthening and enhancing cooperation with other RFMOs and international organizations where appropriate.

Conservation and Management

Assessment

Notwithstanding the significant improvements observed post-1995, 8 out of the 19 stocks NAFO-managed stocks are currently subject to fishing moratoria, largely due to past overexploitation. A further three stocks are subject to recovery plans, after being severely depleted.

⁵ As of June 2011, the following NAFO Contracting Parties have signed the FAO Port States Agreement: Canada, European Union, France, Iceland, Norway, the Russian Federation and the United States of America.



Without specific monitoring strategies being in place, no specific information is currently available to evaluate the present status of species belonging to the same ecosystem, or associated with or dependent upon targeted marine living resources. The absence of a NAFO policy⁶ (including reporting and monitoring arrangements) to address incidental bycatch of both non-target species, and those incidentally affected by fishing operations, constitutes an evident shortcoming in the Organization's attempts to address the requirements of Article 5 of UNFSA⁷. Although results are beginning to appear, considerable work remains to be done by NAFO to accrue information on the potential linkages between harvested and other species belonging to the same ecosystem, including dependent, or related species. Work is also needed to develop cost-effective ways to monitor such information for management purposes. For example, whilst acknowledging that NAFO-authorized vessels do not conduct directed shark fisheries, a failure in current measures to clearly reference 'shark weight' to green or processed weight, may result in different interpretations of the amount (5% by weight of all shark onboard) of shark fins permitted to be aboard a fishing vessel.

NAFO has made significant progress⁸ in addressing the essential precautionary elements highlighted in Article 6 of the UNFSA. Consequently, the Organization may be seen to be truly attempting to advance its strategy in implementing an encompassing ecosystem approach to fisheries (EAF) that provides the necessary level of precautionary consideration to all elements of the ecosystem in the NAFO Area⁹. In particular, NAFO is to be commended for its policy and the adoption of measures to address various [UNGA Resolution 61/105](#) provisions on bottom fishing. The PRP commends NAFO for recently considering research required to move forward on developing Ecosystem Based Management (EBM). In particular, it welcomes NAFO's consideration of ways to identify functional (causal) relationships underlying environment-stock associations (including climate change effects¹⁰), to incorporate more information on primary and secondary production into stock assessments, and to evaluate the importance of environmental effects in relation to fishing and natural mortality.

The panel also welcomes that, in defining appropriate spatial management units, the NAFO *EAF Roadmap* strives to take account of social, economic and political considerations. However, efforts to implement an EAF for by-catch species should be enhanced. The Panel notes that the absence of any requirement to report lost, or abandoned, fishing gear could impede NAFO's efforts to formally assess fishing gear loss/abandonment impacts in the Convention Area. The Panel concludes that NAFO has adequately addressed the ecosystem requirements contained in the relevant international instruments.

NAFO data formats and submission specifications are in general conformity with the provisions outlined in UNFSA Annex 1. They appear adequate to ensure reporting consistency, to promote data compatibility and comparability. NAFO's comprehensive data holdings seem to be in accordance with the Convention's requirements; these aim to compile and maintain essential statistics and records pertaining to the fisheries for which NAFO is responsible. However, the rather disparate way in which data requirements are outlined in the NCEM may promote confusion and inefficiency. Despite such considerations, any failure, particularly if it is persistent, by Parties to meet stipulated deadlines for data submission remains a matter of concern.

The Panel expresses concern about the accuracy and quality of data submitted, particularly data used by the Scientific Council in its catch estimation procedures. In this regard, the Panel supports the Secretariat's follow-up processes to improve data submission. However, the Panel is not in a position to examine in any detail the Secretariat's process for checking and validating the data it receives, other than being aware that most data validation is carried out by the Contracting Parties prior to submitting their data. The PRP notes with concern discrepancies between STATLANT 21A catch estimates and those of STACFIS, particularly if such discrepancies significantly increase the degree of uncertainty attached to stock assessments undertaken by the Organization.

The Panel commends NAFO on the progress it has made to acquire essential information concerning marine living resources in the NAFO Area in general. Furthermore, the way in which such data are used by the Scientific Council and Fisheries Commission for assessment and enforcement purposes suggests close cooperation and significant sharing/exchanging of data by the NAFO body corporate. The Panel particularly notes the potential utility of VMS information in verifying stock assessment input data.

⁶ Such as the clear species-specific bycatch management and mitigation measures adopted by CCAMLR.

⁷ See Section 3.2.1, paragraph 8.

⁸ Such progress is also largely confined to harvested species (Section 4.6.2).

⁹ Notably, specific consideration has yet to be given to maintaining food-web function, including ensuring that sufficient prey are available for dependent species and to augment the protection of endangered species

¹⁰ From the Fisheries Commission 2010 Annual Meeting Report ([FC Doc 10/29](#) (NAFO, 2010d)): Under this agenda item [Ecosystem Considerations], the European Union proposed a resolution concerning the promotion of scientific research on climate change and its potential effects on NAFO fishery resources. While the proposed text garnered general support in principle, some Contracting Parties indicated that, given its late submission during the meeting, more time was required to reflect on the specific aims and appropriate wording of such a proposal. It was agreed to return to the matter at the 2011 annual meeting.



The Panel is not in a position to determine to what extent national, or NAFO, scientific observer data are used for stock assessment purposes. It also notes that STACREC has recommended that further work be undertaken to bring attached observer requirements and reporting procedures into line with those used by other RFMOs (e.g. CCAMLR) to ensure that sampling of commercial fisheries is representative for all stocks subject to directed fisheries, or taken as bycatch.

In all the situations highlighted above, the Panel recognizes that the data submitted to NAFO by the Contracting Parties are not the sole preserve of the Scientific Council alone. For example, data may be used for different reasons, such as VMS data for compliance purposes and length-at-age data for stock assessments. Nevertheless, the Panel notes potential data-sharing issues attached to biological data from commercial vessels. The Panel further notes that NAFO, and the Secretariat in particular, expends considerable effort to ensure that information is made publicly available in a timely manner. The PRP records its appreciation for such efforts, particularly in relation to the timely provision of important information on the NAFO Website. The Secretariat's ongoing development of a website search engine to facilitate information accessibility is commended by the Panel.

The Panel notes that the separation of 'science' and 'management' presently observed by NAFO is aimed at ensuring that scientific debate is not 'contaminated' by political considerations. However, it may not necessarily encourage dialogue between the Fisheries Commission and the Scientific Council. Consequently, there is a risk that the dialogue between these two bodies (as is the current situation) becomes overly formal, with management/scientific responses to changing circumstances become slower.

The Panel concurs that the scientific advice provided by the Scientific Council is generally comprehensive and of high standard. However, the use of such advice may be complicated by its presentation in a diverse and scientifically complex manner. Terminology may also be used that assumes considerable understanding of the scientific methods and procedures being applied.

In the Panel's view, NAFO currently finds itself in a position where its customary scientific and management needs (particularly in respect to stock assessments) are being broadened to deal with a variety of challenges. In recent years, these have included furthering development of EAF (Section 4.3), increased formalization of the Precautionary Approach to Fisheries (PAF) (Section 4.6.2) and accounting for marine living resources in general, including Vulnerable Marine Ecosystems (VMEs) and bycatch (Section 4.4.2). However, unlike other RFMOs, the burden of scientific input appears to be shared by all NAFO Contracting Parties in proportion to their respective fishery activities.

The number of stocks under moratoria in 2009 was close to 50% of all NAFO managed stocks. The Panel notes that this situation does not reflect well on the effectiveness of NAFO Contracting Parties in implementing their Convention obligations. Clearly, the general situation outlined in several sections (particularly Section 4.1) constitutes a major factor in explaining the reasons for the collapse of many stocks. Most notably such reasons include, inadequate scientific advice, the absence of agreement on appropriate management strategies, general non-compliance with conservation/management measures and non-Contracting Party fishing activity. Notwithstanding such observations, the Panel notes that, even in more recent years, some stocks have still been placed under moratoria. Nonetheless, the situation has recently been mitigated by agreement on re-building plans for a number of key stocks, as well as by the re-opening of some fisheries.

The Panel notes that the [NAFO PAF](#) (NAFO, 2004f) is quite sophisticated and that its formulation goes beyond what many other RFMOs have developed to address the provisions in Article 6 and Annex II of the UNFSA. Given current data and/or model limitations, the Panel recognized that it is not possible to have precautionary reference points for all stocks at this time. While the necessary data do exist for some stocks, the associated PA reference points have not yet been fully developed due to time constraints.

The Panel notes that the Fisheries Commission has persistently sought the Scientific Council's advice on evaluating various stock recovery plan scenarios, within time frames of 5 to 10 years, or longer, as appropriate. The Panel endorses the Fisheries Commission's views that such evaluations are important for providing the Fisheries Commission with essential information on which to balance risks and stock yield levels, including information on the consequences and risks of not taking action.

While the PAF has been applied to nine NAFO stocks, the Panel finds it difficult to ascertain to what extent the various reference points are being taken into account when stock-recovery plans are considered. In its current form, the PAF does not appear to have been explicitly applied to account for the potential management of fishery-ecosystem interactions. The Panel feels that this is a serious deficiency in the overall application of the PAF (see also Section 4.5). There appears to have been little consideration of feasible decision rules to be applied when taking PAF considerations and outcomes into account for management purposes. While the Panel notes that the development of precautionary limit reference points rests with the Scientific Council alone, there appears to be some efficacy in promoting dialogue between the Scientific Council, the Fisheries Commission and General



Council on how reference points can be used in a scientifically-driven decision-making process. The experiences of other RFMOs and NAFO in developing such processes are likely to offer a way forward.

The Panel considers that the absence of a formally-defined decision rule framework may exacerbate perceived differences between the Scientific Council and Fisheries Commission. The matter is obviously one for serious consideration and review if the Organization's overall functionality and effectiveness is to be improved in the PAF's application.

The lack of a unified approach to deal with new and exploratory fisheries, (Section 4.6.3) including the re-opening of previously closed fisheries, is a shortcoming in the PAF's more comprehensive application. On occasion, the Scientific Council consideration/advice on applying precaution to the management of certain stocks appears to have been uncertain, if not ambiguous. For example, multiple management options have been offered by the Scientific Council for the Greenland Halibut fishery with little guidance on which is favoured. The issue appeared to be attributable to variable assessment projection results based on different assumptions of future catch, and would have probably not influenced scientific advice so markedly if a procedure had been in place to guide the advice so that both precaution and scientific uncertainty could be more explicitly addressed.

The current NAFO Exploratory Fisheries Protocol (Chapter 1bis, NCEM) concentrates on bottom fisheries and focuses on avoiding negative impacts of VMES, in accordance with the UNGA Resolution 61/105. The Protocol implicitly recognizes the need for prior notification of exploratory fishing and that recording of catch, and other vital information, should be sufficiently detailed to conduct an assessment of activity¹¹. The Panel notes that the Protocol is currently formulated in the context of improving knowledge about potential interactions of fisheries with seafloor organisms. In this respect, it does not provide the necessary generic/strategic framework to deal with the full range of uncertainties likely to arise from limited knowledge about new stocks, or in respect to how a fishery develops. Both considerations are crucial to building fore-knowledge of stock/fishery potential as well as the risk likely to be attached to over-rapid fishery development. Such fore-knowledge is itself essential for identifying the level of precaution to be applied to ensure the sustainable growth, and long-term viability, of the fishery.

The Panel commends NAFO for its progress in addressing environmental and biodiversity concerns, including protection and management issues. However, NAFO's efforts to address potential threats to biodiversity in the *NAFO Convention Area* are largely linked to the management of relevant fisheries and their likely impacts. In this respect, NAFO has not articulated any specific plans aimed at developing ways to conserve biodiversity. Furthermore, NAFO has not yet attempted to formally determine the potential effects that areas closed to fishing are likely to exert in terms of affecting fishing, protecting habitats and conserving biodiversity in the *NAFO Convention Area*.

The Panel commends NAFO for its monitoring of vessels activity and fishing effort to prevent, reduce or eliminate excess fishing capacity in the NAFO Regulatory Area. It also noted that the Greenland Halibut Rebuilding Plan explicitly requires a reduction of fishing effort (Article 7.7 of the NAFO Conservation and Enforcement Measures [NCEM]). The Panel views current NAFO management measures to be extensive and largely effective. It notes that a number of NAFO conservation and management measures currently in force are aligned with regulations being applied by NAFO coastal States, and reiterates its associated recommendation outlined in Section 3.2.5.

The Panel notes that NAFO has considered possible allocation of fishing opportunities to new members ([*Resolution to Guide the Expectations of Future New Members with Regard to Fishing Opportunities in the NAFO Regulatory Area*](#) (NAFO, 199c) - See also Section 3.2.6). It also notes that presently, and for the foreseeable future, stocks managed by NAFO are fully subscribed. This signifies that fishing opportunities for new Members are likely to be limited, for instance, to new fisheries. If the situation should evolve, the Panel suggests that the above *Resolution* conditions should be reviewed if necessary in terms of NAFO addressing all the explicit provisions of UNFSA Article 11 that need to be taken into account when allocating fishing opportunities to new Members.

The Panel is encouraged by recent NAFO developments aimed at further developing conservation plans and rebuilding strategies for stocks under moratoria. It especially commends NAFO for developing a scientifically-based approach to managing SA 2 + Div. 3KLMNO Greenland Halibut using an MSE approach. The PRP welcomes the forming of the new *Working Group of Fishery Managers and Scientists on Conservation Plans and Rebuilding Strategies* as a way to address some of the concerns raised in Sections 4.5 and 4.6.2.

¹¹ This also suggests that any such assessment of activity is essential during the development of an exploratory fishery to allow precaution to be applied and to collect vital information for a fishery, or stock, about which little may be known, particularly in terms of informing assessment of target stocks and associated qualities of the fishery.



Advice

The Panel:

Data

1. Notes that high priority should be given to encouraging the timely submission of data essential for stock assessment purposes. The PRP therefore urges Contracting Parties to ensure the accuracy of the data and information collected and the timeliness their submission to NAFO. In this regard, the potential introduction of sanctions for data submission infringements, including the denial or reduction of fishing opportunities until outstanding data submissions are supplied, should be considered.
2. Recommends that the Secretariat develop documentation to outline its data consolidation processes and the steps it takes to check data, including the continuation of communication with data providers after data have been submitted/used, if necessary.
3. The PRP would like to see a user-friendly NAFO data manual being produced and this could also set out a full meta-data record for all NAFO's data holdings and database.
4. Careful consideration should be given to developing and consolidating NAFO fishery resources data-access and utilization rules. These should take into consideration intellectual property rights related to scientific analyses as well as industrial confidentiality provisions to be attached to certain categories of data (e.g. detailed fishing location).
5. Encourages NAFO to continue to address the data requirements attached to implementation of UNGA Resolution 61/105, with some urgency. All efforts should be expended to encourage the timely submission of marine living resources information to expedite the comprehensive collection of essential data to improve knowledge of the benthos, and benthic environment, in the NAFO Convention Area as a whole

Management

6. Suggests that NAFO consider enhancing its application of risk-based assessment approaches (e.g. the *Greenland Halibut Management Strategy Evaluation* and *Kobe Matrix*) when evaluating management strategies.
7. Encourages NAFO to consolidate its policy to address ecosystem management considerations, including by compiling the information necessary for evaluating trends in the status of dependent, related and associated species specifically. A consolidated list of bycatch species, for instance, should be included in the NCEM to assist monitoring of bycatch during directed fishing.
8. Recommends that NAFO consider augmenting its efforts to implement a more EAF friendly management approach as well as to embrace the PAF more widely. If bycatch continues to be a problem, then NAFO ecosystem-based management and its EAF may fall short of best practice.
9. Strongly encourages the development, and consolidation, of the Scientific Council's *EAF Roadmap*. It also encourages NAFO as a whole to give strategic consideration as to how the *Roadmap* may assume a more holistic focus so that it



addresses ecosystem components more widely, not just those for harvested, or associated, species alone. In these terms, NAFO should focus on the sustainable use of the entire ecosystem for which it is responsible rather than just fishery-target species.

10. Endorses NAFO's continuing execution of its customary (target species-directed) management requirements and assessments for the stocks that it manages. It should also strive to address new challenges associated with further development of the EAF (Section 4.3) and increased formalization of the PAF (Section 4.6.2) etc. The use of standardized, well-understood and scientifically robust approaches must continue while the needs of fishery-directed and broader ecosystem management should remain balanced.
11. Urges the Scientific Council to review the current absence of any formally-defined decision rule(s) framework for the application of the PAF. The Panel notes that this gap may exacerbate perceived differences between the Scientific Council and Fisheries Commission. The Scientific Council should also develop a strategy to be used in applying the PAF to new and exploratory fisheries specifically.
12. Encourages NAFO to review the Exploratory Fisheries Protocol with a view to developing a strategic framework for conservation and management measures for all potential new and exploratory fisheries. In this respect, NAFO may wish to take account of the way in which CCAMLR has approached the issue¹² in terms of developing a unified regulatory framework.
13. Notes that 8 to 11 above implies that priority should continue to be given to considering the extent to which the PAF is also applied in an ecosystem management context.
14. Encourages NAFO to broaden consideration of MSE-type approaches to managing other fisheries for which it is responsible.
15. Recognizes that a NAFO strategic imperative should be to articulate a specific plan aimed at developing ways to conserve biodiversity. NAFO, in general, and the Scientific Council in particular, are also encouraged to formally determine the potential effects that areas closed to fishing are likely to exert in terms of affecting fishing, protecting habitats and conserving biodiversity in the *NAFO Convention Area*.
16. Encourages NAFO to consider whether activities other than fishing in the *NAFO Convention Area* may impact the stocks and fisheries for which NAFO is responsible as well as biodiversity in the *NAFO Regulatory Area*. Such activities might include oil exploration, shipping and recreational activities.
17. Urges the Fisheries Commission to further consider how the management of fishing, particularly of excess capacity, may augment stock sustainability and the meeting of the Convention's objectives.
18. Urges NAFO to deal with lost or abandoned fishing gear in a more consistent manner. It should also consider efforts to introduce management measures to deal more widely with environmental protection issues¹³ (e.g. pollution, discarding of

¹² At: <http://www.ccamlr.org/pu/E/sc/reg-frw-intro.htm>.

¹³ For example, CCAMLR has a Conservation Measure (CM) in place (CM 26-01) to provide general environmental protection during fishing. A number of CCAMLR Resolutions (Res.) also aim to reduce the risks of environmental damage by dealing with vessel safety (Res. 20/XXII, 23/XXIII, 29/XXVIII) and potential sources of pollution (28/XXVIII), such as ballast water. Available at: http://www.ccamlr.org/pu/e/e_pubs/cm/10-11/toc.htm.



packaging bands etc.) likely to arise from fishing activities in the NAFO Convention Area.

19. Recognizes that no directed shark fishing is being undertaken by NAFO Contracting Parties and that the by-catch of shark in the NAFO Regulatory Area is limited in the trawl fisheries. However, the Panel notes that the NCEM definition of ‘shark weight’ should be clarified in reference to the weight being either ‘green’ or ‘processed’ weight as this could impact the calculation of the amount of shark fins permitted aboard a fishing vessel (5% of the shark weight) (Article 17, NCEM).

Scientific Advice

20. Suggests that more transparent information on why any measures have come to be adopted should be provided, especially when such measures appear to be inconsistent with the scientific advice provided by the Scientific Council.
21. Recommends that the Fisheries Commission and the Scientific Council promptly resolve any discrepancies between STATLANT 21A catch estimates and those of STACFIS, if possible, or at least provide some guidance on how they arise, including underlying assumptions made and/or consequences anticipated.
22. Consideration should be given on how dialogue between the Scientific Council and the Fisheries Commission could be strengthened, while still maintaining the intended ‘philosophical’ separation between them. The content of any such dialogue should be considered in terms of providing both groups with the best information available so that decisions, or actions, are based on interpretable, unambiguous and informed understanding. The detailed recommendations in Section X outline two possible areas to be considered in the interests of improving the use of the Scientific Council’s advice by the Fisheries Commission. These include:

Tabular presentation of key management decisions to be taken rather than decisions being obscured in other documentation. This would serve as a ‘targeted framework’¹⁴ and could extend the use of standardized *management procedures* by providing more risk-based, or risk-determined scientific advice.

Developing consolidated descriptions of the scientific approaches, models and underlying assumptions used by the Scientific Council. This could be in the form of a users’ manual¹⁵ outlining, with attached lay explanations, the various assessment being undertaken.

23. Suggests that the extent to which various reference points were being taken into account when stock recovery plans are being considered should be made much more explicit and should be documented alongside the PAF.
24. Suggests that NAFO as a whole may wish to reflect on the use, and allocation, of its scientific capacity from time-to-time, although the burden of scientific input appears to be shared by all NAFO Contracting Parties in proportion to their respective fishery activities.

¹⁴ For example, CCAMLR has a Conservation Measure (CM) in place (CM 26-01) to provide general environmental protection during fishing. A number of CCAMLR Resolutions (Res.) also aim to reduce the risks of environmental damage by dealing with vessel safety (Res. 20/XXII, 23/XXIII, 29/XXVIII) and potential sources of pollution (28/XXVIII), such as ballast water. Available at: http://www.ccamlr.org/pu/e/e_pubs/cm/10-11/toc.htm.

¹⁵ As demonstrated by the Kobe Matrix and the Kobe Plot applied by the tuna RFMOs.



Information

25. Concludes that the potential utility of information presented on the NAFO Website could be enhanced by improving the clarity, and user friendliness, of linkages. In this respect, some thought could be given to providing a clear ‘information map’ on the Website to direct those seeking specific types of information to their source(s) more efficiently¹⁶.
26. Concludes that a clearly designated, and easily accessible, area of the NAFO website should set out a brief history of the PAF’s development and a detailed explanation of its key contents and use, particularly in relation to recovery plans as well as new and exploratory fisheries.
27. Requests that the Panel report be made publically available on the NAFO Website.

Compliance and Enforcement.

Assessment

Issues relating to Contracting Party fulfillment of their duties have been of primary importance to the Organization. The work in this field is under permanent review, primarily in the framework of the Fisheries Commission and its subsidiary body, notably STACTIC. Constant efforts are being made to improve efficiency of compliance, control and enforcement activities by NAFO Contracting Parties. To this end, effective and robust compliance system, consisting of adequate legal foundations and up-to-date control and enforcement mechanisms, has been established and functions effectively in the Organization. NAFO, and NAFO Contracting Parties, are to be commended for ensuring compliance with NAFO conservation measures, and most notably the practice of undertaking a comprehensive Annual Compliance Review¹⁷.

The NAFO MCS system is extensive, comprehensive and in conformity with the standards set by relevant international instruments. NAFO-adopted Port State Measures are comprehensive, in conformity with the relevant provisions of Article 23 of UNFSA, and harmonized with the neighboring RFMO, NEAFC. These qualities contribute to the effectiveness and efficient implementation of such Measures. Most NAFO Contracting Party Port States have also implemented trade-related provisions in their national legislation. This includes the timely development and adoption, as well as effective realization, of combined port control and trade-related measures. These developments serve to prevent port access, or the landing of fish products by non-compliant vessels. The PRP notes that such measures are likely to have contributed significantly to the absence of IUU vessels in the NAFO Regulatory Area since 2006. The PRP also welcomes the establishment and wide dissemination of NAFO IUU fishing vessel lists.

The main requirements for following-up infringements in a number of internationally-agreed instruments are adequately incorporated into NAFO basic texts and practices. Significant progress has been made by the Organization on this issue, in particular through the NAFO Annual Compliance Review (see above). However, in the PRP’s view, the quality and timeliness of Contracting Party reporting on the infringement follow-ups still requires improvement to bring such reporting into conformity with Contracting Party obligations as prescribed by the NAFO Convention and NCEM. As of March 2011, no information on citation status has been provided by the relevant Contracting Parties on 12 of the 88 citations issued between 2006 and 2010 (Table 17).

¹⁶ With the growing importance of electronic media as a means to disseminate information and promote communication, the PRP urges NAFO to consider refining its website to ensure that it continues to support the internal workings of NAFO as well as providing an important educational and outreach tool.

¹⁷ A high level initiative compared to similar efforts in many other fishery management bodies.



Advice

The Panel:

- 1. Notes that there is a need to further address the issues of equitable sharing between Contracting Parties of inspection coverage (and/or related costs - as was suggested at the 2003 Annual Meeting), as well as the timeliness and quality of data submitted by Contracting Parties. There is also a need to address the timely and effective follow-up of infringements.**
- 2. Recommends further harmonization of relevant NAFO rules with applicable provisions of the FAO Port States Measures Agreement. Considering that NEAFC is currently undertaking similar work, the PRP suggests that the NEAFC experience in this regard be taken into account by NAFO. To the extent possible, NAFO should also cooperate with other RFMOs to enhance the efficiency of its Port State Measures.**
- 3. Suggests that NAFO could consider expanding CEM Article 23, so that all catches are labeled according to the stock area where they were taken and traceability can be improved.**
- 4. Urges that the quality and timeliness of Contracting Party infringement follow-up reporting be improved so that Contracting Parties better meet their obligations under the Convention and NCEM. In this respect, the situation where reports are only available for 12 out of 88 citations between 2006 and 2010 is not only unsatisfactory, but should be urgently addressed.**
- 5. Encourages NAFO to continue to cooperate with other RFMOs in the establishment and dissemination of the NAFO IUU fishing vessel list.**
- 6. Encourages Contracting Parties to further consider possible improvements to NAFO trade or market-related measures, in accordance with the requirements of international law. In the PRP's view this is crucial for the prevention, deterrence and elimination of IUU fishing in the NAFO Regulatory Area. To the extent possible, NAFO efforts for trade related measures should take into consideration similar measures being implemented elsewhere.**

International Cooperation

Assessment:

The Panel considers NAFO's publicity and information-dissemination efforts to be of a high standard. The Secretariat's role in these efforts is commended. Recent, and notable, efforts by the Secretariat to enhance the Organization's international cooperation and transparency are also commended. However, the Scientific Council should be encouraged to give careful consideration to improving its explanation of both the scientific processes it follows and the results/advice it provides. The resultant information should be intelligible to other scientists outside NAFO. This would not only promote the Council's work, but would also facilitate broadened scientific debate and understanding of how the Council goes about its work.

Recognizing that there are no non-Contracting Parties (cooperating or otherwise) operating in the NAFO Regulatory Area at present, the Panel commends NAFO for its past actions, as these appear to have resulted in the disappearance of IUU fishing activities in the Area.

The Panel comments on the special requirements of developing States are provided in Section 3.2.14. It notes that no specific program has been developed by NAFO to directly address such requirements. However, some NAFO initiatives, such as the Professional Development Internship (PDI) Program may provide assistance in this regard. This Program not only provides NAFO staff with international training, but also facilitates cooperation and



exchange with other fisheries organizations, and educational activities (e.g. students internship in the Secretariat, including from the Philippines and Ghana, as well as from the International Ocean Institute and Marine Affairs program at Dalhousie University, Halifax¹⁸).

Advice

The Panel:

- 1. Urges the Scientific Council to give careful consideration to improving its explanation of both the scientific processes it follows and the conclusions and results/advice it provides.**
- 2. Encourages NAFO to continue developing cooperative relationships with other RFMO/As and International Organizations, as appropriate, to achieve its objectives and facilitate its work.**

Financial and Administrative Issues

Assessment

Financial arrangements in the Organization appear to be adequate and in keeping with best practice. At present, Contracting Parties are providing the financial resources needed to achieve the aims of NAFO and to implement NAFO decisions. However, budgetary instability arising from late contributions or failure to contribute may compromise this situation. Taking into account that not long ago the Organization was considered to be in an emergency funding situation, the Panel notes that the timely payment by Contracting Parties of their budget contributions is crucial to ensuring that NAFO's budget remains cash-stable and that the financial responsibilities for its functions are equitable. Therefore, the timely payment of annual contributions should remain a high priority for the Organization.

The Panel notes that NAFO has provided for an additional allocation of funds in its budget to ensure that specific activities are adequately financed. This has allowed for flexibility to address budgetary requirement on the basis of specifically identified needs, while it also serves to constrain budgetary growth within reasonable limits commensurate with NAFO's needs.

The various administrative arrangements attached to the Secretariat's responsibilities and functioning are of a high standard. The Secretariat seems to function well and the organization of meetings, the production of necessary documentation and attached communication are good. The increasing task list for the Secretariat appears to have been efficiently handled up to this point. Nevertheless, the Panel feels that there is a need to ensure that a 'critical mass' of essential skills is sustained and that functional continuity should be maintained whenever senior staff leave.

The Secretariat is close to a critical point in terms of its workload and the availability of personnel to meet daily work needs. The recent addition of new tasks (e.g. daily VMS reporting and archiving) has augmented such pressure. Therefore, the Panel feels that failure to provide additional Secretariat staff capacity will compromise service delivery in the not-too-distant future. The structure of the Secretariat has recently been reorganized. Any future reorganization or expansion of NAFO's work is likely to be profoundly significant for how the Secretariat organizes its work to sustain a high-level of service delivery.

The Executive Secretary's role in disseminating high-quality information about NAFO should be recognized, along with that of other senior Staff. Consideration of an enhanced Organizational communications strategy and media policy may also be of merit.

The Panel notes that, despite an increasing workload and the increased complexity of NAFO's scientific advice and fisheries management activities, the Secretariat continues to support the Organizations' work in a highly professional and effective manner. This is largely attributable to the recent development of a human-relations focus to Secretariat staff as well considerable efforts to ensure, and broaden, expertise available within the Secretariat. The Panel commends the Secretariat for its work in supporting NAFO.

¹⁸ Which includes interns, students and trainees from developing countries and elsewhere.



The Panel notes that the Secretariat is fully utilizing the available space in the current NAFO Headquarters premises. This could constitute a point of concern in respect to any potential for future Secretariat growth or expansion. The anticipated expansion of NAFO activities, especially those connected with data collection and sharing, also indicates that new communication and information technologies may be required. This will necessitate an elaboration of rigorous professional training programs, and/or opportunities for Secretariat staff.

To promote institutional efficiency, the work of the General Council should draw on outcomes from the deliberations of the NAFO subsidiary bodies, but it should not duplicate the work already undertaken by these bodies. In this regard, the Panel notes that the entry into force of the 2007 NAFO Amended Convention will certainly, and positively, impact the Organization's structure.

Advice

The Panel:

- 1. Urges Contracting Parties to continue their efforts to secure NAFO's financial stability in future, noting existing best practices in this regard.**
- 2. Urges NAFO to apply the provision contained in Article XVI of the 1978 Convention, whereby a Contracting Party which has not paid its contributions for two consecutive years, shall not enjoy the right of casting votes and presenting objections until it has fulfilled its obligations.**
- 3. Notes that although reimbursement of the budget surplus in one year to the following year's contributions is in keeping with many other international organizations, consideration should be given to withholding any reimbursement of budget surplus amounts to Contracting Parties which are in arrears of their full contributions.**
- 4. Suggests that application of cost-recovery measures could be considered as a way of alleviating potential financial stress on NAFO Contracting Parties.**
- 5. Suggests that NAFO apply accrual accounting principles to manage its budget to be in conformity with the international norm as well as to provide a more accurate and contemporary picture of the Organization's financial standing.**
- 6. Suggests developing a *NAFO Staff Contract* to provide a more formal standing to the various Staff position descriptions, working conditions and appraisal procedures outlined in [NAFO Secretariat Staff Structure](#) (Fischer & Goodick, 2009) document, the PRP. In particular, a *Contract* would provide an opportunity to formally outline procedures for dealing with Staff grievances and dismissal specifically.**
- 7. Concludes that there is a need to amend certain NAFO Staff Rules (NAFO, 2010a) provisions pertaining to the rights and obligations of NAFO Secretariat Staff, particularly for dismissal or termination of appointment conditions. Such amendment should take into account relevant existing best practices. Given the Organization's intergovernmental nature, special attention should be given to relevant, and applicable, Canadian legislative provisions, as well as international law, in terms of Secretariat staff employment rights, obligations and conditions.**
- 8. Concludes that failure to provide additional Secretariat staff capacity will compromise service delivery in the not-too-distant future and should be addressed as a matter of urgency. The Panel also urges that clear guidance should be given by the General Council to ensure that work priorities can be identified and that the need for any additional resources (human or fiscal) are adequately addressed sooner rather than later.**



9. **Suggests that metrics be developed for various Secretariat duties/tasks to better determine the efficiency of Secretariat service delivery in particular. The metrics could be based on a schedule of tasks/activities to be undertaken, the completion of tasks against identified guidelines/deadlines, and the final service outputs delivered in terms of delivery efficiency/standards.**
10. **Concludes that there is a need to ensure that a ‘critical mass’ of essential Secretariat skills is sustained and that functional continuity should be maintained whenever senior staff leave. To this end, the professional development of Staff and the sharing of essential task skills must continue to be encouraged.**
11. **Recommends that the Secretariat be requested to scope and project its future accommodation needs.**
12. **Further recommends that NAFO consider enhancing its Organizational communications strategy and media policy. In this context, it should also explicitly clarify the Executive Secretary’s responsibilities, along with those of other office bearers, for the communication of such information.**
13. **Recommends timely, and adequate, planning to provide the Secretariat with appropriate human, financial and other resources for its future work.**
14. **Highlights the point that, reports should be as succinct as possible and confined to matters of substance only to improve documentation of meeting outcomes. Technical details can be provided in appendices and as far as possible reports should represent a distillation of collective views, unless otherwise decided for controversial/high priority subjects. Executive summaries of key conclusions and decisions should be provided if possible.**





1. Introduction

1.1. Background for the Performance Review

1. The Northwest Atlantic Fisheries Organization (NAFO) established a Performance Assessment Working Group (PAWG) in 2009 to address the establishment of a performance review (the “Review”) aimed at identifying NAFO’s strengths and weaknesses. The Review was predicated by the 2006 United Nations General Assembly (UNGA) Resolution 63/112 on “Sustainable Fisheries for Regional Fishery Management Organizations” (RFMOs). PAWG met once in Halifax, NS, Canada during 26-27 April 2010, and the NAFO Performance Review’s Terms of Reference (Appendix I) were drafted for approval by the Organization’s Annual Meeting in September, 2010. The work to be undertaken by the Review Panel had the primary aim of assessing NAFO’s performance since 1979 against the 1978 NAFO Convention (the “Convention”) objectives and other relevant international instruments addressing marine living resources conservation and management of marine living resources. Special emphasis was to be given to the period since 1995, particularly noting additional, or new, objectives arising from amendments to the 1978 Convention adopted by NAFO in 2007. It was noted that consideration should also be given to developments in fisheries and ocean management that had taken place during the period covered by the Review.

1.2. Terms of Reference and criteria of the Performance Review

2. NAFO decided that the Review should be performed on the basis of criteria provided and should not only highlight achievements, but should also identify areas for improvement. The reviewing performance criteria (Appendix II) were developed at the “Joint Meeting of Tuna Regional Fisheries Management Organizations” (Kobe, Japan, 2007), with a few minor changes. The following five criteria areas were agreed upon: Conservation and Management, Compliance and Enforcement, Decision-Making and Dispute Settlement, International Cooperation, as well as Financial and Administrative Issues.

1.3. The Performance Review Panel

3. The Performance Review Panel (the ‘Panel’) was comprised by three external experts and four internal experts. The external panel members were experts in the fields of fisheries management (Dr. Fábio Hazin), fisheries science (Prof. Denzil Miller), and law of the sea (Mr. Milton Haughton). These panelists were nominated by FAO, ICES and UN-DOALOS, respectively. They were also chosen on the condition of not having participated in the work of NAFO before and as non-nationals of any NAFO Contracting Party. The internal experts were nominated by NAFO members as follows: Canada (James Baird), Denmark (in respect of Faroe Islands and Greenland) (Einar Lemche), the European Union (John Spencer) and the Russian Federation (Olga Sedykh)¹⁹. In addition, the Chair of STACTIC acted as an information resource to be used by the Panel. The Secretariat provided administrative assistance and organized the two Panel meetings held at the NAFO Secretariat Headquarters in Dartmouth, NS, Canada, during 28 February – 04 March 2011 and 31 May – 3 June 2011.

1.4. Methodology of the Performance Review Panel

4. The Review Work Plan (Appendix IV) turned the criteria into questions which were grouped into six sections:
 - A) Legal and Institutional Framework: Focused on the Basic Texts, 1978 NAFO Convention, 2007 Amended NAFO Convention, and relevant international instruments, such as UNCLOS, UNFSA, FAO Code of Conduct; plus institutional arrangements established for NAFO’s work.

¹⁹ The A short *curriculum vitae* for each external and internal experts is provided in Appendix III

- B) Scientific Council: Focused on the quantity and quality of data received, processed and analyzed (including whether there were data and/or information that Contracting Parties should, or could have, provided but have failed to do in a timely manner); the frequency and quality of stock assessments undertaken, and the consequent management recommendations presented to the Commission, etc.
 - C) General Council/Fisheries Commission: Focused on all conservation and management measures adopted by NAFO, since 1979; how the implementation of these measures has been verified and ensured, including follow-up on infringements; what are the rules for the decision-making process and dispute settlement, etc.
 - D) Contracting Parties: Focused on how NAFO conservation and management measures have been implemented by the NAFO Contracting Parties, including data provision, MCS, etc.
 - E) Secretariat: Focused on the adequacy of Secretariat resources for meeting its mandate and how the Secretariat is managing its human and financial resources; how efficiently and effectively it is supporting the work of the Scientific Council and of the Fisheries Commission.
 - F) Final Results of NAFO Work: Focused on the present situation and the historical evolution of the Organization and the condition of the marine living resources, managed by NAFO, since 1979.
5. The Review Panel agreed that the above questions should be considered taking into account available background information and information compiled by the NAFO Secretariat. It also agreed to draw on input from the STACTIC and Scientific Council Chairs where necessary.



2. Background and brief history of NAFO

2.1. The foundation

1. NAFO was founded in 1979 an international organization to promote the conservation and optimum utilization of the fishery resources of the Northwest Atlantic. It succeeded the 1949 International Commission for the Northwest Atlantic Fisheries (ICNAF) on the Convention's signing in 1978. In the mid-Twentieth Century (1949), a number of fishing nations were concerned with growing threats to the Northwest Atlantic's marine living resources. They agreed to establish an [international organization - ICNAF](#) (NAFO, 2011e) to protect and conserve the fish resources of the Northwest Atlantic area, taking account of modern fisheries science. After almost 30 years of activity, and following the extension of national fisheries jurisdiction by the coastal States to 200 nautical miles, ICNAF was replaced by the [Northwest Atlantic Fisheries Organization](#) (NAFO) (NAFO, 2011e) in 1979 under the [1978 International Convention for the Northwest Atlantic Fisheries](#) (NAFO, 2004a). In 2007 the [Amended Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries](#) (NAFO, 2007a) was adopted.
2. Between 1979 and 1996 the Convention was amended three times by modifications to its Annex III- "Scientific and Statistical Subareas, Divisions and Subdivisions". The boundaries between Subareas 0-1, 4-5 and 3 of the Convention Area were changed on 1 January 1980, on 9 October 1987, and 13 September 1996, respectively.
3. Following a two-year process, NAFO adopted on 28 September 2007 its "[Amendment to the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries](#)" (NAFO, 2007a). This constituted the first formal step towards a reformed Convention for NAFO. In 2008, [the French version](#) (NAFO, 2008a) of the Amended NAFO Convention was adopted in order to pave the way for its ratification. The adopted text remains to be ratified by at least three-fourths (75%) of the NAFO Contracting Parties to become legally binding. The attached process is outlined in Article XXI of the current 1978 NAFO Convention.

2.2. Objective and mandate

4. NAFO's overall objective is: "to contribute through consultation and cooperation to the optimum utilization, rational management and conservation of the fishery resources of the Convention Area" (Article II.1 of the Convention). This objective was adjusted in the Amended Convention to read: The objective of this convention is to ensure the long term conservation and sustainable use of the fishery resources in the Convention Area and, in so doing, to safeguard the marine ecosystems in which these resources are found.

2.2.1. Area of competence

5. The NAFO Convention Area encompasses a large portion of the Atlantic Ocean and includes the 200-mile Exclusive Economic Zones (EEZs) under coastal States jurisdiction (USA, Canada, St. Pierre et Miquelon and Greenland). However, NAFO only manages the areas straddling and outside the EEZs (Figure 1). According to Article 1.2 of the 1978 Convention and Article I (p) of the 2007 Amended Convention, the Regulatory Area refers to the part of the Convention Area beyond areas of national jurisdiction.



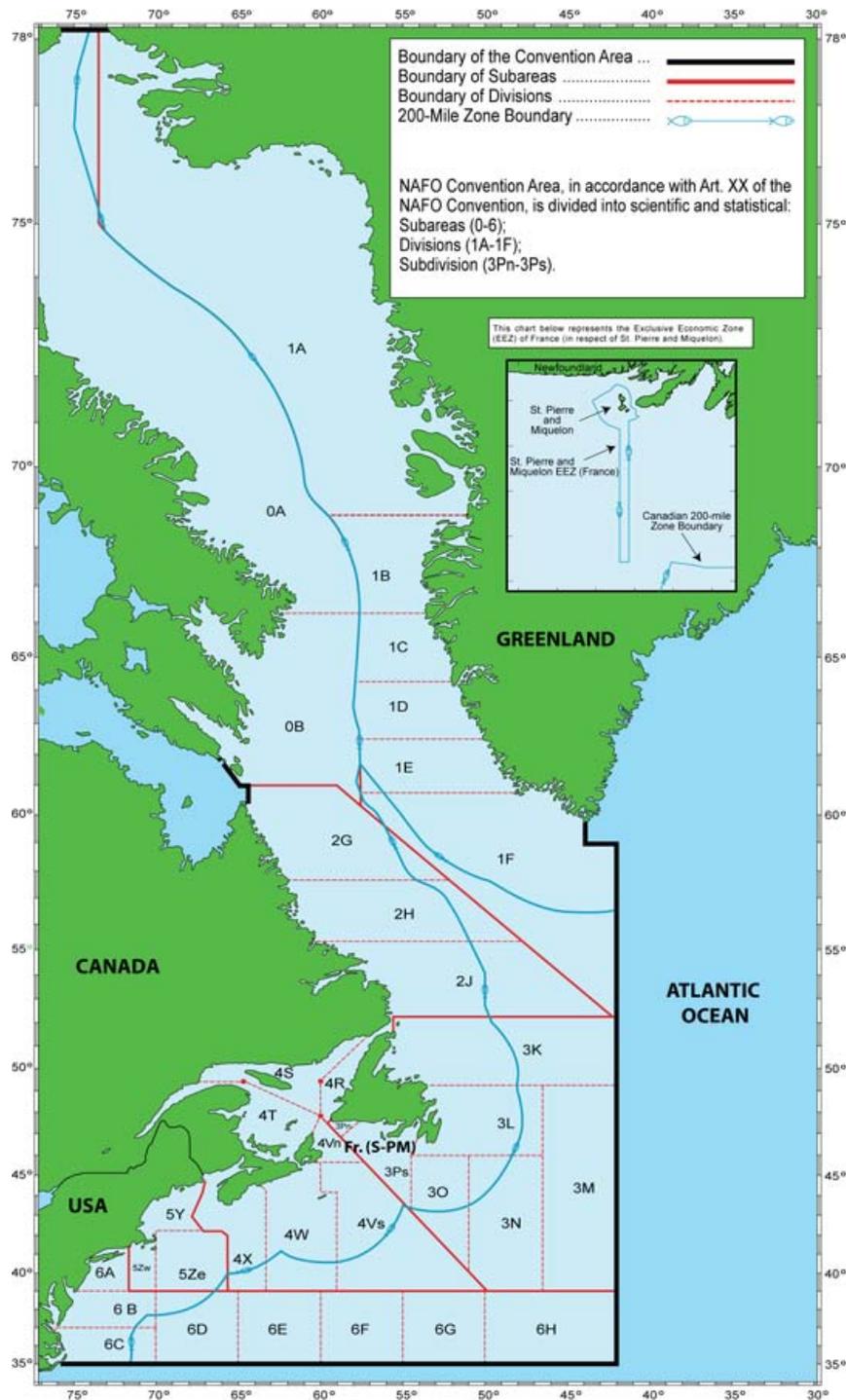


Figure 1. NAFO Convention Areas and Subareas

2.2.2. Species and stocks covered

- The 1978 NAFO **Convention** applies to all fishery resources in the Northwest Atlantic except salmon, tunas/marlins, whales, and sedentary species (e.g. shellfish) on the Continental Shelf (i.e. organisms which, at the harvestable stage, either are immobile on, or under, the seabed, or those organisms unable to move except in constant physical contact with the seabed or the subsoil (*NAFO Convention* Article I)). The NAFO regulated stocks are identified in Table 1.



Table 1. NAFO Regulated Stocks

Stock	First Regulated*
Div. 3NO Capelin	1979
Subarea 3+4 Squid	1979
Div. 3M Cod	1980
Div. 3NO Cod	1980
Div. 3LN Redfish	1980
Div. 3M Redfish	1980
Div. 3LNO American Plaice	1980
Div. 3M American Plaice	1980
Div. 3LNO Yellowtail	1980
Div. 3NO Witch Flounder	1980
Div. 3LMNO Greenland Halibut	1995
Div. 3LNO Shrimp	2000
Subarea 2+ Div. 1F+ Div. 3K Redfish	2001
Div. 3M Shrimp ¹	2004
Div. 3L Cod ²	2004
Div. 3L Witch Flounder	2004
Div. 3O Redfish	2005
Div. 3NO White Hake	2005
Div. 3LNO Skates	2005
* Year the stock first appeared in the Annual Quota Table.	
¹ Effort Allocation Scheme on this stock was agreed at the 1995 Fisheries Commission Annual Meeting and first applied in 1996. Div. 3M shrimp appeared in the 2004 Quota Table as Annex IB of the NCEM (Sources: Meet. Proc. 1995 , Section V (NAFO, 1996c), FC Doc. 95/21 (REV) (NAFO, 1995c), FC Doc. 04/1 (NAFO, 2004d)).	
² Conservation and management measures concerning Div. 3L Cod, currently contained in Article 4 of the NCEM, were adopted in September 1996 and came in force since 1997. Div. 3L Cod appeared in the 2004 Quota Table with TAC = 0 (Sources: FC Doc. 96/10 (NAFO, 1996a), FC Doc. 97/1 (NAFO, 1997c)).	

2.3. Membership

7. NAFO has 12 Contracting Parties from North America, Europe, Asia and the Caribbean. These comprise Canada, Cuba, Denmark (in respect of Faroe Islands and Greenland), the European Union, France (in respect of St. Pierre et Miquelon), Iceland, Japan, Norway, Republic of Korea, the Russian Federation, Ukraine and the United States of America.

2.4. Institutional structure

8. NAFO's structure (Figure 2) comprises:

The **General Council** which is responsible for internal affairs and external relations. The General Council Chair also serves as the President of NAFO.

The **Scientific Council** which gives advice upon request on the status of fish stocks in the NAFO Convention Area to Fisheries Commission and coastal States. The Scientific Council publishes the NAFO *Journal of Northwest Atlantic Fishery Science*.



The **Fisheries Commission** which is responsible for the management and conservation of the fishery resources of the Regulatory Area (waters outside the EEZs). It annually decides on the NAFO fisheries regulations, TACs and quotas (NAFO Conservation and Enforcement Measures).

The **Secretariat** (NAFO headquarters) which gives support to the overall work of the Organization and is located in Dartmouth, Nova Scotia, Canada.

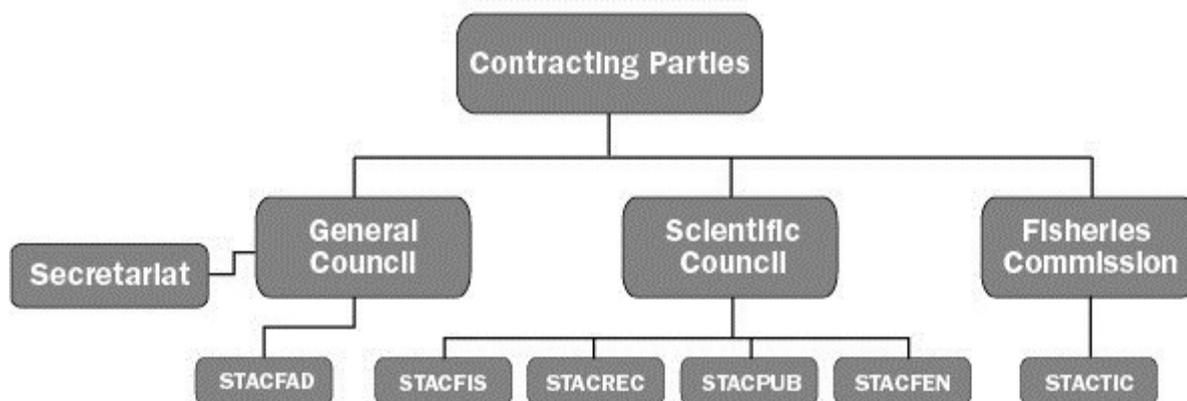


Figure 2. Current NAFO structure and subsidiary bodies

9. The 2007 Amended Convention merges the General Council and the Fisheries Commission into one single body: the Fisheries Commission. The ratification of these amendments is still in progress. Details of the NAFO structure and its subsidiary bodies are included in Appendix V.

2.5. NAFO activities

10. NAFO's main activities take place under the direction of its three constituent bodies: General Council (NAFO, 2011f), Scientific Council (NAFO, 2011f), and Fisheries Commission (NAFO, 2011f), supported by the Secretariat (NAFO, 2011f). The NAFO Annual Report (NAFO, 2011g) summarizes the activities, discussions and decisions of these bodies. The Organization's meeting schedule (NAFO, 2011h) is accessible on the website. NAFO functions and activities include:

Fisheries:

- Fisheries Commission: The NAFO Fisheries Commission (FC) has its principal meeting once a year, usually in September. At times, the FC and/or its subsidiary body (STACTIC) will meet intersessionally. [Meeting Reports](#) (NAFO, 2011m) are public and accessible on the NAFO Website.
- [Fishery Regulations](#) (NAFO, 2011n): Once a year the NAFO Fisheries Commission agrees on [Conservation and Enforcement Measures \(NCEM\)](#) (NAFO, 2011d) These include various management and control regulations, a monitoring scheme, as well as inspection and surveillance measures.
- [Compliance](#) (NAFO, 2011t): Since 2004, NAFO has published an annual compliance report. Enforcement of the NAFO Fishery Regulations is a national responsibility.
- [NAFO Fisheries](#) (NAFO, 2011i): Summary overviews of fishery activities in the NAFO Regulatory Area can be found on the website Fisheries Pages. NAFO holds [statistical data](#) (NAFO, 2011k) on fishery catches by species, area and nation since the 1960s.

Science:

- [Scientific Advice](#) (NAFO, 2011j): The Scientific Council has four Standing Committees (Appendix V) and its main task is the elaboration of scientific advice to the Fisheries



Commission and coastal States on the status of fish stocks in the NAFO Convention Area. For this assessment, NAFO Contracting Party scientists cooperate in the sampling, analyses and summary of relevant data. During the Scientific Council meetings, information is presented and discussed within the different Standing Committees. The [SC Meeting Reports](#) (NAFO, 2011p) are public and accessible on the Website.

- [Scientific Council Publications](#) (NAFO, 2011v): NAFO publishes peer-reviewed papers in its *“Journal of Northwest Fishery Science”* on its own Website (JNAFS, 2011a). Additional scientific papers of general interest are published in *“Scientific Council Studies”* (NAFO, 2011q).
- [Scientific Events](#) (NAFO, 2011w): NAFO organizes and sponsors symposia and workshops on subjects of special interest. Table 2 lists all NAFO sponsored symposia, special sessions and workshops, since 1981.

Cooperation with other international Fishery Bodies:

NAFO is an active member of:

- Coordinating Working Party of Fisheries Statistics (CWP)
- Fishery Resources Monitoring System (FIRMS/ FIGIS)
- Aquatic Sciences and Fisheries Abstracts (ASFA)
- International Fisheries Commissions Pension Society (IFCPS)
- North Atlantic Fishery Management Organizations (NARFMO)
- Regional Secretariat’s Network (RSN).

In addition, NAFO participates in:

- UN DOALOS meetings
- FAO COFI meetings
- Other RFMOs annual meetings (NAMMCO, NEAFC, SEAFO, NPAFC)
- FAO special meetings (such as Technical Consultations on International Guidelines in Deep Sea Fishery, International Guidelines on By-catch Management and Reduction of Discards etc.)
- FAO research projects (D4-science)
- International Fisheries Commissions Pension Society (IFCPS)
- AGDC (inter-RFMO’s group, responsible for standards relating to VMS communication in the North Atlantic)

11. In addition, NAFO has a Memorandum of Understanding (MoU) with the International Council for the Exploration of the Seas (ICES). Cooperation with ICES is reflected in a Joint Working Group on northern shrimp assessment (NIPAG) and the shared Working Groups on “Harp and Hooded Seals” and on Deep-sea Ecology (WGDEC), as well as informal relations with some other ICES groups such as ICES NWWG- Northwestern Working Group.



Table 2. Scientific events sponsored by NAFO, from 1981 to present.

Year	Scientific Event
2009	Rebuilding Depleted Fish Stocks- Biology, Ecology, Social Science and Management Strategies
2008	The Role of Marine Mammals in the Ecosystem in the 21st Century
2007	Reproductive and Recruitment Processes of Exploited Marine Fish Stocks
2006	Environmental and Ecosystem Histories in the Northwest Atlantic - What Influences Living Marine Resources
2004	The Ecosystem of the Flemish Cap
2003	Mapping & Geostatistical Methods for Fisheries Stock Assessments
2002	Mini-Symposium on Environmental Conditions in NAFO Waters
2002	Elasmobranch Fisheries: Managing for Sustainable Use and Biodiversity Conservation
2001	Deep-Sea Fisheries
2000	Workshop on Assessment Methods
1999	NAFO/PICES/ICES Pandalid Shrimp Fisheries - Science and Management at the Millennium
1998	Variations in Maturation, Growth, Condition and Spawning Stock Biomass Production in Groundfish
1997	What Future for Capture Fisheries - A Shift in Paradigm: Visioning Sustainable Harvests for the Northwest Atlantic in the Twenty-first Century
1996	Workshop on "Assessment of Groundfish Stocks Based on Bottom Trawl Survey Results"
1995	NAFO/ICES Symposium on the Role of Marine Mammals in the Ecosystem
1994	Impact of Anomalous Oceanographic Conditions at the Beginning of the 1990s in the Northwest Atlantic on the Distribution and Behaviours of Marine Life
1993	Special Session on Gear Selectivity/Technical Interactions in Mixed Species Fisheries
1992	Special Session on State-of-the-Art in Fish Assessment: A Tutorial/Workshop on Calibration Methods and Their Practical Use
1991	Changes in Abundance and Biology of Cod Stocks and Their Possible Causes
1990	Special Session on Management Under Certainties
1989	Special Session on Changes in Fish Populations
1988	Special Session on Interaction Between Environment and Fish Stocks
1987	Special Session on Biology of Demersal Resources of the North Atlantic Continental Slopes, with Emphasis on Greenland halibut and Grenadiers
1896	Special Session on Recent Advances in Understanding Recruitment in Marine Fisheries of the Northwest Atlantic with Particular Emphasis on Georges Bank Herring and Flemish Cap Cod and Redfish Stocks
1985	Special Session on Design and Evaluation of Biological Surveys
1984	Special Session on Biology and Ecology of Squids in the Northwest Atlantic
1983	Special Session on Trophic Relationships in Marine Species Relevant to Fisheries Management in the Northwest Atlantic
1982	Special Session on Stock Discrimination in Marine Fishes and Invertebrates of the Northwest Atlantic
1981	Special Session on Remote Sensing Methods and Their Possible Application to Fisheries Science
1981	Environmental Conditions in the Northwest Atlantic During the 1970-79 Decade



3. The Convention and its consistency with other International fisheries instruments and initiatives.

3.1. Summary of applicable international legal regime: global treaties and international instruments concerning fisheries.

1. NAFO is an RFMO established to ensure effective conservation, management and optimum sustainable utilization of the high seas fisheries within the Convention Area. The [NAFO Performance Review Guidelines](#) of September 2010 (NAFO, 2010b) mandate the Review Panel to “assess the performance of NAFO since 1979 against the objectives set out in the NAFO Convention and other relevant international instruments addressing the conservation and management of marine living resources, with special emphasis on the period since 1995”. The relevant international instruments include the 1982 United Nations Convention on the Law of the Sea (UNCLOS)²⁰, the 1995 UN Fish Stocks Agreement (UNFSA)²¹, the 1993 FAO Compliance Agreement (Compliance Agreement)²², the 1992 Convention on Biological Diversity (CBD)²³, the 2009 FAO Agreement on Port State Measures to Combat IUU Fishing²⁴, the FAO Code of Conduct for Responsible Fisheries, and associated International Plans of Action, among others. A summary of these instruments is provided in Appendix VI.
2. The Review Guidelines also identify some of the specific principles and standards in international fisheries instruments as the benchmark against which NAFO’s performance should be evaluated. This chapter analyzes the extent to which these principles and standards have been incorporated into the Basic Texts of the Organization.

Performance Review Panel Assessment and Recommendations:

1. **The Panel noted that not all NAFO Contracting Parties are parties to the international treaties establishing the governance framework for fisheries and protection of biodiversity in the marine environment. It urged all NAFO Contracting Parties that have not done so, to become parties to UNCLOS, the UNFSA, the Compliance Agreement, and the CBD.**

3.2. Review and analysis of the basic texts in relation to relevant international law

3. The NAFO Basic Texts consist of the [1978 NAFO Convention](#) (NAFO, 2004a) and the [2007 NAFO Amended Convention](#) (NAFO, 2007a), the [Rules of Procedure, the Financial Regulations](#) (NAFO, 2009a) and the [Staff Rules](#) (NAFO, 2010a). Another important document is the [NAFO Conservation and Enforcement Measures \(NCEM\)](#) (NAFO, 2011d). The NAFO Conventions are framework agreements that set out basic principles, standards, and rules for achieving the objectives of the Organization. The 1978 NAFO Convention pre-dates UNCLOS and subsequent international fisheries instruments such as the UNFSA, the Compliance Agreement and legally non-binding instruments

²⁰ The following NAFO Contracting Parties are parties to UNCLOS: Canada, Cuba, Kingdom of Denmark, European Union, France, Iceland, Japan, Republic of Korea, Norway, Russian Federation, and Ukraine. The United States of America is the only NAFO Contracting Party that is not a party to UNCLOS.

²¹ The following NAFO Contracting Parties are parties to the UNFSA: Canada, Kingdom of Denmark, European Union, France, Iceland, Japan, Republic of Korea, Norway, Russian Federation, Ukraine, United States of America. * Cuba is the only NAFO Contracting Party that is not a party to the UNFSA.

²² The following NAFO Contracting Parties are parties to the Compliance Agreement: Canada, European Union, Japan, Republic of Korea, Norway and the United States of America.

²³ The following NAFO Contracting Parties are parties to the CBD: Canada, Cuba, Kingdom of Denmark, European Union, France, Iceland, Japan, Republic of Korea, Norway, Russian Federation, and Ukraine.

²⁴ NAFO Contracting Parties that have signed the FAO Port States Measures (PSM) Agreement: Canada, European Union, France, in respect of Saint Pierre and Miquelon, Norway, Russian Federation, USA.



such as the FAO Code of Conduct. The 1978 NAFO Convention was amended in 2007 (Amended Convention) to incorporate recent developments in international fisheries law and practice. The 2007 Amended Convention has not yet entered into force as a three-fourth majority of the Contracting Parties must ratify it before it can become effective (Article XX1(2), 1978 NAFO Convention). However, if any Contracting Party objects to the amendments within 90 days of their adoption and circulation then the Amended Convention will not enter into force (Article XXI (3), 1978 NAFO Convention).

4. For the purposes of this Chapter, the Basic Texts are reviewed against relevant provisions of international fisheries law in accordance with the following topics from the NAFO [Performance Review Guidelines](#) of September 2010 (NAFO, 2010b):

Conservation and management

1. Ecosystem approach/ecosystem-based management
2. Data collection and sharing
3. Precautionary approach
4. Conservation of marine Biodiversity
5. Compatibility of measures for areas under national jurisdiction and the high seas
6. Fishing allocations and opportunities

Compliance and enforcement

7. Flag State duties
8. Port State measures
9. Monitoring, control, surveillance (MCS) and enforcement
10. Market-related measures

Decision-making and Dispute settlement

11. Decision-making and Dispute settlement procedures

International Cooperation

12. Relationship with non-Contracting Parties
 13. Cooperation with other regional fisheries management organizations.
 14. Special requirements of developing States
5. The review undertaken in this section thus considers the extent to which the relevant principles and standards of international fisheries law concerning the above issues have been incorporated and addressed in the NAFO Basic Texts. A summary of relevant international instruments that address fisheries issues, including a brief description of relevant provisions relating to the above mentioned performance review criteria, is provided in Appendix VI.

3.2.1. The Ecosystem Approach

6. Fish stocks are integral components of the wider marine ecosystems in which they live. Ecosystem-based approach to fisheries management is a fairly recent development that has gained widespread acceptance in modern fisheries governance. It is an approach that acknowledges that fishing and other activities take place within complex communities of organisms and habitats and considers the impact of fishing on the entire ecosystem. The main goal of ecosystem-based fisheries management is to ensure the sustainability of catches without compromising the inherent structure and functioning of the marine ecosystem. Although defining best-practices may be relatively straightforward, these new approaches pose significant challenges for implementation. Managing complex marine ecosystems requires considerably more data and information about ecological relationships and the impact on them of human activities than are provided by single species management regimes ([Lodge et al., 2007](#)).



7. UNCLOS does not expressly mention the ecosystem approach but implicitly addresses the basic components of it. Article 61 provides that in establishing conservation measures in the EEZ, coastal States shall take into consideration the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened. Article 119 (1) (b) imposes similar obligation upon States with respect to fishing on the high seas. In respect of the marine environment, Article 192 of UNCLOS establishes the general duty of all States to adopt measures to protect and preserve the marine environment. States are also required to take the measures necessary to protect and preserve rare or fragile ecosystems and the habitat of depleted, threatened or endangered species and other forms of marine life (Article 194(5)).
8. UNFSA Article 5 (d) lists as one of the general principles the obligation on States to assess the impacts of fishing, other human activities and environmental factors ‘on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks’. The term ‘species belonging to the same ecosystem’ implies a broader range of species than those associated with or dependent on the target species (Churchill and Owen, 2010). Article 5(f) establishes an obligation on States to minimize pollution, waste, discards, catch by lost or abandoned gear, catch of non-target species, both fish and non-fish species, and impacts on associated or dependent species, in particular endangered species, through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques. The term ‘non-target species’ presumably includes both fish and non-fish species. There is also a commitment in the general principles to protect biodiversity in the marine environment (Article 5(g)). Article 6 (3) (d) further obliges States, in implementing the precautionary approach, to take into account the impact of fishing activities on non-target and associated or dependent species... and to protect habitats of special concern.
9. The Code of Conduct stresses the importance of ecosystems to fisheries and calls for due respect for and protection of ecosystem and biodiversity. Articles 6.1 and 6.2 provide that States and fishers should conserve aquatic ecosystems, and management measures should not only ensure the conservation of target species but also of species belonging to the same ecosystem or associated with or dependent upon the target species. Other components of the ecosystem approach are addressed by the Code including the need to develop selective and environmentally safe fishing gear in order to maintain biodiversity, the need to minimize waste, catch of non-target species, discards, and impacts on associated or dependent species, and the need to protect critical fisheries habitats (Articles 6.6, 6.8 and 7.2). The provisions of the Code have been supplemented by technical guidelines developed by FAO to facilitate implementation of the ecosystem approach to fisheries ([FAO, 2003](#)). The Technical Guidelines identify a number of principles to facilitate and guide States and RFMO in implementation of an ecosystem approach to fisheries.
10. The principles outlined in the *FAO Ecosystem Approach to Fisheries(EAF)* provide that: (a) fisheries should be managed to limit their impact on the ecosystem to the greatest extent possible, (b) ecological relationships between harvested, dependent and associated species should be maintained, (c) management measures should be compatible across the entire distribution of the resource (across jurisdictions and management plans), (d) the precautionary approach should be applied because the knowledge of ecosystems is incomplete, and (e) governance should ensure both human and ecosystem well-being and equity. From an operational perspective, the *FAO Approach* emphasizes: (i) the attaining of high long-term yields, (ii) avoiding unacceptable depletion of harvested stocks, (iii) allowing recovery of overfished stocks, (iv) reducing or eliminating by-catch and the risk of depleting by-catch species, (v) maintaining food-web function, including ensuring prey availability for dependent species, particularly in protecting endangered species, and (iv) protecting habitats and biodiversity.
11. Paragraph 30(c) of the JPOI encourage States and regional organizations to apply by 2010, the ecosystem approach, noting the Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem and decision V/6 of the Conference of Parties to the Convention on Biological Diversity.



The 1978 NAFO Convention

12. The 1978 NAFO Convention does not explicitly address the ‘ecosystem approach’ to fisheries. However, Article 6 of the Convention mandates the Scientific Council to ‘compile, disseminate, study, appraise and exchange scientific information and views relating to the fisheries of the Convention Area, including *environmental and ecological factors* affecting these fisheries...’ (emphasis added). The express requirement to include ‘environmental and ecological factors’ affecting fisheries demonstrates a recognition of the importance of taking ecosystems considerations in the conservation and management of target species, long before the ecosystem approach gained the wide acceptance it enjoys today.

The 2007 NAFO Amended Convention

13. The preamble of the Amended Convention speaks of a commitment to apply an ecosystem approach to fisheries management that includes safeguarding the marine environment, conserving its marine biodiversity, minimizing the risk of long term or irreversible adverse effects of fishing activities, and taking account of the relationship between all components of the ecosystem.
14. Article II, which defines the objective of the Convention highlights the need to safeguard the marine ecosystem as an integral component of the overall objective. It provides that, ‘The objective of this Convention is to ensure the long term conservation and sustainable use of the fishery resources in the Convention Area and, in so doing, to safeguard the marine ecosystems in which these resources are found.’ Contracting Parties are required to take due account of the impact of fishing activities on other species and marine ecosystems and in doing so, adopt measures to minimize harmful impact on living resources and marine ecosystems; take due account of the need to preserve marine biological diversity; and, take due account of the need to minimize pollution and waste originating from fishing vessels as well as minimize discards, catch by lost or abandoned gear, catch of species not subject to a directed fishery and impacts on associated or dependent species, in particular endangered species (Article III).
15. The ecosystem approach is also expressly provided for in the functions of the Commission. Article VI(6)(c) provides that the Commission shall, in collaboration with the Scientific Council, assess the impact of fishing activities and other human activities on living resources and their ecosystems. The term ‘living resources’ has been given wide meaning. It is defined in Article 1 to mean all living components of the marine ecosystems. The Commission is also given discretionary power to refer to the Scientific Council any question pertaining to the scientific basis for the decisions it may need to take concerning fishery resources, the impact of fishing activities on living resources, and the safeguarding of the marine ecosystem (Article VI(7)). The Commission is further empowered to adopt conservation and management measures to minimize the impact of fishing activities on living resources and their ecosystems within the Regulatory Area (Article VI(8)(b)). The ecosystem approach also features prominently in the functions of the Scientific Council, which are dealt with in Article VII. It provides, in essentially the same language as the 1978 Convention, that the Scientific Council is to, *inter alia*, study and appraise the current and future status of fishery resources including environmental and ecological factors affecting them (Article VII(8)). The Council is also mandated to provide scientific advice in response to any question referred to it by the Commission or a coastal State pertaining to the scientific basis for the conservation and management of fishery resources and their ecosystems (Article VII(10)).
16. The commitments reflected in 2007 NAFO Amended Convention (section 3.2.1) are similar to the various considerations outlined in the *FAO Code of Conduct* and the 2003 *FAO Ecosystem Approach to Fisheries*.
17. The 2007 *Amended NAFO Convention* focuses on the need to minimize pollution and waste originating from fishing vessels. It also emphasizes the need to minimize: (a) discards, (b) catch by lost or abandoned gear, (c) catch of species not subject to directed fishing, and (d) fishery impacts on associated or dependent species (particularly endangered species).



Performance Review Panel Assessment and Recommendations:

1. **NAFO has incorporated the ecosystem approach in the 2007 NAFO Amended Convention. The value of the ecosystem approach is reflected in the Preamble and commitments to the ecosystem approach are also provided for in the guiding principles, objectives and duties of the Commission and Scientific Council.**
2. **Contracting Parties are obliged to take account of the impact of fishing on non-target species and the marine ecosystem; the need to protect marine biodiversity; the adoption of measures to minimize the harmful impact of fishing on living marine resources and ecosystems; the need to minimize pollution and waste originating from fishing vessels as well as minimize discards, catch by lost or abandoned gear, catch of species not subject to a directed fishery and impacts on associated or dependent species.**
3. **NAFO is to be commended for incorporating the ecosystem approach to fisheries in its 2007 Amended Convention.**

3.2.2. Data collection and sharing

18. Long-term conservation and sustainable use of fisheries resources require the adoption of conservation and management measures based on a good understanding of the state of the fish stocks and marine ecosystems of which they are part. The conduct of marine scientific research, the collection and sharing of reliable and timely statistical, biological, ecological and environmental data and information regarding fishing activities and the impact of fishing and other activities on marine ecosystems are therefore indispensable for effective fisheries management. Article 61(5) of UNCLOS obliges States to collect and share data with respect to areas under national jurisdiction, in the following terms: ‘Available scientific information, catch and fishing effort statistics, and other data relevant to the conservation of fish stocks shall be contributed and exchanged on a regular basis through competent international organizations, whether sub-regional, regional or global, where appropriate and with participation by all States concerned...’. Article 119(2) provides for the same obligation of States on the high seas using essentially the same language as Article 61(5).
19. The UNFSA elaborates on the obligation laid down in UNCLOS regarding the collection and sharing of data. Article 10 provides that States, in cooperating through RFMOs, are to ‘agree on standards for collection, reporting, verification and exchange of data...’ (para. (e)), and to ‘compile and disseminate accurate and complete statistical data, as described in Annex I, to ensure that the best scientific evidence is available, while maintaining confidentiality where appropriate’ (para. (f)). States are also obliged to ensure that their vessels provide necessary information in order to fulfill their obligations under the Agreement (Article 14(1)). To that end, States are required to, in accordance with Annex I to the UNFSA:
 - Collect and exchange scientific, technical and statistical data with respect to fisheries for straddling and highly migratory fish stocks;
 - Ensure that data are collected in sufficient detail to facilitate effective stock assessment and are provided in a timely manner to fulfill the requirements of RFMOs; and
 - Take appropriate measures to verify the accuracy of such data.
20. Annex I to UNFSA sets out in detail the standard requirements for the collection and sharing of data, which include catch and fishing effort statistics and other fishery-related information, such as vessel-related and other data for standardizing fishing effort, from fisheries for straddling and highly migratory fish stocks on the high seas as well as in areas under national jurisdiction.



21. Furthermore, Article 14 (2) obliges States to cooperate, either directly or through RFMOs: to agree on the specification of data and the format in which they are to be provided to such RFMOs, and to develop and share analytical techniques and stock assessment methodologies to improve measures for the conservation and management of straddling and highly migratory stocks.
22. Finally Article 7.4 of the Code of Conduct contains a set of guidelines regarding data gathering and management advice. States are encouraged to compile scientific data relating to fish stocks covered by RFMOs in an internationally agreed format and provide them in a timely manner to the RFMOs.

1978 NAFO Convention

23. Both the original and Amended NAFO Conventions speak to the issue of data and scientific information. The Scientific Council, an advisory body, has primary responsibility for matters relating to data, scientific information and the provision of scientific advice to the Fisheries Commission and Contracting Parties for decision-making. According to Article VI of 1978 NAFO Convention, the Scientific Council provides a forum for consultation and cooperation among the Contracting Parties on the study, appraisal and exchange of scientific information and views relating to the fisheries in the Convention Area, including environmental and ecological factors affecting these fisheries. It also encourages and promotes cooperation among the Contracting Parties in scientific research designed to fill gaps in knowledge pertaining to these matters.
24. The Scientific Council is also responsible for compiling and maintaining statistics and records pertaining to fisheries in the Convention Area, including environmental and ecological factors affecting these fisheries. It is further responsible for publishing or disseminating reports, information and materials pertaining to these fisheries and related environmental and ecological factors (Article VI).
25. The NAFO Fisheries Commission has the power to refer any question to the Scientific Council pertaining to the scientific basis for the management and conservation of fishery resources within the Regulatory Area, and must specify terms of reference for the consideration of that question (Article XI (8)). In considering proposals for conservation and management measures, the Fisheries Commission is only required to '*take into account*' any relevant information or advice provided to it by the Scientific Council (emphasis added).
26. The Contracting Parties, for their part, are required to furnish the Scientific Council with any available statistical and scientific information requested by the Council (Article VI (3)).

2007 NAFO Amended Convention

27. The Amended Convention provides that Contracting Parties shall '*adopt measures based on the best scientific advice available to ensure that fishery resources are maintained at or restored to levels capable of producing maximum sustainable yield*' (Article III(b)); and '*ensure that complete and accurate data concerning fishing activities within the Convention Area are collected and shared among them in a timely manner*' (Article III(g)). The Convention goes on to elaborate on the specific duties and responsibilities of the Commission, Scientific Council and Contracting Parties in respect of data and scientific information.
28. Article VI (6) of the Amended Convention strengthens and elaborates on the role of the Commission and Scientific Council regarding data and the provision of scientific advice. It mandates the Commission to collaborate with the Scientific Council to, inter alia: regularly review the status of fish stocks; collect, analyze and disseminate relevant information; assess the impact of fishing activities and other human activities on living resources and their ecosystems; and develop guidelines for the conduct of fishing activities for scientific purposes, as well as for the collection, submission, verification, access to and use of data. The Commission is also mandated to adopt, in relation to the Regulatory Area, measures for the conduct of fishing for scientific purposes, as well as for the collection, submission, verification, access to and use of data.



29. With respect to the Scientific Council, the Amended Convention of 2007 retains much of the language of the 1978 Convention with a few important additions, which in effect broadens the scope of its functions to more fully take into account ecosystems considerations. The Council is now regarded as a forum for consultation and cooperation among the Contracting Parties to study and exchange scientific information and views not only on fishing activities but equally on the ecosystems in which they occur (Article VII).
30. The duties of Contracting Parties with respect to the collection and exchange of data are elaborated in NAFO Convention Article X (d) – (f). Each Party is required, *inter alia*, to: collect and exchange scientific, technical, and statistical data and knowledge pertaining to living resources and their ecosystems in the Convention Area including complete and detailed information on commercial catches and fishing effort and take appropriate actions to verify the accuracy of such data; perform biological sampling on commercial catches; and make such information as may be required by the Commission or Scientific Council available in a timely manner.

NAFO Rules of Procedure

31. The Rules of Procedure, which are based on the 1978 NAFO Convention, have given the Standing Committee on Fisheries Science (STACFIS) the responsibility to assess the status of fish stocks and the effects on fish stocks of fishing strategies and management, and evaluate new methods for fish stock assessment (Rule 5.1(a)).
32. According to Rule 5.1(b), the Standing Committee on Research Coordination (STACREC) has the mandate to: develop and recommend to the Scientific Council policies and procedures for the collection, compilation, and dissemination of statistical and sampling information on the living resources and fisheries; coordinate the compilation and maintenance of statistics and records and their dissemination, including liaison with coastal States; coordinate the planning and execution of international cooperative research in cooperation with coastal States; encourage and promote cooperation among the Contracting Parties in scientific research designed to fill gaps in knowledge pertaining to fisheries matters identified by the Scientific Council; and review and evaluate data and information and advise the Scientific Council on advances in knowledge of biology relevant to the Convention Area.

Performance Review Panel Assessment and Recommendations:

1. **Whereas the obligations of Contracting Parties regarding data collection and sharing in the 1978 NAFO Convention fall short when measured against UNFSA requirements, the necessary principles, procedures and standards are provided for in the 2007 NAFO Amended Convention. In the latter, the basic Contracting Party obligations have been clarified, strengthened and are in line with the standards established by the UNFSA and FAO Code of Conduct.**
2. **The Commission and the Scientific Council obligations have likewise been clarified and strengthened. Whereas the 1978 NAFO Convention requires the Commission to do no more than take into account the scientific advice provided by the Council, the 2007 Amended NAFO Convention, taken as a whole, appears to impose a stronger obligation on the Commission to use the advice provided in adopting conservation and management measures. It is noteworthy that Contracting Parties are required to collect and exchange scientific and statistical data and information pertaining not only to target species, but more broadly to ‘the living resources and their ecosystems in the Convention Area.’ This requirement, taken together with a general commitment to the precautionary approach, the ecosystem approach and the preservation of marine biodiversity, implies a strong commitment to**



monitoring the impact of fishing on non-target fish species and other marine organisms.

- 3. Finally, the Scientific Council is also required to ‘study and appraise current and future status of fishery resources including *environmental and ecological factors affecting them*’ (emphasis added). This broader commitment is consistent with the growing awareness that conservation and management measures must be informed by an understanding of wider environmental and ecological issues, such as, climate change and climate variability.**

3.2.3. Precautionary Approach

33. The precautionary principle/approach to fisheries has been receiving considerable attention in recent years as States and non-State actors respond to concerns about the condition of world fisheries and seek ways of strengthening the governance framework to improve conservation and resource sustainability. While there is still considerable academic debate regarding implementation of the precautionary approach, it nevertheless being applied widely to fisheries by States and RFMOs over the last two decades (Russell & VanderZwaag, 2010).
34. UNCLOS has no specific provision regarding the precautionary approach to fisheries. The concept gained wide acceptance in marine resource governance following its articulation in Principle 15 of the Rio Declaration of 1992²⁵ and Agenda 21²⁶. The precautionary approach has since been incorporated in several binding and non-binding instruments including the UNFSA and the Code of Conduct. The Code of Conduct and the UNFSA address the precautionary approach using nearly identical language. Article 7.5 of the Code and Article 6 (1) of the UNFSA require States to apply the precautionary approach widely to conservation, management and exploitation of all aquatic resources, in order to protect them and preserve the aquatic environment.
35. The UNFSA develops the precautionary approach as one of the general principles for the conservation and management of straddling and highly migratory fish stocks (Arts. 5 (c), 6 and Annex II). Article 6 and Annex II contain detailed provisions regarding the application of the precautionary principle, including the following:
- States shall be more cautious when information is uncertain, unreliable or inadequate; the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation measures;
 - States shall improve decision-making for conservation and management by obtaining and sharing the best scientific information available and implementing improved techniques for dealing with risk and uncertainty;
 - States shall determine stock-specific target and limit reference points and the action to be taken if they are exceeded;
 - For new or exploratory fisheries, States shall adopt cautious measures until there are sufficient data to allow the identification of measures for the long-term sustainability and gradual development of fisheries.

1978 NAFO Convention

36. The 1978 NAFO Convention does not provide for the precautionary approach.

2007 NAFO Amended Convention

²⁵ Rio Declaration on Environment and Development, 14 June 1992.

²⁶ Para 17.1 of Agenda 21 provides that the protection and sustainable development of marine and coastal environment and its resources require new approaches that are ‘integrated in content and are precautionary and anticipatory in ambit’. See also Paragraphs 17.21, 17.97 and 19.49.



37. The 2007 NAFO Amended Convention introduces the precautionary approach by noting in its Preamble that effective conservation and management of fishery resources should be based on the best available scientific advice and the precautionary approach. As a general principle, in giving effect to the objective of the Convention, Contracting Parties are required to adopt measures based on the best scientific advice available to ensure that fishery resources are maintained at or restored to levels capable of producing maximum sustainable yield (Article 3 (b)), and to apply the precautionary approach in accordance with Article 6 of the UNFSA (Article 3 (c)).

Performance Review Panel Assessment and Recommendations:

- 1. Understandably, the 1978 NAFO Convention makes no reference to the precautionary principle or approach. The amended NAFO Convention (2007) expressly incorporates the application of the precautionary approach by NAFO, in accordance with Article 6 of the UNFSA.**
- 2. It is noteworthy that although the 1978 Convention pre-dates the emergence of the precautionary approach in fisheries, NAFO initiated the development of its precautionary approach framework from as early as 1997 ([SCS Doc. 97/12](#) (NAFO, 1997d)). This was further elaborated and finalized in its current form in 2004 ([FC Doc. 04/18](#) (NAFO, 2004f)).**
- 3. NAFO is to be commended for its actions to incorporate and apply the precautionary approach in its work even prior to its incorporation in its 2007 Amended Convention.**

3.2.4. Conservation and sustainable use of fisheries and of marine biodiversity

38. The primary objective of fisheries management is long term conservation and optimal sustainable utilization of the fishery resources. UNCLOS provides for the rights and duties of States regarding sustainable use and conservation of fisheries within the EEZ and on the high seas. Within the EEZ, the coastal State has a duty to develop conservation and management measures taking into account the best scientific evidence available (Article 61(2)). The measures so developed must ensure that the maintenance of the living resources is not endangered by over-exploitation, and that 'stocks are maintained at or restored to levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors' (Article 61(3)). The coastal State must also 'take into consideration the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened' (Article 61(4)).
39. The coastal State has a duty to promote the objective of 'optimum utilization' of the living marine resources without prejudice to the conservation duties set out in Article 61 (Article 62(1)). It is required to 'determine its capacity to harvest the living resources' within the EEZ. Where it does not have the capacity to harvest the entire allowable catch, it must give other States access to the surplus, through agreements or other arrangements (Article 62(2)). With regard to shared, straddling and highly migratory fish stocks UNCLOS imposes a duty on States to cooperate either directly, or through sub-regional or regional organizations, in order to achieve the conservation and development of these stocks. For shared stocks, States are to seek to agree upon measures necessary to coordinate and ensure the conservation and development of such stocks (Article 63(1)). For straddling stocks, the coastal State and 'the States fishing for such stocks in adjacent area' are exhorted to seek to agree upon the measures necessary for the conservation of these stocks in the adjacent area'(Article 63(2)). Although coastal States and other fishing States are called upon to cooperate in good faith, they are not required to reach an agreement. Article 64 deals with highly migratory species using slightly stronger language. Here the coastal State and other fishing States are required to cooperate, through



- appropriate international organizations, with the objective of ensuring the conservation and optimum utilization of these stocks both within and beyond the EEZ.
40. Articles 117 and 119 provide that States are to cooperate in taking measures necessary for the conservation and management of the marine living resources of the high seas, whether through direct cooperation or through regional fisheries organizations such as RFMOs. The conservation obligations are similar to those mentioned above concerning the EEZ and straddling and highly migratory species. Fishing States are required to adopt conservation measures for fishery resources in respect of vessels flying their flag on the basis of the best scientific evidence available to them and to co-operate with each other in the conservation and management of such resources (Article 117). In particular, States whose nationals exploit identical living resources, or different living resources in the same area, are required to enter into negotiations with a view to taking the measures necessary for the conservation of the living resources concerned. To this end they are required to co-operate, as appropriate and to establish sub-regional or regional fisheries organizations (Article 118). In areas within and beyond national jurisdiction, the conservation measures adopted must be aimed at maintaining or restoring populations of harvested species at levels which can produce the maximum sustainable yield, while taking into consideration relevant environmental and economic factors. States are also required to take into consideration the effects on associated or dependent species (Article 119). Article 119(3) establishes a duty to ensure that conservation measures and their implementation do not discriminate in form or in fact against the fishermen of any State.
 41. The UNFSA supplements the abovementioned provisions of UNCLOS by establishing a comprehensive regime aimed at achieving effective and compatible conservation and management measures, and optimum sustainable use of fisheries on the high seas and within areas under national jurisdiction. Article 5 sets out governing principles which include: ensuring long-term sustainability; promoting optimum utilization of stocks; using the best available scientific evidence in decision-making; applying the precautionary approach and the ecosystem approach; minimizing pollution, waste, discards, catch by lost or abandoned gear, catch of non-target species, and impacts on associated or dependent species, in particular endangered species; and protecting biodiversity, among others.
 42. The precautionary approach is developed in Article 6 and Annex II, while Article 7 sets out criteria to ensure compatibility between measures adopted on the high seas and those adopted in the EEZ in respect of straddling fish stocks and highly migratory fish stocks. The precautionary approach and the general principles set out in Article 5 are given application in areas under national jurisdiction as well as on the high seas by virtue of Article 3. Detailed provisions for international cooperation are provided for, and RFMOs or arrangements are identified as mechanisms through which States can discharge their obligations to conserve and use straddling stocks and highly migratory stocks in a sustainable manner (Article 8(1)).

1978 NAFO Convention

43. The preamble to the 1978 Convention speaks of the desire of Contracting Parties to promote the conservation and optimum utilization of the fishery resources of the Northwest Atlantic area. According to Article II (1), the Organization was established 'to *contribute* through consultation and cooperation to the optimum utilization, rational management and conservation of the fishery resources of the Convention Area' [emphasis added].
44. The NAFO Fisheries Commission is given responsibility for managing and conserving the fishery resources of the Regulatory Area. It is also empowered to adopt conservation and management measures to achieve optimum utilization of the fishery resources, taking into account relevant information or advice provided by the Scientific Council (Article XI (1) and (2)). The Commission seeks to ensure consistency between any proposal that applies to stocks occurring both within the Regulatory Area and within any area under coastal State jurisdiction. Such consideration also includes any potential effect(s) arising from species interrelationships for stocks occurring within an area



falling under coastal State jurisdiction as well as and measures taken by the coastal State for the management and conservation of stocks within the area under its jurisdiction (Article XI (3)).

45. The Scientific Council provides a forum for consultation and cooperation on the study, appraisal and exchange of scientific information among the Contracting Parties. It is also mandated to answer any questions pertaining to the scientific basis for the management and conservation of the fisheries in the Convention Area, including environmental and ecological factors affecting these fisheries (Articles VI to VIII).

2007 NAFO Amended Convention

46. The commitment to the conservation and sustainable use of marine living resources has been strengthened in the 2007 Amended Convention by incorporating most of the modern principles and standards articulated in recent international instruments that are aimed at addressing fisheries and protection of marine biodiversity.

47. The Amended Convention's main objective is to *ensure* the long-term conservation and sustainable use of the fishery resources in the Convention Area [emphasis added]. In so doing, it endeavors to safeguard the marine ecosystems in which these resources are found (Article II). It is noteworthy that the concept of optimum utilization is not mentioned. This objective reflects that of the UNFSA and other recent international instruments as it expressly identifies the critical desired outcomes of long-term conservation, sustainable use and wider ecosystem protection. This may be contrasted with the arguable weaker commitment to conservation and sustainable use found in the 1978 Convention where the objective is '*to contribute*' to optimum utilization, rational management and conservation of the resources (emphasis added) (Russell & VanderZwaag, 2010). Article III of the Amended Convention outlines a number of general principles including:

- Promoting the optimum utilization and long-term sustainability of fishery resources;
- Adopting measures based on the best scientific advice available to ensure that fishery resources are maintained at or restored to levels capable of producing maximum sustainable yield;
- Applying the precautionary approach in accordance with Article 6 of the 1995 Agreement;
- Taking due account of the impact of fishing activities on other species and marine ecosystems and in so doing, adopting measures to minimize harmful impact on living resources and marine ecosystems;
- Taking due account of the need to preserve marine biological diversity;
- Preventing or eliminating overfishing and excess fishing capacity, and ensure that levels of fishing effort do not exceed those commensurate with the sustainable use of the fishery resources;
- Taking due account of the need to minimize pollution and waste originating from fishing vessels as well as to minimize discards, catch by lost or abandoned gear, catch of species not subject to a directed fishery and impacts on associated or dependent species, in particular endangered species.

48. The duties of the Commission and Scientific Council have also been further developed concerning adoption of long-term conservation measures and promoting optimum sustainable use of the resources. Article VI (6) of the Amended Convention provides that the Commission, in collaboration with the Scientific Council, must regularly review the status of fish stocks and identify actions required for their conservation and management, and assess the impact of fishing activities and other human activities on living resources and their ecosystems. Furthermore, Article VI (8) mandates the Commission, in relation to the Regulatory Area, to adopt:

- Conservation and management measures to achieve the objective of this Convention;
- Conservation and management measures to minimize the impact of fishing activities on living resources and their ecosystems;



- Total allowable catches and/or levels of fishing effort and determine the nature and extent of participation in fishing;
- Measures for the conduct of fishing for scientific purposes;
- Measures for the collection, submission, verification, access to and use of data; and
- Measures to ensure adequate flag State performance.
- As noted above under Subsection 3.2.2, whereas the obligation under the 1978 Convention is to take into account scientific advice provided by the Scientific Council, the Amended Convention, read as a whole, imposes a stronger obligation on the Commission to use the scientific advice in adopting conservation and management measures.

Performance Review Panel Assessment and Recommendations:

- 1. The objective, principles and obligations in the Amended Convention dealing with the conservation and sustainable use of fisheries and the protection of marine biodiversity are broadly similar to those enunciated in the UNFSA and other recent binding and non-binding instruments. Under the 2007 Amended Convention NAFO is mandated to ensure long term conservation and sustainable use of the resources. The stronger and more precise language used in defining NAFO's objective signifies an intention to elevate the principles of conservation and sustainability. These principles and obligations seek to conserve and manage not only target species but also other species and the larger ecological processes and interactions that are deemed necessary to maintain the productivity and integrity of the entire ecosystem. NAFO has thus amended and developed its Convention by incorporating the modern principles and rules of fisheries governance in respect to conservation and sustainable use of fisheries resources.**

3.2.5. Compatibility of conservation and management measures

49. Fish stocks that migrate between, or occur in both, the EEZs of one or more coastal States and on the high seas pose particular problems for effective conservation and management. States have a legal duty not only to cooperate in adopting conservation and management measures for such stocks, but they must also ensure that the measures adopted are consistent and compatible within areas under national jurisdiction and on the high seas (Churchill & Lowe, 1999). This is necessary to avoid mismanagement arising from mismatch and gaps in the conservation and management regime applied to the stock/stocks by the coastal State and by other States on the high seas.
50. UNCLOS creates general rules of cooperation for the conservation and management of straddling fish stocks. Article 63(2) exhorts the coastal State and other States whose nationals fish for straddling stock or stocks of associated species occurring both within and beyond the exclusive economic zone to 'seek, either directly or through appropriate sub-regional or regional organizations, to agree upon the measures necessary for the conservation of these stocks in the area adjacent' to the EEZ. Article 116(b) provides that the freedom of fishing on the high seas is subject to the rights and duties as well as the interests of coastal States provided for, *inter alia*, in Article 63, paragraph 2, and Articles 64 to 67.
51. The UNFSA creates more specific rules of cooperation for straddling fish stocks. The concept of cooperation has been bolstered by the requirement of compatibility of measures for the conservation and management of straddling stocks in areas under national jurisdiction and on the high seas. Thus, while the UNFSA is concerned primarily about fish stocks on the high seas, according to Article 3, coastal States, in the exercise of their sovereign rights in areas under national jurisdiction, are required to apply, *mutatis mutandis*, the general principles of conservation and management enumerated in Article 5 of the Agreement.



52. Whereas Article 7 (1) repeats the provisions of Articles 63 (1) of UNCLOS mentioned above, Article 7(2) further develops and clarifies these provisions. There is a requirement that measures established for the high seas and those adopted for areas under national jurisdiction shall be compatible in order to ensure conservation and management of such stocks in their entirety, and to that end coastal States and high seas fishing States have a duty to cooperate for the purpose of achieving compatible measures in respect of such stocks. Article 7(2) then enumerates several factors to be taken into account by States in determining compatible measures. The intention is clearly to ensure that the management principles in UNFSA are applied in a consistent and harmonized manner both on the high seas and in areas under national jurisdiction to ensure the measures adopted are effective.

1978 NAFO Convention

53. Article I of the 1978 NAFO Convention defines the geographic area to which the Convention applies as the Convention Area, which includes:

‘the waters of the Northwest Atlantic Ocean north of 35°00' north latitude and west of a line extending due north from 35°00' north latitude and 42°00' west longitude to 59°00' north latitude, thence due west to 44°00' west longitude, and thence due north to the coast of Greenland, and the waters of the Gulf of St. Lawrence, Davis Strait and Baffin Bay south of 78°10' north latitude.’

54. The Convention Area therefore includes not only the high seas but also areas under the national jurisdiction of coastal States²⁷.
55. The NAFO Commission is responsible for management and conservation of the fishery resources within the Regulatory Area (Article I (2) and XI (1)), which is defined as that part of the Convention Area beyond any coastal State EEZ. Article XI (3) exhorts the Commission to ‘*seek to ensure consistency*’ between any proposal that applies to straddling stocks, or associated or dependent stocks, occurring within the Regulatory Area and in an area under the fisheries jurisdiction of a coastal State; and any measures or decisions taken by the coastal State for the management and conservation of that stock or group of stocks with respect to fishing activities conducted within the area under its fisheries jurisdiction [emphasis added]. In order to achieve the desired consistency, Article XI (3) also imposes obligations on each coastal State to keep the Commission informed of its measures and decisions, and on the appropriate coastal State and the Commission to promote the coordination of such proposals, measures and decisions. Each coastal State is further obliged to keep the Commission informed of its measures and decisions for the purpose of seeking to achieve the consistency being sought.

2007 NAFO Amended Convention

56. The Amended Convention retains the provisions of the 1978 Convention with only minor refinements. Article 11 of the former provides that the Commission shall *seek to ensure consistency* between (emphasis added):
- (i) any measure that applies to a stock or group of stocks found both within the Regulatory Area and within an area under national jurisdiction of a coastal State, or any measure that would have an effect through species interrelationships on a stock or group of stocks found in whole or in part within an area under national jurisdiction of a coastal State; and
 - (ii) any actions taken by a coastal State for the management and conservation of that stock or group of stocks with respect to fishing activities conducted within the area under its national jurisdiction.
57. Article 11 further provides that the Commission and the appropriate coastal State shall accordingly promote the coordination of their respective measures and actions, and each coastal State shall keep the Commission informed of its actions for the purpose of ensuring such consistency.

²⁷ There are four coastal States bordering the Convention Area: USA, Canada, France (in respect of St. Pierre et Miquelon), and Denmark (in respect of Faroe Islands and Greenland).



Performance Review Panel Assessment and Recommendations:

1. **While NAFO's Conventions contain provisions aimed at achieving consistency and compatibility of conservation and management measures adopted by coastal States and the Commission for straddling fish stocks, these provisions are neither as obligatory nor specific as the requirements of the UNFSA. In the first instance, the responsibility is placed on the Commission to *seek to ensure* consistency between the measures it adopts and the actions taken by the coastal States for stocks within the areas under the latter's jurisdiction. Secondly, the coastal State and the Commission are required to accordingly *promote the coordination* of their respective measures and actions (emphasis added). Thus the language used does not create an obligation on either the Commission or coastal State to ensure consistency in their measures.**
2. **NAFO should therefore consider adopting policy measures to bolster its commitment to ensuring the compatibility of measures adopted for the conservation and management of straddling stocks within the Convention Area. Consideration should also be given to clarifying the respective responsibilities of the coastal State and Commission in coordinating their respective measures and actions so as to ensure their compatibility.**

3.2.6. Allocation of fishing opportunities

58. States support and participate in the work of RFMOs in order to obtain sustainable economic and social benefits from the living marine resources being regulated. The question of how participatory rights, including the allocation of fishing opportunities, are determined is therefore a fundamental issue in any RFMO. Participatory rights, and especially the allocation of fishing opportunities, should be undertaken using agreed criteria and procedures that are fair, equitable and transparent to all concerned so as to ensure their satisfaction and compliance with the outcomes. Such consideration should include the conservation and management measures adopted, or to be adopted, by the RFMO (Lodge *et al.*, 2007).
59. The rules regarding allocation of fishing opportunities within RFMOs are provided for by Articles 10-11 of the UNFSA. Article 10 in laying down the functions of an RFMO, establishes the duty of States to agree on participatory rights such as allocation of allowable catch or levels of fishing effort (Article 10(b)) , and on means by which the fishing interests of new member of the organization will be accommodated (Article 10(i)). Article 11 provides guidance on the issues that should be taken into consideration by States in determining the nature and extent of participatory rights for new members of an RFMO. These include, *inter alia*,
 - the status of the fish stocks and existing level of fishing effort in the fishery;
 - the respective interests, fishing patterns and fishing practice of new and existing members or participants;
 - the respective contributions of new and existing members or participants to conservation and management of the stocks, to the collection and provision of accurate data and to the conduct of scientific research on the stocks;
 - the needs of coastal fishing communities which are dependent mainly on fishing for the stocks;
 - the needs of coastal States whose economies are overwhelmingly dependent on the exploitation of marine living resources; and
 - the interests of developing States from the region in whose areas of national jurisdiction the stocks also occur.



60. The JPOI also encourages RFMOs to give due consideration to the rights, duties and interests of coastal States and the special requirements of developing States when addressing the allocation of shares of fishery resources for straddling stocks and highly migratory fish stocks (Para. 31(e)).

1978 NAFO Convention

61. The 1978 Convention outlines general and specific provisions on the allocation of fishing opportunities. Article XI (2) provides that the Commission may adopt proposals for joint action to achieve the optimum utilization of fishery resources in the Regulatory Area. Article XI (4) further provides that proposals adopted for the allocation of catches shall take into account the interests of *Fisheries Commission members*²⁸ whose vessels have traditionally fished within the Regulatory Area (emphasis added). In allocating catches from the Grand Bank and Flemish Cap, the Commission is also required to give special consideration to the Contracting Party whose coastal communities are primarily dependent on fishing for stocks related to these fishing grounds and which has undertaken extensive efforts to ensure conservation of such stocks through international action, in particular by providing surveillance and inspection of international fisheries on the grounds under an international scheme of joint enforcement.

2007 NAFO Amended Convention

62. Article VI (12) of the Amended Convention largely repeats the above provisions with two materially significant modifications that broaden their scope. It provides that measures adopted by the Commission for the allocation of fishing opportunities in the Regulatory Area shall take into account the interests of *Contracting Parties* whose vessels have traditionally fished within the Area as well as the interests of relevant coastal States. Again, in allocating fishing opportunities from the Grand Bank and Flemish Cap, the Commission shall give special consideration to the Contracting Party whose coastal communities are primarily dependent on fishing activities for stocks related on these fishing grounds and which have undertaken extensive efforts to ensure the conservation of such stocks through international action, in particular by providing surveillance and inspection of international fishing activities on these banks under an international scheme of joint enforcement. Under the Amended Convention, the Commission is required to take into account the interests of all Contracting Parties whose vessels have traditionally fished in the Area. It is also now expressly required to take into account the interests of relevant coastal States. The 1978 Convention does not expressly require the Commission to take into account the interests of relevant coastal States in allocating fishing opportunities in the Regulatory Area. It is also important to note that NAFO established a Working Group on Allocation of Fishing Rights to Contracting Parties of NAFO and Chartering of Vessel between Contracting Parties in September 1997 ([Meet. Proc. 1997, Section IV](#) (NAFO, 1998a)). The Working Group had as its objective the development of options whose terms were explicit and predictable for allocation to Contracting Parties from current fisheries with NAFO TACs, fisheries previously not subject to NAFO TACs, new fisheries, closed fisheries being reopened, and fisheries for which fishing rights are or will be allocated in terms other than quotas (e.g. effort limits) ([NAFO, 2002a, Section VIII, Annex II](#)). Although the Working Group has met on five occasions between March 1998 and April 2003, it has made no recommendations, to date, to the Fisheries Commission ([Meet. Proc., 2002-03](#), Section IV (NAFO, 2003b)).

Performance Review Panel Assessment and Recommendations:

1. The provisions in NAFO Conventions on the allocation of fishing opportunities cover most of the criteria set out in Article 11 of the UNFSA, with the exception of

²⁸ It is important to note that a NAFO Contracting Party may not necessarily be a member of the Fisheries Commission. According to Art XIII (1) of the 1978 NAFO Convention, Membership of the Commission is reviewed and determined by the General Council at its annual meeting and consists of: each Contracting Party which participates in the fisheries of the Regulatory Area; and each Contracting Party which has provided evidence satisfactory to the General Council that it expects to participate in the fisheries of the Regulatory Area during the year of that annual meeting or during the following calendar year.



the treatment of new members of the organization and other developing countries that may have a real interest in the fisheries.

- 2. Agreement on participatory rights, such as the allocation of fishing opportunities, is fundamentally important to the stability and effectiveness of any RFMO. It would therefore be preferable to agree, legally-binding rules for the allocation of fishing opportunities. Such rules should also be fair and transparent. However, the Panel recognizes the considerable challenge that represents and also the efforts NAFO has made to address such issues through two separate Working Groups on allocation criteria. The Panel also acknowledges that, to date, no RFMO has been able to agree on specific rules to deal with the fishing opportunity allocation issue.**

3.2.7. Flag State duties

63. Long-term conservation and sustainable use of high seas fishery resources are possible only if applicable, international conservation and management measures are complied with by fishing vessels operating on the high seas. The failure of some flag States to adequately control fishing vessels entitled to fly their flags on the high seas has been a significant challenge for some time. And the consequent failure of such vessels to comply with applicable international conservation and management measures has effectively undermined such measures. The duties of flag States have thus become a focus of attention internationally (e.g. by the United Nations General Assembly, FAO and COFI). This has led to substantial development over the past two decades of the international legal framework aimed at improving fishing vessel compliance with conservation and management measures.
64. Customary law and UNCLOS provide that a fishing vessel operating on the high seas is subject to the exclusive jurisdiction of its flag State except in special cases expressly provided for in international treaties or in UNCLOS itself (Article 92(1)). A third State may board, inspect or arrest a fishing vessel not flying its flag only if this is expressly allowed in a treaty to which they are parties. Article 94 of UNCLOS lays down the general duty of the flag State to effectively exercise jurisdiction and control over ships flying its flag. More specifically, the flag State must maintain a register of its fishing vessels, and assume jurisdiction over such vessels and their masters, officers and crew. Articles 117 to 119 set out general duties of flag States regarding cooperation and conservation of the marine living resources, while more specific duties concerning pollution from vessels are in Article 217. The general duties in UNCLOS have been supplemented by more detailed provisions in the Compliance Agreement and the UNFSA.
65. According to Article 17 of the UNFSA, flag States that are not members of an RFMO must not authorize their vessels to fish for stocks subject to conservation and management measures established by the RFMO. Article 18 contains a detailed list of the duties of the flag State. The flag State is required to take measures to ensure that its vessels comply with regional conservation and management measures, and that they do not engage in any activity which undermines the effectiveness of such measures. The flag State is also required to authorize the use of its vessels for fishing on the high seas 'only where it is able to exercise effectively its responsibilities' under UNCLOS and UNFSA. This is followed by a number of specific measures that the flag State is required to take including, *inter alia*: control of vessels by means of fishing licenses, authorizations or permits; establishment of a national record of fishing vessels authorized to fish on the high seas; requirements for marking of fishing vessels and fishing gear; monitoring, control and surveillance of vessels and their operations; and regulation of fishing activities to ensure compliance with regional or global measures.
66. Article 19 deals with compliance and enforcement. It requires that flag States ensure compliance by its vessels with regional conservation and management measures. If non-compliance is suspected the flag State must fully investigate the matter immediately and institute legal proceedings if there is



sufficient evidence of an alleged violation. Where violations are proved, States must impose sanctions that are adequate in severity to be effective in securing compliance and to discourage violations and deprive offenders of the benefits accruing from their illegal activities. States are further required by Article 20 to cooperate, directly or through RFMOs, to ensure compliance and enforcement of regional conservation measures.

67. Flag State duties similar to those established under the UNSFA are repeated in the Compliance Agreement and Article 8 of the Code of Conduct.

1978 NAFO Convention

68. The 1978 Convention does not include specific provisions to deal with flag State duties commensurate with the principles and standards mentioned above. However, there are provisions which require NAFO Contracting Parties, as flag States, to ensure compliance by their nationals with measures adopted by the Organization. In particular, Article XVII establishes a general duty for Contracting Parties as flag States to “take such action, including imposition of adequate sanction for violations as may be necessary to make effective the provisions of the Convention and to implement” any conservation and management measures adopted. Contracting Parties are also required to “maintain in force and implement” a scheme of joint international enforcement, which must include provision for reciprocal rights of boarding and inspection by the Contracting Parties and for flag State prosecution and sanctions on the basis of evidence resulting from such boarding and inspections (Article XVIII). Finally, Parties are empowered to take steps to deal with non-Contracting Parties (NCP) whose vessels undermine measures adopted by NAFO (Article XIX).

2007 NAFO Amended Convention

69. Article XI of the Amended Convention sets out specific duties of the flag State Contracting Party. To a large extent these reflect the flag State duties set out in the UNFSA. According to Article XI (I), each NAFO Contracting Party is required to ensure that fishing vessels entitled to fly its flag:
- comply with the provisions of the Amended Convention and with the conservation and management measures adopted by the Commission and do not engage in any activity that undermines the effectiveness of such measures;
 - do not conduct unauthorized fishing activities within areas under national jurisdiction in the Convention Area; and
 - do not engage in fishing activities in the Regulatory Area unless they have been authorized to do so by that Contracting Party concerned.
70. In addition, each Contracting Party must: (a) refrain from authorizing fishing vessels entitled to fly its flag to engage in fishing activities in the Regulatory Area, unless the Party is able to exercise effectively its responsibilities in respect of such vessels; (b) maintain a record of fishing vessels entitled to fly its flag that it has authorized to fish in the Regulatory Area, including ensuring that such information as may be specified by the Commission is recorded therein; (c) exchange any information contained in the record referred to in (b) above; (d) in accordance with procedures adopted by the Commission, investigate immediately and fully, and report promptly on actions it has taken in response to an alleged infringement by a vessel entitled to fly its flag; and (e) in respect of an alleged infringement ensure that appropriate enforcement actions are taken without delay and that administrative or judicial proceedings are initiated in accordance with the Contracting Party’s laws (Article XI (2)). Finally, Article XI(3) clearly provides that enforcement actions taken or sanctions applied must be adequate in severity to be effective in securing compliance, discouraging further infringements and depriving offenders of the benefits accruing from their illegal activities.



Performance Review Panel Assessment and Recommendations:

1. **Through the 2007 Amended Convention, NAFO has incorporated the general and specific flag State duties set out in UNCLOS, the Compliance Agreement, UNFSA and other international instruments into its Basic Texts.**
2. **NAFO is to be commended for specifically incorporating the duties of flag States into the Amended Convention in a manner consistent with current international fisheries provisions.**
3. **However, the Panel also was of the view that if sanctions were to result in change of behavior, they needed to be sufficiently severe and punitive to be effective.**

3.2.8. Port state duties

71. Illegal, Unreported and Unregulated (IUU) Fishing²⁹ is a major problem facing high seas fisheries globally. For this reason in recent times significant attention has been focused on strengthening port State measures in order to combat IUU fishing and achieve improved compliance with international and regional conservation and management measures by fishing vessels operating on the high seas. In this respect, coordinated port State action can be a very effective mechanism for combating IUU fishing. Port States may, for example, coordinate the implementation of port measures designed to prevent IUU catches from entering international trade, and thereby diminish or eliminate the economic incentives for engaging in IUU-related activities.
72. UNCLOS does not address the issue of port State control of fishing vessels operating on the high seas. The subject matter is, however, addressed by the Compliance Agreement, UNFSA, the recent FAO Port State Agreement and other non-binding international instruments.
73. Article V of the Compliance Agreement addresses the issue of port State control. Where a fishing vessel is voluntarily in its port and it has reasonable grounds for believing that the vessel has been used for an activity that undermines the effectiveness of international conservation and management measures, the port State is obliged to promptly notify the flag State. The Parties may then make arrangements for the port State to undertake such investigatory measures as may be considered necessary to determine whether the fishing vessel has in fact violated the Compliance Agreement (Article V(2)).
74. Port State control is further developed in the UNFSA where States have wider discretion in exercising jurisdiction over fishing vessels using their ports. Article 23 of UNFSA provides that a port State has 'the right and the duty' to take non-discriminatory measures to promote the effectiveness of sub-regional, regional and global conservation and management measures (Article 23(1)). It may, *inter alia*, inspect documents, fishing gear and catch on board fishing vessels when they are voluntarily in its ports or at its offshore terminals (Article 23(2)). States may also prohibit landings and transshipments where it has been established that the catch has been taken in a manner which undermines the effectiveness of regional or global conservation and management measures on the high seas.
75. The Port State Agreement is a global treaty that focuses specifically on combating IUU fishing by establishing minimum international standards and procedures for port States, individually and through RFMOs, to exercise greater control over fishing vessels entering and using their ports. It requires the port State to, *inter alia*: identify and publicize designate ports of landing for foreign vessels; prohibit entry into its port if it reasonably believes a vessel is involved in IUU fishing; also prohibit such

²⁹ IUU Fishing means the activities described in the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing adopted by the Food and Agriculture Organization of the United Nations on 2 March 2001.



vessels from landing, transshipping or accessing services in port; carry out inspections of foreign vessels; share and publicize information on vessels involved in IUU fishing and actions taken; and adopt enforcement measures, such as vessel detention or seizure of catch and gear.

1978 NAFO Convention

76. The 1978 NAFO Convention does not contain any specific provisions regarding port State duties.

2007 NAFO Amended Convention

77. Article XII of the Amended Convention establishes the general duty of a port State Contracting Party to implement measures (adopted by the Commission) as these relate to the inspection of fishing vessels by Contracting Parties in their in ports.

Performance Review Panel Assessment and Recommendations:

1. **The FAO Port States Measures Agreement was not finalized until 2009 and has not yet entered into force, whereas the 2007 NAFO Amended Convention was finalized in 2007. There are significant differences between international fisheries law concerning the duties of Port States and the provisions of the Basic Texts of NAFO. Whilst the 1978 NAFO Convention and the 2007 Amended Convention do not reflect the port States provisions of the Compliance Agreement, UNFSA or the more recent Port State Agreement, a range of relevant Port State Measures have been included in the NAFO Conservation and Enforcement Measures (NCEM)³⁰.**
2. **Given the important role of RFMOs generally, and NAFO in particular, in ensuring the effective implementation of relevant international provisions of instruments such as UNFSA and the Port State Agreement, and bearing in mind the recognized need for a harmonized global system of port State controls to effectively combat IUU fishing, it is recommended that NAFO should continue to incorporate relevant Port State Measures, in particular those of the FAO Port States Measures Agreement, into its monitoring, control and surveillance (MCS) provisions.**
3. **Furthermore, NAFO Contracting Parties are urged to become parties to the FAO Port States Measures Agreement³¹.**

3.2.9. Monitoring, control and surveillance

78. One of the most challenging aspects of fisheries governance is to secure compliance with conservation and management measures both within areas under national jurisdiction and on the high seas. Despite substantial legislative and regulatory measures to manage, conserve and protect fisheries and marine ecosystems, non-compliance with fisheries regulatory measures remains a major issue. The issue is important as long-term optimum sustainable use, conservation of fisheries resources and healthy ecosystems are possible only if regulatory measures achieve these objectives through being respected and complied with by all stakeholders involved. It is therefore fundamentally important to strengthen fisheries monitoring, control and surveillance frameworks to ensure that States and RFMOs have the commitment, capability and tools to secure compliance through enforcement, and/or other actions.

79. Article 73 of UNCLOS gives to the coastal State important enforcement powers in the exercise of its sovereign rights in the EEZ. The coastal State may take such measures, including boarding, inspecting, arresting and instituting judicial proceedings, as may be necessary to ensure compliance

³⁰ See Article 46, Chapter V, NAFO Conservation and Enforcement Measures, 2011 ([NAFO, 2011a](#))

³¹ As of June 2011, the following NAFO Contracting Parties have signed the FAO PSM Agreement: Canada, European Union, France, Iceland, Norway, the Russian Federation and the United States of America.



- with its fisheries laws and regulations adopted in conformity with UNCLOS. In addition to these powers, Article 111 gives the coastal State the right of hot pursuit of a foreign vessel if it has good reason to believe that the vessel has violated its laws and regulations. Three important restraints are imposed on the enforcement powers of the coastal State. Firstly, 'Arrested vessels and their crews shall be promptly released upon the posting of reasonable bond or other security' (Article 73(2)). Secondly, penalties for violations of fisheries laws and regulations in the EEZ may not include imprisonment, in the absence of agreements to the contrary by the States concerned, or any other form of corporal punishment (Article 73(3)). Thirdly, Article 73(4) imposes an obligation on the coastal State to promptly notify the flag State of any enforcement action taken and of any penalties subsequently imposed. With respect to the high seas, the relevant rules of international law have been discussed above under flag State duties (section 3.2.7).
80. UNFSA Articles 20 and 21 provide for the duty and procedure for cooperation with other States parties in enforcing regionally agreed conservation and management measures against possible violation. Article 21(1) and (2) provide for members of a regional fisheries organization or arrangement to establish schemes by which a member may board and inspect vessels of any other State party to the UNFSA, whether or not such State is also a member of the organization or arrangement concerned, for ensuring compliance with regional measures for straddling and highly migratory stocks. If States fail to establish such a boarding and inspecting scheme within two years after the adoption of the UNFSA, Article 21(3) authorizes boarding and inspecting as provided for under Article 21(1).
 81. Where boarding and inspection establish that there are clear grounds for believing that a vessel has engaged in activity contrary to the conservation and management measures, the inspecting State must, where appropriate, secure the available evidence and promptly notify the flag State of the alleged violation (Article 21(5)). The flag State must promptly investigate the allegation and, if necessary, take enforcement action as mentioned above and also promptly inform the inspecting State of the results of the investigation and of any enforcement action taken; or alternatively, authorize the inspecting State to investigate (Article 21(6)). The flag State may further authorize the inspecting State to take such enforcement action as the flag State may specify, consistent with the rights and obligations of the flag State under the UNFSA (Article 21(7)).
 82. Where, following boarding and inspection, there are clear grounds for believing that a vessel has committed a serious violation and the flag State has failed to take action, the inspectors may remain on board, secure evidence and require the master to assist in further investigation including, if appropriate, bringing the vessel to a suitable port.
 83. The provisions of Article 21 apply, *mutatis mutandis*, to boarding and inspection by a State Party which is a member of an RFMO or arrangement and which has clear grounds for believing that a fishing vessel flying the flag of another State Party has engaged in activity contrary to established conservation and management measures while on the high seas, and such vessel has subsequently, during the same fishing trip, entered into an area under the national jurisdiction of the inspecting State.
 84. Article 22 sets out the specific procedural steps to be followed during such boarding and inspection. Article 23 gives important enforcement powers to port States. It provides that a port State has the right and the duty to take measures, in accordance with international law, to promote the effectiveness of sub-regional, regional and global conservation and management measures. When taking such measures a port State shall not discriminate in form or in fact against the vessels of any State.
 85. The FAO Compliance Agreement is also relevant for the purposes of MCS. However, the MCS measures are essentially the same as those mentioned above under UNFSA, although they are less detailed.



1978 NAFO Convention

86. Article XI (5) gives discretionary power to the Fisheries Commission to adopt monitoring, control and surveillance measures. The *Fisheries Commission* may thus adopt international measures to control and enforce the Convention's provisions in the Regulatory Area through measures in force under Article XI (7).
87. The NAFO Contracting Parties have also agreed (Article XVIII) to maintain and implement a scheme of joint international enforcement within the Regulatory Area. This scheme includes provisions for reciprocal rights of boarding and inspection by Contracting Parties and for flag State prosecution and sanctions on the basis of evidence resulting from such boardings and inspections. The scheme also mandates the submission of an annual report of such prosecutions and sanctions imposed by the flag State.
88. Furthermore, the Commission has discretionary power to establish such Committees and Subcommittees as it considers desirable for the exercise of its duties and functions. NAFO has exercised this power and established, under Rule 5 of the Rules of Procedure of the Fisheries Commission, a Standing Committee on International Control (STACTIC). This Committee assists the Fisheries Commission by monitoring Contracting Party compliance and enforcement (a detailed description of STACTIC functions can be found in Appendix V).

2007 NAFO Amended Convention

89. The Amended Convention sets out extensive provisions on integrated monitoring, control and surveillance systems. Article VI (9) gives the Commission mandatory powers to adopt measures for appropriate cooperative mechanisms to effectively monitor, control, conduct surveillance and enforce the conservation and management measures adopted by the Commission. The mechanisms so adopted must include:
- Reciprocal rights of boarding and inspection by Contracting Parties within the Regulatory Area and flag State prosecution and sanctions on the basis of evidence obtained;
 - Minimum standards for inspection of fishing vessels by Contracting Parties in ports where fishery resources originating in the Regulatory Area are landed;
 - Follow-up actions on the basis of evidence resulting from such inspections; and
 - Without prejudice to any measures a Contracting Party may itself take in this regard, measures for the prevention, deterrence and elimination of IUU fishing.
90. The Commission is also mandated to adopt 'measures to ensure adequate flag State performance' (Article VI (8)), and is given discretionary power to develop procedures that allow for actions, including non-discriminatory trade-related measures, to be taken by Contracting Parties against non-Contracting Parties fishing vessels that undermine the effectiveness of the conservation and management measures adopted by the Commission (Article VI (13)). Each NAFO Contracting Party is required by Article X (1), *inter alia*, to:
- Implement the Amended Convention and any conservation and management measures, or other obligations binding on it, and regularly submit to the Commission a description of the steps it has taken to implement and comply with such measures or obligations;
 - Take all necessary actions to ensure the effectiveness of, and to, enforce the conservation and management measures adopted by the Commission;
 - To the greatest extent possible, take actions or cooperate with other Contracting Parties, to ensure that its nationals and fishing vessels owned or operated by its nationals, conducting fishing activities comply with the provisions of the Amended Convention and with the conservation and management measures adopted by the Commission, and
 - When provided with the relevant information investigate, immediately and fully, and report promptly on actions it has taken in response to any alleged serious infringement of the



Convention, or any conservation and management measure adopted by the Commission, by its nationals, or foreign flagged fishing vessels owned or operated by its nationals,.

91. Each coastal State Contracting Party is also required to regularly submit to the Commission a description of the actions, including enforcement actions, it has taken for the conservation and management of straddling stocks in waters under its jurisdiction within the Convention Area (Article X (2)).
92. Article XI goes on to set out the flag State Duties. A Contracting Party must ensure that fishing vessels entitled to fly its flag:
 - Comply with the provisions of this Convention and with the conservation and management measures adopted by the Commission and that such vessels do not engage in any activity that undermines the effectiveness of such measures;
 - Do not conduct unauthorized fishing activities within areas under national jurisdiction; and
 - Do not engage in fishing activities in the Regulatory Area unless they have been authorized to do so.
93. Each NAFO Contracting Party is also required, by Article XI, to:
 - Refrain from authorizing fishing vessels entitled to fly its flag to engage in fishing activities in the Regulatory Area unless it is able to exercise effectively its responsibilities in respect of such vessels;
 - Maintain a record of fishing vessels entitled to fly its flag it has authorized to fish for fishery resources in the Regulatory Area and ensure that such information as may be specified by the Commission is recorded therein;
 - Exchange the information contained in the record referred to in the subparagraph above, in accordance with such procedures as may be specified by the Commission;
 - In accordance with procedures adopted by the Commission, investigate immediately and fully and report promptly on actions it has taken in response to an alleged infringement by a vessel entitled to fly its flag of measures adopted by the Commission; and
 - In respect of an alleged infringement, ensure that appropriate enforcement actions are taken without delay and that administrative or judicial proceedings are initiated in accordance with its laws.
94. Article XI further provides that enforcement actions taken, or sanctions applied, must be adequate in severity to be effective in securing compliance, discouraging further infringements and depriving offenders of the benefits accruing from their illegal activities Finally, Article XII of the Amended Convention provides for port State duties. It requires a port State Contracting Party to take full account of its rights and duties under international law to promote the effectiveness of conservation and management measures adopted by the Commission. Each port State Contracting Party must implement the measures concerning inspections in port adopted by the Commission.

Performance Review Panel Assessment and Recommendations:

1. **The Panel considers that NAFO's Basic Texts and the 2007 Amended Convention contain comprehensive legally binding provisions which are consistent with international law. These provisions empower the Organization to adopt and apply cooperative and integrated monitoring control and surveillance measures. Such measures include boarding and inspection schemes, VMS, observers, catch documentation and trade tracking schemes, as well as restrictions on transshipment.**
2. **NAFO is also empowered to establish cooperative mechanisms to monitor compliance, as well as detect and deter non-compliance. Such mechanisms include**



compliance committees, vessel lists, and information-sharing schemes about non-compliance.

3. **NAFO and its Contracting Parties are furthermore obliged to follow up on alleged infringements of the conservation and management measures adopted by the Organization. Follow-up action, whether in the form of sanctions or other enforcement action, is required to be adequate in severity to be effective in securing compliance and discouraging violations. They must also deprive offenders of the benefits accruing from their illegal activities or acts of non-compliance. The Commission is given broad powers to adopt and implement integrated MCS systems. The Amended Convention further strengthens Contracting Party commitment by drawing on more recent international instruments to strengthen NAFO's framework for effective MCS systems. General and specific duties, obligations and standards have been elaborated and strengthened. These provide a framework to be pursued by Contracting Parties, coastal States, flag States and port States in ensuring compliance with conservation and management measures adopted by the Commission.**
4. **NAFO therefore is to be commended for the extent to which it has incorporated into its Basic Texts, and the Amended Convention, relevant provisions for cooperative and integrated MCS in accordance with current international fisheries law and best practice.**

3.2.10. Market-related measures

95. Market- and trade-related measures are increasingly being used by States and RFMOs to combat IUU fishing. Such measures are designed to identify those involved in IUU fishing and detect IUU-caught products. They are also aimed at reducing IUU fishing opportunities and incentives through prohibiting access of such products to markets and by monitoring trade patterns to identify ways of improving conservation and management measure implementation (Lack, 2007). There are three main types of market-related measures in use. These include:
 - Measures that are applied to vessels that have been black listed owing to their involvement in IUU fishing- such vessels may be barred from landing their catch in the ports of RFMO members or a State;
 - Schemes that require documentation or certification of catch by the flag State in order to track the catch, landings and trade flow of fish and fishery products- if the required documents are not available then the receiving State should not allow the products to be landed or entered into international trade, and
 - Measures directed at preventing the importation of specified products from flag States whose vessels have participated in IUU fishing.
96. Neither UNCLOS nor the UNFSA expressly provide for the use of market-related measures to secure compliance with conservation and management measures and combat IUU fishing. However, it is arguable that the general rules empowering States and RFMOs to adopt conservation and management measures and combat IUU fishing may be relied on to support the use of market-related measures. The second preambular paragraph of the Port State Agreement recognizes that measures to combat IUU fishing should include market related measures among others.
97. Non-binding instruments such as the Code of Conduct and the Annual UNGA Resolutions on Sustainable Fisheries contain express provisions regarding the application of market-related measures as conservation and management tools. Articles 11(2) of the Code calls upon States to ensure that measures affecting international trade in fish and fishery products are transparent, based, when applicable, on scientific evidence, and are in accordance with internationally agreed rules; and also



that fish trade measures should not be discriminatory and should be in accordance with internationally agreed trade rules.

98. The IPOA-IUU Fishing further develops the rules regarding the use of internationally agreed market-related measures to combat IUU fishing. States are encouraged to take all steps necessary, consistent with international law, to prevent fish caught by IUU fishing being traded or imported into their territories. These measures should be applied in accordance with the principles, rights and obligations established in the World Trade Organization (WTO), and implemented in a fair, transparent and nondiscriminatory manner (Para. 65). States are also encouraged to cooperate, including through RFMOs, to adopt multilaterally agreed trade-related measures that may be necessary to prevent, deter and eliminate IUU fishing (Para. 68). Such measures include the identification of the IUU vessels by RFMOs through agreed procedures (Para. 66), and the adoption of multilateral catch document and certification requirements, and import and export controls or prohibitions (Para. 69). Stock or species-specific trade-related measures may be necessary to reduce or eliminate the economic incentive for vessels to engage in IUU fishing (Para. 70). Trade-related measures should also be used only in exceptional circumstances, where other measures have proven unsuccessful, and only after prior consultation with interested States, and unilateral measures should be avoided (Para. 66).
99. Recent UNGA Resolutions on Sustainable Fisheries, such as Resolution 65/38 adopted on 7 Dec. 2010, urge States, individually and through RFMOs, to adopt and implement internationally agreed market-related measures in accordance with international law, including principles, rights and obligations established in WTO agreements, as called for in the IPOA-IUU Fishing (Para. 54). States and other actors including RFMOs are also encouraged to share information regarding emerging market- and trade-related measures with appropriate international forums, given the potential implications of these measures for all States (Para. 55).

1978 NAFO Convention

100. The 1978 Convention does not expressly address the use of market-related measures to combat IUU fishing.

2007 NAFO Amended Convention

101. Article VI (13) of the 2007 NAFO Amended Convention gives the Commission discretionary power to develop procedures that allow Contracting Parties to take action, including non-discriminatory trade-related measures, against any flag State, or fishing entity, whose fishing vessels engage in fishing activities that undermine the effectiveness of the conservation and management measures adopted by the Commission. The Article also imposes an obligation on each Contracting Party to ensure that trade-related measures implemented by it are consistent with international law.
102. Rule 5.1 of NAFO's Rules of Procedure for the Fisheries Commission empowers the Standing Committee on International Control (STACTIC) to, *inter alia*, compile information, undertake reviews, and make recommendations concerning these matters to the Commission. See in particular Rules 5.1.(k) to (n) which are presented in Appendix V. STACTIC's mandate is therefore broad enough to include the development of recommendations on market-related measures to combat IUU fishing.

Performance Review Panel Assessment and Recommendations:

- 1. The use of market-related measures as a means to combat IUU fishing is a recent development. Therefore it has not been expressly provided for in the 1978 NAFO Convention. However, the 2007 NAFO Amended Convention provides a firm legal basis for NAFO and its Contracting Parties to develop and apply such measures to ensure compliance with conservation and management measures adopted by the**



Organization. STACTIC is also given broad powers to make recommendations on ways to combat IUU fishing. These can include market-related measures.

- 2. NAFO is encouraged to continue developing market-related measures as way of improving the monitoring of total removals from the various fish stocks harvested in the Convention Area and in the event of any potential IUU fishery developing.**

3.2.11. Decision-making and dispute resolution

103. RFMOs are organizations established to ensure effective conservation, and management of transboundary and/or discrete high seas fisheries. The institutional arrangements and decision-making procedures, particularly regarding conservation and management measures, are important factors in an RFMO's effectiveness and overall success.
104. RFMOs typically consist of three principal bodies: (i) a commission, comprised of representatives of the members, which is the main decision-making body; (ii) a scientific body, comprised of scientists from the members, which provides scientific advice to the commission; and (iii) a secretariat, with permanent staff, that coordinates the work of the organization. These main bodies may be assisted in the execution of their functions by subsidiary bodies. Any decisions taken regarding conservation and management measures are legally binding and can have: (a) significant economic and social consequences for members of the organization; (b) significant economic and social consequences for non-members fishing within the convention area of the organization, and (c) for the long-term conservation and sustainability of the fish stocks and marine ecosystems concerned ([Lodge et al., 2007](#)).
105. UNCLOS does not address the issue of decision-making in RFMOs. The UNFSA, however, provides in Article 10 (j) that, in fulfilling their obligation to cooperate through RFMOs, States must 'agree on decision-making procedures which facilitate the adoption of conservation and management measures in a timely and effective manner.'
106. Article 12 calls for 'transparency in the decision-making process' of RFMOs, and provides that representatives from international organizations and NGOs concerned with straddling fish stocks and highly migratory fish stocks must be afforded the opportunity to take part in the meetings as observers or otherwise. It goes on to say such procedures shall not be unduly restrictive, and such international organizations and NGOs must have timely access to the records and reports of the RFMOs, subject to the relevant procedural rules.
107. Article 28 UNFSA further obliges States to cooperate in order to prevent disputes, and in so doing, must agree on efficient and expeditious decision-making procedures within RFMOs and strengthen existing decision-making procedures as necessary.
108. Article 8(3) is also relevant for present purposes as it speaks to the issue of membership of an RFMO and by extension who should be entitled to participate in decision-making. In essence, it provides that membership should be open to any State with a real interest in the fisheries regulated by the RFMO.
109. UN General Assembly Resolution 61/105 of 8 December 2006 urged RFMOs to improve transparency and ensure that their decision-making processes are fair and transparent, rely on the best scientific information available, incorporate the precautionary approach and ecosystem approaches, address participatory rights,... and strengthen integration, coordination and cooperation with other relevant fisheries organizations, regional seas arrangements and other relevant international organizations.



1978 NAFO Convention

110. Under Article 2, NAFO's objective is 'to contribute through consultation and cooperation to the optimum utilization, rational management and conservation of the fishery resources of the Convention Area.' Article 2(2) provides for the constituent bodies to consist of the General Council, Scientific Council, Fisheries Commission and Secretariat.
111. The Fisheries Commission is given responsibility 'for the management and conservation of the fishery resources of the Regulatory Area' (Article XI (1)), and is empowered to adopt proposals for joint action by the Contracting Parties designed to achieve optimum utilization of the fishery resources. In considering such proposals, the Commission is obliged to take into account any relevant information or advice provided to it by the Scientific Council. Any proposal adopted by the Commission is binding on all Contracting Parties (Article XI (7)) unless a valid objection is raised (Article XII). Conservation and management measures also affect Non-Contracting Parties fishing in the NAFO Regulatory Area by virtue of the customary international law codified in UNCLOS and UNFSA. The relevant international legal rules regarding cooperation among states for management and conservation of transboundary and high seas fish stocks are found primarily in Articles 63, 64, 117 and 118 of UNCLOS, and Article 17 of UNFSA (see Appendix VI for further detail). For present purposes it is sufficient to note that Article 17(1) of UNFSA provides that a non-member of an RFMO 'is not discharged from the obligation to cooperate, in accordance with the Convention and this Agreement, in the conservation and management of the relevant ... fish stocks'. In addition, Article 17(2) provides that a non-member 'shall not authorize vessels flying its flag to engage in fishing operations for ... fish stocks which are subject to the conservation and management measures established' by the RFMO. Therefore, Non-Contracting Parties are subject to a duty to cooperate and are also required to comply with and apply any conservation and management measure adopted by the Organization.
112. Under Article VI (1), the Scientific Council provides a forum for consultation and cooperation among the Contracting Parties with respect to the study, appraisal and exchange of scientific information and views relating to fisheries in the Convention Area. This includes consideration of environmental and ecological factors affecting the fisheries, as well as encouraging and promoting cooperation among the Contracting Parties in scientific research designed to fill gaps in knowledge pertaining to these matters. The Council also compiles and maintains statistics and records. It publishes or disseminates reports, information and materials pertaining to the fisheries in the Convention Area, including environmental and ecological factors affecting them.
113. Article XIV mandates that decisions of the Commission are to be taken by a majority of the Commission Members³² present and casting affirmative or negative votes, provided there is a quorum of at least two-thirds of the Commission members voting. It also provides that each Commission member shall have one vote. Three key points may be noted regarding these procedures. Firstly, there is no provision for decisions to be taken by consensus. The proposal must be put to a vote. Secondly, a simple majority, not a high level of support, is all that is needed for adoption of a proposal regardless of the nature and scope of the conservation and management measure in question. Thirdly, any proposal so adopted is legally binding on all Contracting Parties.

The objection procedure in the 1978 NAFO Convention

114. A Contracting Party may opt out of a decision if it so desires by using the objection procedures laid down in Article XII. Paragraph 1 provides that if any Fisheries Commission member presents to the Executive Secretary an objection to a proposal within sixty days of the date of notification of the

³² According to Art XIII (1), the membership of the Commission is reviewed and determined by the General Council at its annual meeting and consists of: each Contracting Party which participates in the fisheries of the Regulatory Area; and each Contracting Party which has provided evidence satisfactory to the General Council that it expects to participate in the fisheries of the Regulatory Area during the year of that annual meeting or during the following calendar year.

³² Note the distinction made in the 1978 NAFO Convention between Contracting Parties and Members of the Commission. See supra at 10.



proposal by the Executive Secretary, the proposal shall not become a binding measure until the expiration of forty days following the date of transmittal in the notification of that objection to the Contracting Parties. Thereupon, any other Fisheries Commission member may similarly object prior to the expiration of the additional forty day period, or within thirty days after the date of the notification to the Contracting Parties of any objection presented within that additional forty-day period, whichever shall be the later. The proposal shall then become a measure binding on all Contracting Parties, except those which have presented objections, at the end of the extended period or periods. If, however, at the end of such extended period or periods, objections have been presented and maintained by a majority of Commission members, the proposal shall not become a binding measure (Art XII(1)). Paragraph 2 says that any Fisheries Commission member which has objected to a proposal may at any time withdraw that objection and the proposal immediately shall become a measure binding on such a member, subject to the objection procedure.

115. Furthermore, at any time after the expiration of one year from the date on which a measure enters into force, any Fisheries Commission member may give to the Executive Secretary notice of its intention not to be bound by the measure, and, if that notice is not withdrawn, the measure shall cease to be binding on that member at the end of one year from the date of receipt of the notice by the Executive Secretary. At any time after a measure has ceased to be binding on a Fisheries Commission member under this paragraph, the measure shall cease to be binding on any other Fisheries Commission member upon the date a notice of its intention not to be bound is received by the Executive Secretary (Article XII(3)).

2007 NAFO Amended Convention

116. The Amended NAFO Convention has improved several of the provisions mentioned above in the interest of strengthening the decision-making process within the Organization.
117. Article XIII (1) now provides that as a general rule, decision-making within the Commission shall be by consensus. This is clearly an improvement over the 1978 Convention which requires a simple majority vote to adopt a proposal. The Commission is now obliged to make every effort to reach consensus among the Contracting Parties.
118. If, however, the Chairperson considers that all efforts to reach consensus have been exhausted, then the decisions of the Commission shall, except where otherwise provided, be taken by two-thirds majority of the votes of all Contracting Parties present and casting affirmative or negative votes, provided there is a quorum of at least two-thirds of the Contracting Parties (Article XIII(2)). The threshold of support required for adoption of a proposal has therefore been increased from a simple majority to a two-thirds majority. This too is an improvement over the 1978 Convention's provisions. Therefore, the new consensus rule and two-thirds majority rule should strengthen the effectiveness of conservation and management adopted since those supporting a measure are more likely to comply with it.

The objection procedure in the 2007 NAFO Amended Convention

119. The 2007 Amended Convention introduces a modified and more restrictive objection procedure in Article XIV. Any Contracting Party may object to a measure, as is the case under the 1978 Convention. However, the objecting party is now required by Article XIV(5) to provide an explanation for its objection, which must specify whether it considers that the measure is inconsistent with the Amended Convention, or unjustifiably discriminates against it. The explanation must also include a declaration of the actions the objecting party intends to take, including a description of the alternative measures it intends for conservation and management of the relevant fishery resources consistent with the objective of the Amended Convention.
120. The objecting party may at the same time submit the matter to an *ad hoc* panel (Article XIV(7)). Alternatively, the Fisheries Commission may decide by simple majority mail vote to submit the objecting party's explanation to an *ad hoc* panel (Article XIV(8)). Furthermore, if the Commission



- decides not to submit the matter to *ad hoc* panel proceedings, any Contracting Party may request a meeting of the Commission to review the measure and the explanation provided by the objecting party (Article XIV(9)).
121. The *ad hoc* panel will review the explanation and the measure adopted by the Commission and make recommendations to the Commission on: whether the explanation provided by the objecting party is well founded, and if so, whether the measure should be modified or rescinded, or where it finds that the explanation is not well founded, whether the measure should be maintained; and whether the alternative measures proposed are consistent with the objective of the Amended Convention and the rights of other Contracting Parties (Article XIV(10)). It should be noted that the decision of the panel is not binding and the objecting party may continue to maintain its objection at the end of the process. If the dispute is still not settled, then any Contracting Party may invoke the binding dispute settlement procedures set out in Article XV of the Amended Convention.
 122. NAFO Contracting Parties have understood that the objection procedure contained in the 1978 Convention is not effective and that it needs to be brought up to date and in line with other more-recent RFMOs (e.g. the 2001 South East Atlantic Fisheries Organisation (SEAFO)).
 123. This new objection provisions introduce some important safeguards to ensure that the lodging of objections becomes an exception in practice. It imposes new responsibilities on Contracting Parties objecting to measures to clearly articulate its rationale for any objection along with alternative measures the Contracting Party intends to put into place so as not to undermine the NAFO measure and Convention's objectives.

Transparency in decision-making

124. Article XVII (b) of the Amended Convention mandates NAFO to seek to develop cooperative working relationships with intergovernmental organizations that can contribute to its work, and which have competence for ensuring the long-term conservation and sustainable use of living resources and their ecosystems. NAFO may invite such organizations to send observers to its meetings, or those of any of its subsidiary bodies; it may also seek to participate in meetings of such organizations as appropriate.
125. There are no provisions in either the 1978 Convention or the 2007 Amended Convention dealing with NGO participation in NAFO's meetings. However, provisions governing such participation are dealt with in the NAFO [Rules of Procedure and Financial Regulation](#) (October 2009) (NAFO, 2009a). Rule 2 provides that any NGO that supports the general objectives of NAFO, and with a demonstrated interest in the species under the purview of NAFO, and that desires accreditation as observers to NAFO meetings, shall notify the Secretariat at least 100 days in advance of the first meeting it wishes to attend. The application must provide specified information regarding the NGO and its work to justify its participation in the Organization. The Application may be rejected if a simple majority of the Contracting Parties votes against it (Rule 4). Once accepted, Observers are entitled to receive the same documentation generally available to Contracting Parties and their delegations, except those documents deemed confidential.

Dispute resolution

126. Legal disputes regarding, *inter alia*, the interpretation and application of the agreement establishing an RFMO, the application of international law or the conservation and management measures will inevitably arise. If possible, and in keeping with international law, disputes should be settled by peaceful means such as discussion, negotiation, mediation, agreement and judicial settlement. Litigation should be used as a last resort in cases where parties cannot themselves settle their differences.
127. UNCLOS does not provide for the settlement of disputes concerning interpretation and application of the constitutions of RFMOs. However, under the United Nations Charter and general international law



States are obliged to settle their disputes by peaceful means, including negotiation, mediation, conciliation, arbitration and judicial settlement³³.

128. Part VIII of UNFSA establishes international standards for dispute settlement in RFMOs. Article 27 repeats the obligation laid down in the UN Charter to settle disputes by peaceful means. Article 28 provides for cooperation so as to prevent disputes by adopting good decision making procedures. Article 29 provides for disputes concerning matters of a technical nature to be dealt with by the use of an *ad hoc* expert panel, which should confer with the States concerned for resolving disputes expeditiously without recourse to binding procedures.
129. Article 30 is both innovative and of particular relevance in that it applies the compulsory system of dispute settlement in Part XV of the UNCLOS Convention to dispute between States Parties to UNFSA, whether or not they are also parties to UNCLOS. Article 30(2) goes further to apply these dispute settlement procedures to disputes concerning the interpretation or application of a regional or global agreement relating to straddling or highly migratory stocks, which could, therefore, include the constitution of a RFMO, and conservation and management measures, providing the parties to the dispute are also parties to the UNFSA and the RFMO, regardless of whether they are parties to UNCLOS.

1978 NAFO Convention

130. The 1978 NAFO Convention does not have a mechanism of dispute settlement. However, since all NAFO Contracting Parties with the exception of Cuba are parties to the UNFSA, recourse may be had to the compulsory system of dispute settlement in Section 2 of Part XV of UNCLOS.

2007 NAFO Amended Convention

131. Article XV establishes the general duty of NAFO Contracting Parties to co-operate in order to prevent disputes, and where a dispute arises, to settle it by peaceful means of their choice including but not limited to by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement, or *ad hoc* panel proceedings. Article XV (3) provides that a dispute concerns the interpretation or application of a measure adopted by the Commission may be submit to non-binding *ad hoc* panel proceedings. The *ad hoc* panel will present a report with recommendations to resolve the dispute. If no settlement has been reached following the recommendations of the *ad hoc* panel, any of the parties to the dispute may submit the dispute to compulsory proceedings entailing binding decisions pursuant to Section 2 of Part XV of UNCLOS or Part VIII of the UNFSA (Article XV(6)). The parties are then required to provisionally apply any recommendation made by the *ad hoc* panel until a court or tribunal renders a decision.

Performance Review Panel Assessment and Recommendations:

1. **The current NAFO objection provision, which permits States to opt out of conservation and management measures they do not agree with, is not uncommon in the conventions of RFMOs. However, the scope of the objection provision in the 1978 NAFO Convention, which reflects other RFMO Conventions at that time, is broad enough to potentially have the effect of undermining the effectiveness of the conservation and management measures adopted by the Organization. On the other hand, the objection procedure may be necessary for national constitutional reasons ('reversed ratification').**
2. **The above objection provisions resulted in a large number of objections being lodged under the 1978 NAFO Convention. This practice was compounded by a number of inter related factors, notably, a) a lack of agreement among Contracting**

³³ See UN Charter, Arts. (2(3), 2(4) and 33



Parties on the management strategies for relevant fish stocks, b) the simple majority rule for decision-making on conservation measures, in particular, and c) the lack of a dispute settlement procedure. In the past, and particularly in the 1980's and early 1990's, this dysfunctional situation has negatively impacted on NAFO's capacity to address its conservation responsibilities in an effective, coherent and timely manner.

3. However, the decision-making provisions in the 2007 Amended Convention are quite elaborate and represent a significant improvement on the provisions in the 1978 Convention.
4. These provisions foresee that if a consensus cannot be reached, then the matter is put to a vote. A higher threshold of two thirds majority is now required for a decision as compared to a simple majority under the 1978 Convention. This higher threshold will no doubt diminish recourse to use of the objection rule and will probably impart greater legitimacy to any decisions reached.
5. Under the 2007 NAFO Amended Convention, a Party objecting to a conservation and management measure can request a review, or enter an objection, within a time limit of 60 days. Objections should be reasoned and should be based on one of the following grounds: (a) the decision is contrary to NAFO's Constitution; or (b) the decision discriminates against that Party in form or fact. The objector must also provide a declaration of the actions it intends to take, including a description of the alternative measures it intends to take for conservation and management of the relevant fishery resources. These requirements are likely to limit the unfettered use of objections to block measures for unspecified reasons (See Sections 4.1.1 and 4.1.2). However, they fall short of keeping the Party bound to a decision which has been reached by consensus to which the Party was originally attached.
6. Another significant feature of the Amended Convention procedure is that the objecting Party, or the Commission, may submit the matter to an *ad hoc* panel for review. If the dispute is not resolved by the *ad hoc* panel it may, if necessary, be settled by use of the compulsory binding procedures for dispute settlement pursuant to Part XV of UNCLOS (Arts. XIV and XV). These provisions are commendable and represent significant improvements on the arrangements in the 1978 NAFO Convention. They are more detailed and skillfully crafted to create a coherent, timely and effective decision-making process supported by a balanced and strong dispute resolution mechanism which should result in the adoption of conservation and management measures that are more acceptable to all parties.
7. These improvements should strengthen the commitment to take decisions by consensus, limit recourse to the objection procedure; translate into greater commitment by Contracting Parties in implementing and complying with the measures adopted, and thereby enhance the overall performance of the Organization.
8. The Panel is aware that concerns have been expressed by various parties concerning a perceived lack of transparency surrounding the NAFO decision-making process. As the Panel understands, the Fisheries Commission is presented by the Scientific Council at the Annual Meeting with a complete review of the status of each stock as well as advice on what measures should be adopted. There follows a debate in the Fisheries Commission where the initial positions of the parties are presented on both the status of the stocks and the recommended advice. It is understood that working sessions at Heads of Delegation level then ensue in



order to determine whether agreement can be found on a range of outstanding issues.

- 9. The Panel acknowledges that the complexity of certain issues may entail necessary lengthy discussions between parties. However, the Panel would advocate that, to the greatest extent possible but consistent with the effective functioning of the Organization, the Commission's deliberations in the main are held in public session.**
- 10. The Amended Convention further provides that nothing in it prevents the application of the compulsory procedure entailing binding decisions under Part XV of UNCLOS, or Part VIII of UNFSA, for the States Parties to the respective instruments concerned (Article XV(12)). This provision is useful in keeping all potentially available means of dispute settlement open to the parties.**

3.2.12. Relationship with non-Contracting Parties

132. The pursuit of cooperation among all States and entities with real interests in the fisheries within a particular area is a fundamental principle for the effective conservation and management of shared, straddling, highly migratory and discrete high seas fish stocks. Where an RFMO has been established and empowered to adopt conservation and management measures for such stocks, States may give effect to their duty to cooperate by becoming members of such organizations Alternatively they may agree to comply with the measures adopted by the RFMO or ensure that their vessels do not harvest the resources or undermine the effectiveness of the RFMO's measures The basic international legal rules regarding cooperation among States for management and conservation of such stocks are found primarily in Articles 63, 64, 117 and 118 of UNCLOS, and Article 17 of UNFSA (see Appendix VI). The relevant provisions regarding high seas fisheries are summarized below.
133. Articles 117 and 118 of UNCLOS provide for the legal duty of a State to cooperate with other States whose nationals fish in the same area or for the same stocks in taking measures necessary for the conservation of high seas fish stocks. This duty to cooperate is part of customary international law. The duty may be given effect through participation in an RFMO as a contracting party or a cooperating non-contracting party, but it applies whether or not the State is a contracting party to an RFMO.
134. The law governing the relationship between RFMOs and non-members is further developed in Article 17 of UNFSA. It provides that a State which is not a member of an RFMO is not discharged from the obligation to cooperate in the conservation and management of the relevant fish stocks (Article 17(1)). Accordingly, a non-member State is prohibited from authorizing vessels flying its flag to engage in fishing operations for stocks which are subject to conservation and management measures established by the RFMO (Article 17(2)).
135. Article 17 (4) further provides that RFMO member States shall exchange information relating to the activities of fishing vessels of non-members that are engaged in fishing operations for the relevant stocks, and take measures consistent with the Agreement and international law to deter activities of such vessels which undermine the effectiveness of regional conservation and management measures.

1978 NAFO Convention

136. There is no provision in the 1978 Convention on cooperation with non-Contracting Parties. However, Article XIX provides for Contracting Parties to agree to invite the attention of any non-Contracting Party to any matter relating to the fishing activities in the Regulatory Area of the nationals or vessels of that State which appear to affect adversely the attainment of the objectives of the Convention. The Contracting Parties further agree to confer upon the steps to be taken towards obviating such adverse effects.



2007 NAFO Amended Convention

137. Co-operation between NAFO and non-Contracting Parties is dealt with in Article XVI of the Amended NAFO Convention. It provides that where a vessel entitled to fly the flag of a non-Contracting Party engages in fishing activities in the Regulatory Area, the Commission must request the flag State to cooperate fully with the Organization either by becoming a Contracting Party or by agreeing to apply the conservation and management measures adopted by the Commission. NAFO Contracting Parties are required to:

- Exchange information on fishing activities in the Regulatory Area by vessels of any non-Contracting Party and on any action they have taken in response to such fishing activities;
- Take measures consistent with this Convention and international law to deter fishing activities of vessels of non-Contracting Party that undermine the effectiveness of the conservation and management measures adopted by the Commission;
- Advise any non-Contracting Party of any fishing activity by its nationals or vessels that undermine the effectiveness of the conservation and management measures adopted by the Commission; and
- Seek co-operation with any non-Contracting Party that has been identified as importing, exporting or re-exporting fishery products derived from fishing activities in the Convention Area.

Performance Review Panel Assessment and Recommendations:

1. **NAFO is to be commended for introducing into its Amended Convention comprehensive provisions to provide a strong legal basis for cooperation with non-Contracting Parties in accordance with international law, including the taking of action against non-Contracting Parties that undermine the conservation and management measures adopted by NAFO.**

3.2.13. Cooperation with other regional fisheries management organizations

138. RFMOs provide a mechanism to facilitate cooperation among States for the conservation and management of transboundary and high seas fisheries within a defined region or sub-region. The performance of RFMOs themselves could be improved through closer cooperation with each other on subject matters of common interest such as IUU fishing and in order to improve the conservation and management of resources that may be connected through oceanographic or ecological processes ([Lodge et al. 2007](#)).

139. While there are several provisions of international law on the duty of States to cooperate, there are no provisions specifically addressing cooperation between or among RFMOs. A general commitment to cooperate may be implied insofar as it is necessary to achieve effective conservation and management of high seas fisheries, address common challenges such as IUU fishing, and promote greater cooperation among States.

140. The Annual UN General Assembly Resolution on Sustainable Fisheries have urged States to strengthen and enhance cooperation among existing and developing RFMOs in which they participate, including increased communication and further coordination of measures (Res. 61/105 para.71; Res. 64/72 para 99).

1978 NAFO Convention

141. Apart from a brief reference in Article VI (2), which provides for the functions of the Scientific Council to be carried out in cooperation with other public or private organizations having related objectives, there are no other provisions in the 1978 Convention concerning cooperation with RFMOs or other international organizations.



2007 NAFO Amended Convention

142. Article XVII of the Amended Convention addresses co-operation with other Organizations. NAFO is mandated to cooperate on matters of mutual interest with the FAO, other specialized agencies of the United Nations and other relevant organizations. It is also mandated to seek to develop cooperative working relationships, and may enter into agreements for this purpose, with intergovernmental organizations that can contribute to its work, and which have competence for ensuring the long-term conservation and sustainable use of living resources and their ecosystems. It may invite such organizations to send observers to its meetings or those of any of its subsidiary bodies. It may also seek to participate in meetings of such organizations as appropriate. NAFO is further mandated to cooperate with other relevant RFMOs taking note of their conservation and management measures.

Performance Review Panel Assessment and Recommendations:

1. **The 2007 NAFO Amended Convention contains comprehensive provisions concerning cooperation with RFMOs and other international organizations. NAFO is to be commended for including such provisions in the 2007 NAFO Amended Convention as these will provide a sound legal basis for cooperation with other organizations in areas of mutual interest. NAFO should also be encouraged to continue to develop, strengthen and enhance cooperation with other RFMOs and international organizations as considered desirable to further its objective.**

3.2.14. The special requirements of developing States

143. UNCLOS Article 119 (1) provides that in determining the TAC and establishing other conservation measures for the living resources in the high seas, States shall, *inter alia*, take measures which are designed to maintain or restore populations of harvested species at levels which can produce the MSY, as qualified by relevant environmental and economic factors, *including the special requirements of developing States* (emphasis added).
144. UNFSA, in its preamble, speaks to ‘the need for special assistance... in order that developing States can participate effectively in the conservation, management and sustainable use of fish stocks.’ Part VII consisting of Articles 24 to 26, lays down the obligations of States and international organizations to take into account the special requirements of developing States and sets forth the objectives of enhanced cooperation with developing States and the ways in which specific forms of assistance might best be given.
145. Article 24 requires States to ‘give full recognition to the special requirements of developing States’ in relation to conservation and management of straddling and highly migratory fish stocks and development of fisheries for such stocks, and to provide assistance to developing States to that end. In cooperating in the establishment of conservation and management measures, States must take into account the special requirements of developing States, in particular (a) the vulnerability of developing States which are dependent on the exploitation of marine living resources, (b) the need to avoid adverse impacts on, and ensure access to fisheries by, subsistence, small-scale and artisanal fishers and women fish workers, as well as indigenous people in developing States, and (c) the need to ensure that such measures do not result in transferring a disproportionate burden of conservation action onto developing States.
146. With regard to the areas in which States are to cooperate, Article 25 specifies: (a) the enhancement of the ability of developing States to conserve and manage straddling and highly migratory fish stocks, and the development of their own fisheries for such stocks; (b) the assistance to developing States to enable them to participate in high seas fisheries for such stocks; and (c) facilitating the participation of developing States in RFMOs. With regard especially to capacity building, UNFSA provides that assistance shall be provided in order to build capacity in the field of conservation and management of



- resources, and should be focused on enhancing capacity to implement data collection and verification, observer programs, data analysis and research projects supporting stock assessments (Annex I, Article 1 (2)).
147. Furthermore, Article 26 calls upon States to cooperate to establish special funds to assist developing States in the implementation of the Agreement, including assisting them to meet the costs involved in proceedings for the settlement of disputes to which they may be parties.
 148. The FAO Compliance Agreement briefly provides, in Article VII, that the Parties shall cooperate to provide assistance to Parties that are developing countries in order to assist them in fulfilling their obligations under the Agreement.
 149. The Code of Conduct also stresses the need to ‘give full recognition to the special circumstances and requirements of’ developing countries, and calls upon States and relevant international organizations to work for the adoption of measures to address the needs of developing countries (Article 5.2).
 150. Finally the recent FAO Agreement on Port State Measures also addresses the special requirements of developing States in Article 22, calling on States Parties to provide assistance to build their capacity in order for them to comply with their treaty obligations.

1978 and 2007 NAFO Conventions

151. Neither the 1978 nor the 2007 Amended NAFO Conventions contain provisions to address Part VII of the UNFSA in regards of the special requirements of developing States.

Performance Review Panel Assessment and Recommendations:

- 1. The PRP noted that the provisions addressed in Part VII of the UNFSA have not been taken into account in the 2007 NAFO Amended Convention. While recognizing that up to now this has not been an issue to NAFO, the Organization, in its operation, should, as appropriate, take into account the special requirements of Developing States, in accordance with the relevant international instruments addressing the conservation and management of marine living resources, including UNFSA. It is suggested that the Council may wish to further reflect on the matter.**



4. Conservation and Management

4.1. The historical context: 1978 to 1995

4.1.1. Introduction.

1. For most of its existence, and prior to modernization through the Convention reform process between 2005 and 2007, NAFO was comprised of the General Council, the Scientific Council and the Fisheries Commission. Together these three bodies were mandated to “contribute through consultation and cooperation to the optimum utilization, rational management and conservation of the fishery resources of the Convention Area”. NAFO meets annually and, occasionally on an intersessional basis, to decide on management measures for the key fish stocks for which it is responsible, including, notably, the setting of total allowable catches (TACs) and quotas for the subsequent year.
2. The 1978 to 1995 period was an extremely challenging one for NAFO. There were major points of difference between parties on the appropriate management strategy to be followed for groundfish stocks. Decisions were taken by NAFO in that period on the basis of a simple majority, in accordance with the decision-making process outlined in the NAFO Convention. Such decisions, particularly in the 1986 to 1991 period, were reached often after divisive and acrimonious debates between Contracting Parties, many of which are documented in the *Meeting Proceedings and Reports of the Fisheries Commission* for that period.
3. As NAFO moved into the post-1995 period, a more constructive process developed between the Contracting Parties and this is best exemplified by the fact that decisions of the Fisheries Commission since then have been primarily based on consensus, with no voting required.

4.1.2. Challenges

4. The absence of an agreed management strategy for stocks led to decisions being taken by simple majority. This, in turn, led to a significant number of objections by parties dissatisfied with the decisions taken. As a result, in the pre-1995 period annual catch was well beyond the level recommended by Scientific Council for many of the key groundfish stocks. This resulted in declines in the abundance of many significant groundfish stocks, and eventually moratoria on most stocks, including discrete and transboundary stocks within the NAFO Regulatory Area and the adjacent EEZs. Thus, the key challenges during this difficult period for NAFO included:
 - Activity of Non-Contracting Party vessels;
 - The lack of consensus in the Fisheries Commission which resulted in the use of the objection procedure by some Contracting Parties and this in a context where there was no agreed dispute settlement procedure; and
 - Non-compliance by some vessels/masters and the lack of effective follow-up/sanctions by some Contracting Parties

4.1.2.1. Activity of Non-Contracting Party Vessels

5. In 1979, NAFO recognized the potential for uncontrolled fishing in the Regulatory Area by Non-Contracting Party vessels and, at its first annual meeting, the Fisheries Commission endorsed a resolution discouraging arrangements with Non-Contracting Party operators. Notwithstanding this resolution, Non-Contracting Party presence and catch increased throughout the 1980s.
6. In 1990, NAFO responded to the increasing threat to conservation and management posed by this activity by establishing the Standing Committee on Fishing Activities by Non-Contracting Parties in



the Regulatory Area (STACFAC), as a subsidiary body of the General Council, to monitor the activities of these vessels and to make recommendations to address this issue.

7. Non-Contracting Party activity in the Regulatory Area was conducted by two distinct groups: 1) vessels from countries that were not signatories to the NAFO Convention; and 2) vessels flying flags of convenience (FOC) which were crewed (and often owned) by nationals of Contracting Parties but registered in countries not bound by the Convention or the Conservation and Enforcement Measures.
8. In its annual reports completed up to 1995, STACFAC concluded that, during the previous eleven year period (1985 to 1995), Non-Contracting Party vessels harvested an estimated 350 000 to 375 000 t of groundfish in the NAFO Regulatory Area. Non-Contracting Parties were, in fact, harvesting the equivalent of approximately 25% of the TAC set annually for most of the key groundfish stocks found in the NAFO Regulatory Area (Table 3).

Table 3. Non-Contracting Party groundfish catches, during the period of 1984-1995, in NAFO Regulatory Area

Year	Number Of Vessels	Fishing Effort (days)	Total Catch (t)
1984	11	840	12 000
1985	30	1 730	23 500
1986	30	2 030	19 300
1987	29	2 640	29 400
1988	41	3 130	35 200
1989	47	3 290	35,400
1990	44	4 420	46 800
1991	34	4 000	47 300
1992	35	3 775	42 600
1993	31	3 217	34 200
1994	27	2 234	22 500
1995	13	900	10 950
Total	372	32 206	359 150
Avg./ Yr	31	2 683.8	29 929.2

9. By the mid-1990s, diplomatic efforts and coastal State initiatives to eliminate Non-Contracting Party activity in the NAFO Regulatory Area achieved success and Non-Contracting Party activity was significantly reduced by 1998, becoming non-existent in the Regulatory Area since 2007 due, in part, to effective cooperation between NAFO Parties.

4.1.2.2. The use of the objection procedure by some Contracting Parties and lack of a dispute settlement procedure.

10. As discussed in Section 3.2.11, during the pre-1995 period, Fisheries Commission decisions were based on simple majority voting with all significant decisions subject to formal votes by the Contracting Parties. The NAFO Convention, however, includes provisions for Contracting Parties to object to Fisheries Commission decisions. Article XII states:
 1. If any Commission member presents to the Executive Secretary an objection to a proposal within sixty days of the date of transmittal specified in the notification of the proposal by the Executive Secretary, the proposal shall not become a binding measure
11. Because of the lack of agreement on a management strategy, including the $F_{0.1}$ option recommended by Scientific Council, in the period from 1985 to 1995, some Contracting Parties annually objected to Fisheries Commission TAC and quota decisions. These Contracting Parties subsequently set unilateral



quotas significantly higher than those provided for in the NAFO decisions. In some cases, the unilateral quotas and subsequent fishing activity resulted in catch that was well in excess of Scientific Council advice and, potentially, a threat to the conservation of some stocks. From 1985 to 1995, Contracting Parties submitted objections to 141 TAC, quota, or moratoria decisions. Other decisions related to the Conservation and Enforcement Measures were also subject to objections during this period (Table 4). Additional details on objections are attached in Appendix VII.

12. Any Contracting Party objecting to a Fisheries Commission decision, although not formally required by the NAFO Convention to provide any justification or rationale for that objection, usually explained the basis for it. The lack of constructive dialogue between parties was further aggravated by the absence of a dispute settlement procedure within NAFO which further limited overall transparency within the organization.
13. The net effect of the failure of NAFO as an organization to get agreement between the Parties on management measures were catch levels significantly beyond recommended TACs over a 10-year period³⁴ and an inevitable deterioration of the managed stocks.

Table 4. Summary of Contracting Party Objections to Conservation and Enforcement Decisions taken by NAFO in the period 1979-95.³⁵

Year ³⁶	Number of Conservation and Enforcement Decisions	Number of Objections	Number of Objecting Contracting Parties
1979	9	1	1
1980	9	1	1
1981	10	1	1
1982	10	0	0
1983	10	3	1
1984	10	5	2
1985	11	26	3
1986	11	29	3
1987	11	9	1
1988	11	8	1
1989	11	7	1
1990	11	3	1
1991	11	3	1
1992	11	7	1
1993	11	14	2
1994	13	14	6
1995	14	21	3

4.1.2.3. Non-compliance by some vessels/ masters and the lack of effective follow-up/ sanctions by some Contracting Parties

14. As described in Section 2.4.1, the Standing Committee on International Control (STACTIC) is a subsidiary body of the Fisheries Commission and is responsible for reviewing the Monitoring, Control, and Surveillance (MCS) Program and making recommendations to the Fisheries Commission on improvements to the Conservation and Enforcement Measures. Throughout the history of NAFO,

³⁴ Refer to reported catch and Scientific Council reports for the mid-1980s to mid-1990s period.

³⁵ Source [NAFO/FC Doc. 03/7](#) (NAFO, 2003d).

³⁶ Refers to year objection lodged regarding decisions applicable to following year, except in 1979.



the Fisheries Commission, on recommendations of STACTIC, made significant modifications to the Conservation and Enforcement Measures. In 1993/94³⁷, STACTIC completed a major re-write of the Conservation and Enforcement Measures.

15. The MCS Program for the NAFO Regulatory Area has been comprehensive throughout the history of NAFO and has resulted in the annual detection of a significant number of individual vessel/ master infringements as well as reviews outlining specific areas of non-compliance. While no formal definition exists in the NAFO Conservation and Enforcement Measures, an apparent infringement may lead to a citation issued by a NAFO Inspector to the master of a fishing vessel indicating non-compliance with specific provision of the NAFO Conservation and Enforcement Measures. Special provisions exist to deal with apparent infringements of a serious nature which, during the pre-1995 period, included:
 - directed fishing for a stock which is subject to a moratorium or for which fishing is prohibited;
 - mesh size violations;
 - misreporting of catches;
 - preventing inspectors or observers from carrying out their duties.
16. Citations issued during at sea inspections are an indicator of non-compliance. Other indicators may be provided through observer reports, port inspections, comparative analysis of vessel activity, aerial surveillance, and Vessel Monitoring Systems. During the 1979 to 1995 period, NAFO inspectors issued, on average, 33 citations of at-sea apparent infringements annually³⁸, reaching a high of 104 citations in 1994 (Table 5). These infringements were an indicator of significant non-compliance. Of note, is the period 1991 to 1994, when NAFO inspectors issued, on average, 78 citations annually.

³⁷ As well as 2011

³⁸ Refer to Meeting Proceedings/STACTIC reports for additional details



Table 5. Summary of Apparent Infringements issued during at sea inspections by NAFO inspectors during the period 1979-1995.

Year	Number of Apparent Infringements	Number of Contracting Parties	Number of Serious Apparent Infringements ³⁹	Number of Inspecting Parties
1979	21	4	9	1
1980	10	4	6	2
1981	3	2	1	3
1982	20	2	20	2
1983	21	4	14	2
1984	24	3	9	2
1985	35	3	29	1
1986	48	3	42	2
1987	18	1	16	1
1988	10	2	8	3
1989	14	3	7	2
1990	11	3	8	3
1991	31	2	11	2
1992	72	4	30	2
1993	100	10	43	2
1994	104	9	39	2
1995	25	5	10	2
Total	567	64	298	34
Average	33	4	18	2

17. Despite the ability of the MCS Program to detect apparent infringements, during the pre-1995 period⁴⁰, overall compliance was poor due, to some degree, to ineffective follow-up by some Contracting Parties. Reports submitted to STACTIC by Contracting Parties on follow-up to infringements were often completed as nil reports or pending follow-up for many years. Infringements for which convictions were reported rarely included any additional information on penalties. This ineffectiveness manifested as continuous and recurring non-compliant behavior by vessels/ masters. Much of this non-compliance was of a significant nature with impacts on stock health. For example, in most years, inspectors reported infringements related to misreporting of catch as well as the use of small mesh gear and liners. However, it should also be recognized that, in some cases, citations issued during at-sea inspections were not always proven when the Contracting Party flag State completed port inspections. The gap between at sea and port inspection (as high as 3-4 months) may be an explanation for these discrepancies or, as some parties indicated, there were doubts about the objectivity of MCS program (a detailed discussion on follow-up on infringements can be found in Section 5.4).
18. In any event, this divergence of views was yet another manifestation of the poor decision-making structure of the Organization and, in particular, how disagreements between parties were or were not addressed.

³⁹ The definition of serious infringements established in 2004 was applied.

⁴⁰ As well as for periods into the 2000s.



Performance Review Panel Assessment and Recommendations:

1. The pre-1995 period in NAFO was defined by the key challenges outlined above, with the decision-making processes of the Organization being characterized by adversarial voting processes which, in turn, resulted in an overall poor stewardship of the fishery resources under the purview of NAFO. However, in the post-1995 period, significant improvements have been observed, for the following reasons:

the presence of Non-Contracting Party activity in the NAFO Regulatory Area has been eliminated;

the frequent use of the objection procedure related to Fisheries Commission quota decisions has largely ceased and a dispute settlement procedure is now prescribed in the modified Convention;

improvements to compliance, as well as effective follow-up by most Contracting Parties, has occurred following the incorporation of new and modern provisions related to immediate follow-up and sanctions into the modified Convention and Conservation and Enforcement Measures;

the adversarial nature of the decision-making processes has disappeared and has been replaced by a more mature decision making process. Contracting Parties work in a more collegial and transparent manner, recognizing the requirements of international instruments (e.g.: Precautionary Approach and Ecosystem-based Management), and endeavouring to reach consensus on management decisions regulating the fishery resources and marine ecosystems.

2. NAFO is to be commended for the above developments.

4.2. Status of marine living resources

4.2.1. Status of marine living resources⁴¹ under the purview of NAFO

19. Eight of the 19 NAFO-regulated stocks (Table 1) are currently under fishing moratoria due to their severely depleted status (Table 6). Table 6 also illustrates NAFO's quota regulation history. Three of the 19 stocks are subject to rebuilding, or recovery, plans: Subarea 2 + Div. 3KLMNO Greenland Halibut (since 2004), Div. 3NO Cod (since 2008) and Div. 3LNO American Plaice (beginning 2011).

⁴¹ In the *Amended Convention*, "fishery resources" are taken to mean all fish, molluscs and crustaceans within the *Convention Area* excluding: (i) sedentary species over which coastal States may exercise sovereign rights consistent with Article 77 of UNCLOS, and (ii) in so far as they are managed under other international treaties, anadromous and catadromous stocks, as well as highly migratory species, listed in Annex I of UNCLOS. (*Amended Convention*, Article I)



Table 6. Number of NAFO Regulated Stocks (1979-2011).

Year	No. Quota Stocks	No. Moratorium Stocks	Year	No. Quota Stocks	No. Moratorium Stocks
1979	2	0	1996	11	5
1980	10	1	1997	11	5
1981	10	0	1998	11	6
1982	10	0	1999	11	7
1983	10	1	2000	12	7
1984	10	1	2001	13	7
1985	10	1	2002	13	7
1986	10	0	2003	16	7
1987	10	0	2004	19	9
1988	10	0	2005	19	9
1989	10	0	2006	19	9
1990	10	0	2007	19	9
1991	10	0	2008	19	9
1992	10	0	2009	19	9
1993	10	1	2010	19	7
1994	10	2	2011	19	8
1995	11	5			

*Note: Table 6 begins with the entry into force of NAFO. The situation in NAFO's predecessor, ICNAF, is not mentioned.

Sources: Quota tables 1979-2011, [FC Doc. 04/4](#) (NAFO, 2004e), [FC Doc. 08/6](#) (NAFO, 2008d), [FC Doc 10/7](#) (NAFO, 2010g), [FC Doc. 11/1](#) (NAFO, 2011a).

Catch History

20. Catches in the Northwest Atlantic since 1960 are illustrated in Figure 3. Some historical developments to be noted in the fisheries within the NAFO Area include:

- Following various stock declines and the decisions to halt fishing for certain stocks, some catches have improved with time. For example Div. 3LNO Yellowtail Flounder stocks declined in the early 1990s. Following, moratoria being declared in 1995-1997, the fishery reopened and stocks are growing ([NAFO SC Reports \(1994-1997, 2010\)](#) (NAFO, 2011p), [Meeting Proceedings \(1993-1995\)](#) (NAFO, 2011m);
- A decline in groundfish catches and the rise of the shrimp fisheries (post-1995);
- The 3M Cod fishery was closed to fishing in 1999. It reopened in 2010 with the Total Allowable Catch (TAC) set at 5 500 t⁴². The TAC was increased in 2011 to 10 000 t ([NAFO SC Reports \(1998-2009\)](#) (NAFO, 2011p), [Meeting Proceedings \(1998-2010\)](#) (NAFO, 2011m);
- NAFO adopted a Precautionary Approach Framework (PAF) in 2003 ([FC Doc. 04/18](#) (NAFO, 2004f)) (Section 4.6.2) following seven years (1997- 2004) of study by a Scientific Council Working Group [NAFO SC Reports \(1997\)](#) (NAFO, 2011p);
- The introduction (in 2005) of the first elasmobranch quota management system in any RFMO, [FC September 2004 Meeting Report](#) (NAFO, 2005a, Section II);
- Work on an Ecosystem Approach to Fisheries Management commenced in 2007 ([SC Reports, 2007, Part A](#) (NAFO, 2008c). This now includes closure of seamounts and VMEs, closure of areas of significant coral and sponge concentrations [Meeting Proceedings - FC Reports \(2005-2010\)](#) (NAFO, 2011m) (see also Sections 4.3 and 4.6.2);

⁴² 't' = metric tons



- A multi-year rebuilding plan for Greenland halibut ([FC Doc. 03/13](#) (NAFO, 2003e)) was introduced in 2003 and a Management Strategy Evaluation Approach ([FC Doc. 10/12](#) (NAFO, 2010i), [FC Doc 10/29](#) (NAFO, 2010d)) were introduced in 2010, and
- Fishing by Non-Contracting Parties fleets in the NAFO Area has decreased to zero over the years. (see Figure 50).

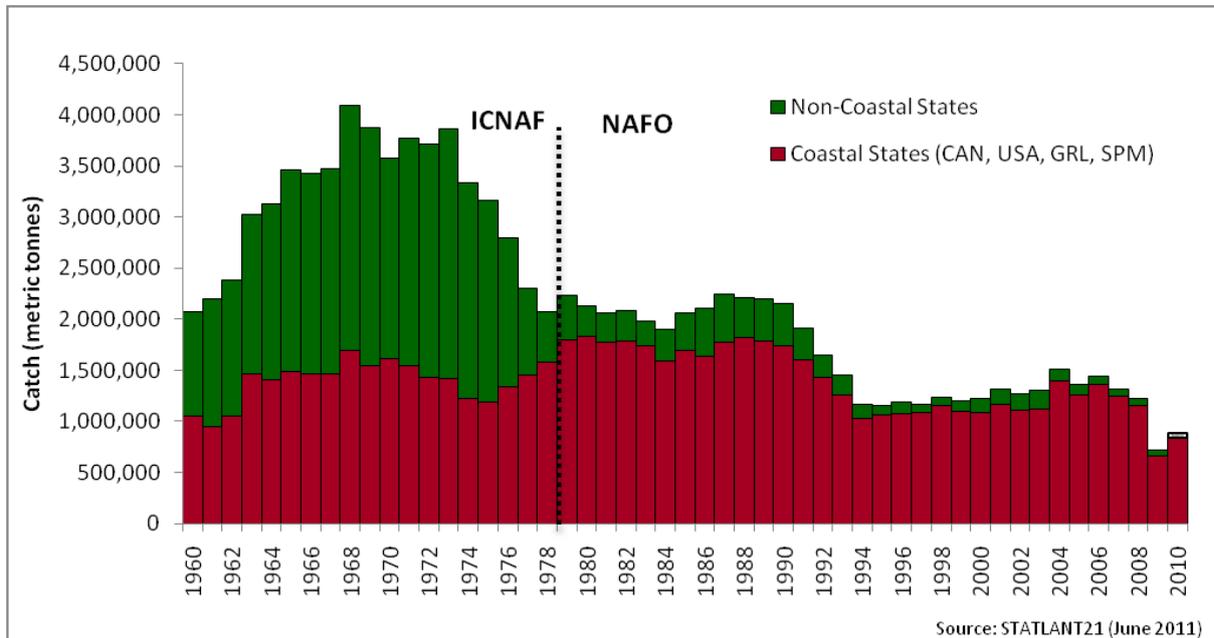


Figure 3. Total catches in the North-West Atlantic based on STATLANT21 data from 1960 to 2010. The data comprises of all catch reported, by all flag States, excluding: mammals, salmon, tuna and tuna like species, and invertebrates (except shrimp and squids).

Stock Status

21. NAFO Scientific Council meeting reports are published after each meeting. Assessments of the status of various stocks are undertaken by the Council during June each year. Information on stock status and trends is provided in summary sheets which also set out any agreed scientific advice ([NAFO SC Reports \(2001-2010\)](#) (NAFO, 2011p)). [Table 7](#) summarizes the assessed status of NAFO-regulated stocks. Key details are also presented in the ensuing paragraphs.



Table 7. Status of NAFO Fish Stocks.

Specie(s)	Stock	Status	*Reference Point(s)
Atlantic Cod	Div. 2J3KL	Moratorium 1993-Present Reopened Canadian artisanal fishery 1999	B_{lim}
	Div. 3M	Moratorium 1999-2009 Fishery reopened 2010	B_{lim}
	Div. 3NO	Moratorium 1994-Present Rebuilding Plan 2007	B_{lim}
Greenland Halibut	SA2 + Div. 3KLMNO	Fishery Open Stock low (high degree of uncertainty) Rebuilding Plan 2003 Management Strategy Evaluation 2010	No reference points
American Plaice	Div. 3M	Moratorium 1994-Present	B_{lim}
	Div. 3LNO	Moratorium 1995-Present Rebuilding plan 2010	B_{lim} F_{lim}
Atlantic Redfish	SA2 + Div. 1F & Div. 3K**	Fishery open	B_{lim}
	Div. 3LN	Fishery open Biomass above B_{msy} Fishery Below F_{msy}	B_{lim} B_{msy} F_{msy}
	Div. 3M	Fishery open Spawning biomass increasing Fishing mortality low	No reference points
	Div. 3O	Fishery open Stock increasing Fishing mortality low	No reference points
Thorny Skate	Div. 3LNOPs	Fishery open Uncertain stock status	No reference points
Yellowtail Flounder	Div. 3LNO	Fishery open Stock level above B_{msy}	B_{lim}, B_{msy}
White Hake	Div. 3NOPs	Fishery open Uncertain stock status	No reference points
Witch Flounder	Div. 2J3KL	Moratorium 2004-Present	B_{lim}
	Div. 3NO	Moratorium 1995-Present	No reference points
Capelin	Div. 3NO	Moratorium 1995-Present	No reference points
Northern Shortfinned Squid	SA 3+4	Fishery open Low productivity period	No reference points
Northern Shrimp	Div. 3M	Moratorium 2011	B_{lim}
	Div. 3LNO	Fishery open (Div. 3L only) Stock declining	B_{lim}
* The NAFO PAF is used to identify specific reference points (Section 4.6.2 below)			
** Managed in collaboration with NEAFC			



Cod

22. NAFO currently manages three Cod stocks in Divisions 2J3KL, 3M and 3NO. In 2010, the directed fishery for Div. 3M Cod was reopened with a TAC of 5 500 t. A moratorium on Div. 3NO Cod continues from 2011, following the most recent assessments conducted in 2010. The spawning stock biomass (SSB) of Div. 3M Cod has been increasing significantly since 2004, reaching levels much greater than those during the first years of assessment (1988-1995). In 2009, total Cod biomass and abundance were still lower than in the early years. A TAC of 10 000 t was set for 2011. The Div. 3NO Cod stock remains at relatively low levels, but has improved slightly in recent years to levels just prior to introduction of the moratorium in 1994. Nevertheless, SSB remains well below B_{lim} . In 2007, a conservation plan and rebuilding strategy for Div. 3NO Cod was adopted, with implementation beginning in 2008.

Greenland Halibut

23. Greenland Halibut is a traditionally fished species. A Rebuilding plan was adopted in 2003 for Subarea 2 and Divisions 3KLMNO Greenland Halibut stocks for an initial period of four years and annually thereafter following scientific advice that the stock had markedly declined. The primary objective of these plans was to allow for a stable, long-term yield through the setting of prescribed quotas in future years.
24. Biomass increased between 2004 and 2008, but from 2008 to 2010 weaker year classes recruited to the fishery. This resulted in a decreased stock biomass and is consistent with a recent trend where recruitment has been below average. The TAC for 2011 is 17 185 t. In 2010, a NAFO *Management Strategy Evaluation* (MSE) approach for this stock was approved to begin in 2011. A simple model-free management strategy was adopted ([FC Doc. 10/12](#) (NAFO, 2010i)) and a harvest control rule (HCR) will adjust the TAC from year to year subject to constraints on a maximum percentage change. The strategy will be implemented for four years (2011-2015) and will be monitored by the Scientific Council.

American Plaice

25. NAFO manages two American Plaice stocks in Div. 3LNO and Div. 3M. A moratorium is in place for both stocks during 2011. The most recent (2008) assessment for Div. 3M American Plaice concluded that stock biomass and SSB are at very low levels, with no signs of any stock recovery.
26. The 2010 Div. 3LNO American Plaice assessment found that the stock biomass was still low, when compared to historic levels. Although the SSB is increasing, it is estimated to be below B_{lim} . There is currently an interim conservation plan and rebuilding strategy for the stock. These follow the reference points and time frames for achieving established targets, harvest control rules and the implementation strategy outlined in the PAF.

Atlantic Redfish

27. The three Northwest Atlantic Redfish species (Acadian Redfish, Deepwater Redfish and Golden Redfish) are not usually differentiated in reported catches. However, NAFO is responsible for managing Redfish stocks in Subarea 2 and Divisions 1F+3K, 3LN, 3M and 3O.
28. The Redfish fishery in Subarea 2 and Division 1F+3K is considered a pelagic fishery. This stock straddles the North-East Atlantic and its management is shared with NEAFC. The NAFO portion of the TAC was set at 12 516 t for 2010. The most recent assessments for the NAFO managed portion of the stock were undertaken in 2009 and 2010. In 2010, the Div. 3LN Redfish fishery was reopened. The stock biomass was above B_{msy} , and fishing mortality (F) was below F_{msy} . The 2011 TAC was set at 6 000 t.



29. The Div. 3M Redfish stock biomass and SSB are increasing, but still remain low compared to early historical levels. Low F is required to promote recovery of the female spawning stock. The TAC for 2011 was set at 10 000 t.
30. Div. 3O Redfish catches have averaged around 13 000 t since 1960. Catches at this level appear to be sustainable. Fishery independent surveys indicate that the stock has increased since the early 2000s. Stock dynamics are poorly understood and a predictive assessment is not currently possible. Between 1960 and 2009, catches exceeded 20 000 t in two years (1988 and 2001). A TAC of 20 000 t has been set for 2011.

Thorny Skate

31. Commercial Skate catches comprise a mixture of species. However, Thorny Skate represents about 95% of all NAFO skate catches, with assessments being based on this species. Stock status is unclear, but the biomass appears to have been stable from 1996 to 2009, albeit at a low level compared to early years. The Div. 3LNO Thorny Skate TAC for 2011 is set at 12 000 t.

Yellowtail Flounder

32. A 2009 assessment indicates that the NAFO-managed Yellowtail Flounder stock in Div. 3LNO has increased slightly since 2002. It is also perceived to be at a level well above B_{msy} . The TAC for 2011 is set at 17 000 t.

White Hake

33. In 2005, NAFO began managing Div. 3NO White Hake. Recent declines in stock biomass indices have been observed and recruitment is currently low. The recent annual mean catches are in the order of 850 t. The TAC is 6 000 t for 2011.

Witch Flounder

34. NAFO manages two Witch Flounder stocks in Divisions 2J3KL and 3NO. A moratorium is in place for both stocks. All NAFO-managed Witch Flounder stocks appear to be at a low levels following recent assessment in 2008 and 2010. The recent annual mean catches are in the order of 300 t.

Capelin

35. NAFO manages one stock of Capelin in Division 3NO. A moratorium for this species was in place between 1983 and 1986, and from 1996. In light of capelin's importance as a food source in the trophic chain, and consistent with an ecosystem approach (Section 4.3), the moratorium on Div. 3NO Capelin will remain until at least 31 December 2012.

Northern Shortfin Squid

36. Northern Shortfin Squid in Subareas 3-6 (and further south to Florida) are considered to be a single unitary stock. The squid TAC for Subareas 3 and 4 has been set at 34 000 t for 2011, but no directed fishing for squid has taken place in these two subareas since the 1970s.

Northern Shrimp

37. NAFO manages Shrimp stocks in Divisions 3LNO and 3M. In the mid-1990s, obligatory sorting grids were introduced in order to reduce Shrimp fishery bycatch.
38. Indices of Div. 3M Shrimp biomass decreased sharply in 2009 to below B_{lim} , although exploitation levels have been low since 2005. Under the PAF, the stock appears to be in collapse, and recruitment prospects remain poor. The stock has been managed through an effort allocation scheme and a moratorium has been declared for 2011.



39. Division 3LNO Shrimp biomass peaked in 2007. Although it decreased subsequently, the biomass remains at, or above, mean levels. The 2011 TAC of 19 200 t is confined to Div. 3L. Division 3NO Shrimp has been closed to fishing and there has never been a directed fishing for shrimp in Division 3NO.

Performance Review Panel Assessment and Recommendations:

1. **Estimates of pre-exploitation stock biomass (B_0) are customarily not reported by the Scientific Council, although such estimates are likely to form part of the various assessment model outputs. NAFO may wish to consider explicitly presenting B_0 more generally (i.e. apart from in the context of FIRMS) as a baseline against which overall depletion of any stock may be assessed.**
2. **In terms of getting a clearer picture of current B_{msy} compared to pre-exploitation stock biomasses for all stocks in the NAFO Area, the situation is complicated greatly by the likelihood that many of the stocks have been fished down substantially from their pristine levels. However, as already indicated, 8 out of the 19 stocks (almost half) managed by NAFO are presently subject to a fishing moratorium, due to past overexploitation, while another three are subject to a recovery plan, after being depleted.**
3. **The PRP's other views on, and recommendations concerning, the status and trends of various NAFO-managed stocks are consolidated at the end of Section 4.2.2 below.**

4.2.2. Trends in NAFO stocks

40. The **catch** and **status trends** for various stocks in the NAFO *Area* over time are summarized below. Catch levels recommended by the Scientific Council and the TACs adopted by the Fisheries Commission are also compared with reported catches for varying periods- predominantly from 1980 to 2011. The following PRP assessments and recommendations deal with all the information considered relevant to Sections 4.2.1 and 4.2.2 here. In this regard, it should again be noted that the current status of various NAFO-regulated stocks has been summarized in **Error! Reference source not found.**

4.2.2.1. Catches and TAC trends of NAFO managed stocks

41. Article III- *General Principles*, paragraph (b), of the Amended Convention states:

adopt measures based on the best scientific advice available to ensure that fishery resources are maintained at or restored to levels capable of producing maximum sustainable yield.

STOCKS NOT CURRENTLY UNDER FISHING MORATORIA

Div. 3M Cod

42. Between 1983 and 1987, the annual Div. 3M Cod TAC was of the order 12 850 t. This was allocated despite Scientific Council advice that there should be no directed fishery on the stock (Figure 4). Between 1981 and 1987, catches were above the TAC in four years (1981, 1982, 1985 and 1986). Despite moratoria being in place from 1988 to 1990, catches totaled 5 397 t.
43. From 1991 to 1998, the annual TAC was about 9 990 t, again contrary to the Scientific Council's advice that there should be no directed fishery. However, during this period, catches were always below the TAC (Figure 4).



44. During moratoria from 1999 to 2009, the total bycatch was 2 020 t (averaging about 184 t/ year). By setting a TAC based on Scientific Council advice, the Div. 3M Cod stocks are improving but are still at a low level. In 2011, the TAC was raised to 10 000 t, consistent with Scientific Council advice.

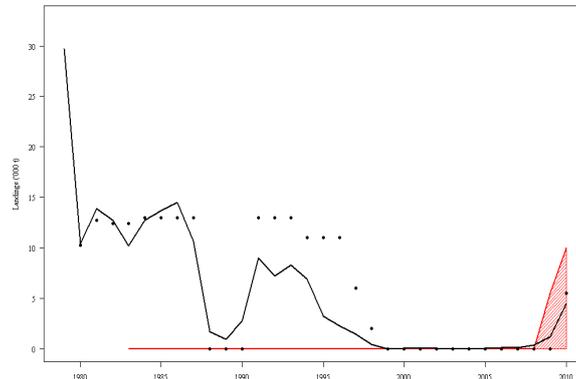


Figure 4. Div. 3M Cod catches (from STATLANT 21 Database – black lines), Scientific Council recommended catch levels (Rec. SC – red line, “no directed fishery” plotted as 0, “catches less than...” represented as shaded area), and the TAC set by the Fisheries Commission (1980-2011 – black dots).

SA2+ Div. 3KLMNO Greenland Halibut

45. Prior to the late-1980s, Greenland Halibut was primarily fished within the jurisdiction of the coastal State (Canada). The coastal State had established management measures including TACs and quotas. In the late 1980s, Div. 3LMNO Greenland Halibut became available in commercial quantities in the NAFO Regulatory Area and an unregulated fishery developed, primarily in previously unfished areas deeper than 900m.
46. Over a number of years, the Fisheries Commission debated appropriate management measures and, in 1994, adopted a TAC regime. The TAC for Subarea 2+ Div. 3KLMNO Greenland Halibut was established at 27 000 t for 1995. This increased, generally based on SC advice, to 42 000 t by 2002 (Figure 5).
47. At its 2003 Annual Meeting, NAFO responded to new SC advice calling for significant reductions in the TAC by establishing a 15 year Greenland Halibut Rebuilding Plan with an initial Year One (2004) TAC of 20 000 t decreasing to 16 000 t by Year 4 (2007).
48. In 2010, A NAFO *Management Strategy Evaluation* (MSE) approach for this stock was adopted effective in 2011 ([FC Doc. 10/12](#) (NAFO, 2010i)). This aims to adjust the TAC from year to year subject to a 5% constraint on TAC change unless exceptional circumstances exist. The strategy will be implemented for four years (2011-2015) and will be monitored by the Scientific Council. SC reports that biomass increased between 2004 and 2008, but from 2008 to 2010 weaker year classes recruited to the fishery. This resulted in a decreased stock biomass and is consistent with a recent trend where recruitment has been below average. The TAC for 2011 is 17 185 t and is consistent with the Management Strategy Evaluation (MSE) approach.



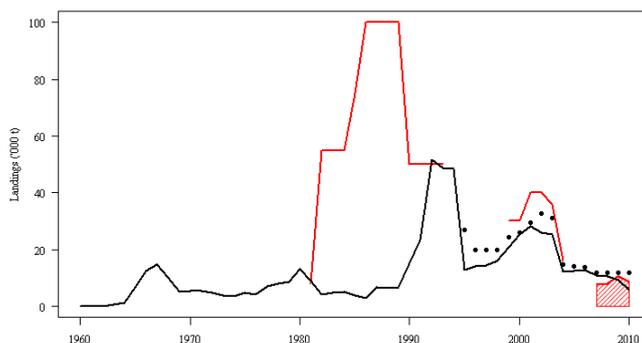


Figure 5. Greenland Halibut catches, Scientific Council recommended catch levels and TAC, 1960 - 2010 (extracted from STATLANT 21A, 7/7/2011)

Subarea 2 and Divisions 1F+3K

49. There have been two catch peaks in the Subarea 2 and Divisions 1F+3K Redfish fishery. The first (close to 31 000 t) occurred in 1985 and the second (30 207 t) in 2003 (Figure 6). Between 1991 and 1999, catches were much lower and varied between 20 and 300 t, with the exception of 1995, when 1 372 t were caught. Scientific advice on this stock has been largely provided by ICES as the stock is mainly located in the NEAFC Area. The presence of the stock in NAFO waters is associated with periods of high abundance. Conversely, in periods of low abundance the stock is concentrated in the NEAFC Area.

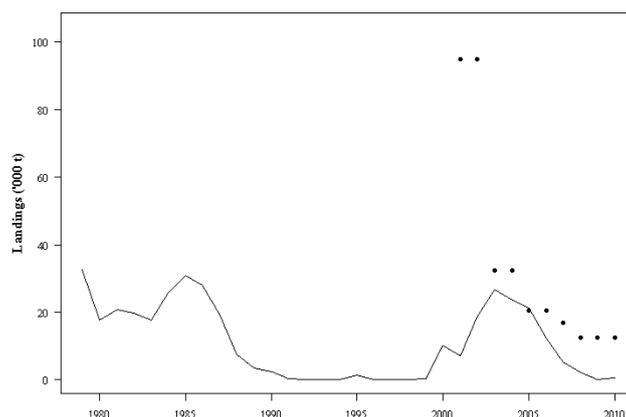


Figure 6. Subarea 2 and Divisions 1F+3K Redfish catches (from STATLANT 21 Database, 7/7/2011), and the TAC set by the Fisheries Commission (1980-2011).

Div. 3LN Redfish

50. The 3LN Redfish TAC has been set at the Scientific Council recommended level since 1980 (Figure 7). In 1996 and 1997, the TAC was set below the Scientific Council's advised level. However, and on average, catches have been 26 to 27% above the TAC (e.g. 1991 to 1993). The 1987 catch was almost 3 times higher than the TAC. From 1994 onwards, catches declined markedly, indicating an impending stock collapse. In 1998, a moratorium was introduced for this stock, but for the next two years (1998 to 2000), some 4 211 t (average 1 403 t/ year) of bycatch was taken.
51. The Redfish assessment is different from cod with high levels of uncertainty attached. The Div. 3LN Redfish stock therefore appears to have been at very low levels, possibly collapse, for a number of years probably due to a persistent failure to comply with the TAC. In 2011, the TAC was set at 6 000 t consistent with Scientific Council advice.



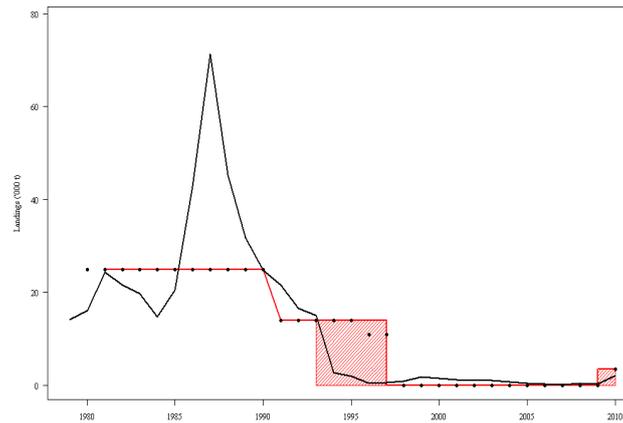


Figure 7. Div. 3LN Redfish catches (from STATLANT 21 Database, July 2011), Scientific Council recommended catch levels (Rec. SC), and the TAC set by the Fisheries Commission (1980-2011).

Div. 3M Redfish

52. From 1981 to 1989 the TAC was set at the Scientific Council recommended level. Post-1985, catches increased to levels much higher than the TAC (more than twice as high in 1987 and 1989, Figure 8). During the mid-1980s and the 1990s (1985-1999), the Div. 3M Redfish stock appears to have been severely depleted by catches considerably above the TAC. Similarly, during the 1990s (1990-199), the Fisheries Commission set TACs above those recommended by the Scientific Council.
53. From 1990 to 1997, the TAC was systematically above the Scientific Council recommended level (2.5 times higher in 1993). Catches declined steadily from 1990 onwards (about 55 000 t in 1990 to below 10 000 t in 1994) and fell below 1 000 t in the period 1997 to 1999.
54. Between 2000 and 2007, the allowable catch was set in conformity with scientific advice, with actual catches being relatively close to the TAC. However, from 2008 onwards, the TAC again began to be set at levels higher than those recommended by the Scientific Council.
55. Slight catch increases between 2000 and 2008 could indicate increased stock levels, probably attributable to catches being close to the TAC and Scientific Council recommended levels. It is also notable that catches were well below the TAC from 1994 to 2000, a factor also reflected in the setting of TACs at Scientific Council recommended levels between 2000 and 2008.

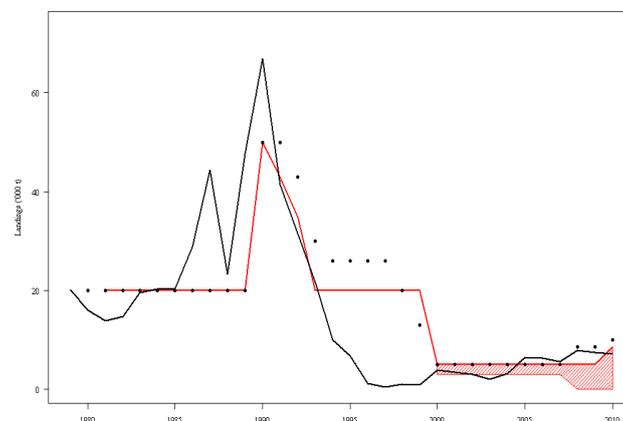


Figure 8. Div. 3M Redfish catches (from STATLANT 21 Database, July 2011), Scientific Council recommended catch levels (Rec. SC), and the TAC set by the Fisheries Commission (1980-2011).



Div. 3O Redfish

56. Regulation of Div. 3O Redfish only commenced in 2005 with a TAC of 20 000 t being set. This TAC was set at a level approximately the catch for 2000 to 2002 (Figure 9). To date, no scientific advice has been provided on the TAC level.
57. The initial TAC in 2005 was set close to the level of catches prevailing in the immediately prior years. There was a marked decline in catches between 2003 and 2004.

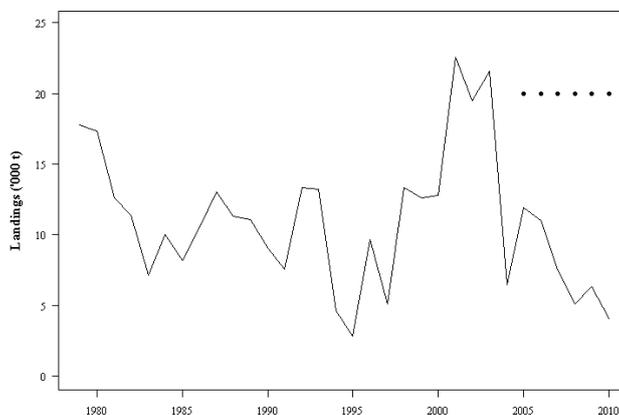


Figure 9. Div. 3O Redfish catches (from STATLANT 21 Database, July 2011), Scientific Council recommended catch levels (Rec. SC), and the TAC set by the Fisheries Commission (1980-2011).

Div. 3LNO Thorny Skate

58. The Div. 3LNO Thorny Skate catch grew markedly over ten years from about 800 t in 1982 to 28 400 t in 1991 (Figure 10). In 1992 it fell abruptly to about 5 000 t, to grow again from thereon to 18 277 t in 2000. The possible causes of this decline remain undetermined.
59. Post-2000, Div. 3LNO Thorny Skate catches declined and have oscillated around 5 000 t over the past 5 years. On average, the TAC between 2005 and 2011 was 50% above the Scientific Council recommended level. However, the catches were close to the TAC recommended by the Scientific Council. In 2010 (for 2011), the TAC of 12 000 t was more than twice than that of 5 000 t recommended by the Scientific Council.

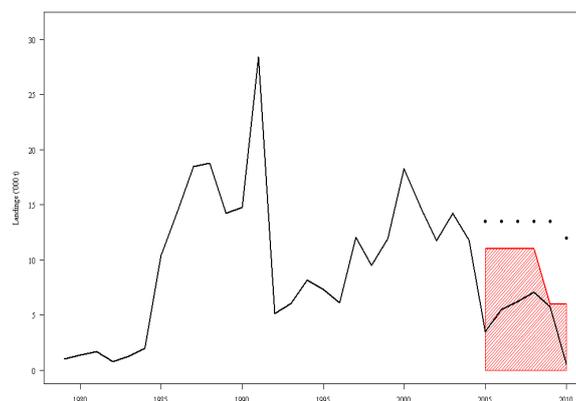


Figure 10. Div. 3LNO Thorny Skate catches (from STATLANT 21 Database, July 2011), Scientific Council recommended catch levels (Rec. SC), and the TAC set by the Fisheries Commission (1980-2011).

Div. 3LNO Yellowtail Flounder

60. Division 3LNO Yellowtail Flounder catches were below the TAC between 1981 and 1984. From 1985 to 1992, the catch was always above the TAC (46%, on average). In 1993, catches dropped from



slightly above 10 000 t to 231 t, in the face of a TAC of 7 000 t (Figure 11). A three-year (1995-1997) moratorium was then introduced. Following the moratorium, catches increased steadily in close conformity with the TAC. In 2000, catches again rose above 10 000 t, to fluctuate around 13 000 t between 2003 and 2005 close to the TAC. The catches dropped rapidly again in 2005/06 to below 1 000 t (587 t)⁴³. In the following two years it rose to about 11 000 t in 2008.

61. Post-1994/95, catches of Div. 3LNO Yellowtail Flounder conformed with, or were below, the TAC set at the level recommended by the Scientific Council. The decreasing catch trend in the mid-1990s was probably a consequence of catches significantly above the established TAC, from 1985 to 1992 (Figure 11).

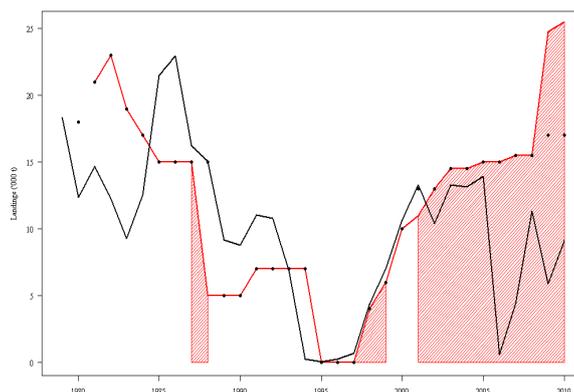


Figure 11. Div. 3LNO Yellowtail Flounder catches (from STATLANT 21 Database, July 2011), Scientific Council recommended catch levels (Rec. SC), and the TAC set by the Fisheries Commission (1980-2011).

Div. 3NO White Hake

62. The Div. 3NO White Hake fishery was not subject to any catch limitation, until 2004. In that year, a TAC for 2005 of 8 500 t was set, with the catch in the previous year having been at less than 6 000 t (1 915 t) (Figure 12).
63. Despite the above TAC, catches of Div. 3NO White Hake never reached 8 500 t (maximum of 8 061 t, in 1987). After increasing rapidly from 1 701 t in 1981 to 8 061 t in 1987, catches fell to only 293 t in 1994. They remained under 1 000 t until 2002 and 2003 catches rose to 5 365 and 6 158 t respectively. The catches fell again to under 1 000 t in 2009, when 409 t were caught. It is unclear whether low catches of Div. 3NO White Hake between 1994 and 2001 were due to low stock levels or some change in fishing strategy and/or migration of fish from elsewhere.
64. The Scientific Council considers the Div. 3NO White Hake TAC of 8 500 t adopted in 2005 to be unsustainable and unrealistic. In 2010, the Council recommended a TAC of 850 t based on the average prevailing catches. This was lower than the 6 000 t adopted by the Fisheries Commission for 2010 and 2011. However, it should be noted that actual catches have been close to scientifically advised levels over the past few years.

⁴³ Mainly due to a fishers strike in Canada



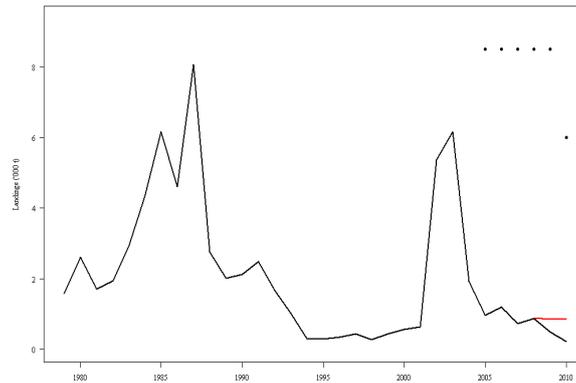


Figure 12. Div. 3NO White Hake catches (from STATLANT 21 Database, July 2011), Scientific Council recommended catch levels (Rec. SC), and the TAC set by the Fisheries Commission (1980-2011).

Subareas 3 & 4 Squid

65. The Subareas 3 and 4 Squid catches have been almost an order of magnitude lower than the TACs set in 1980 (150 000 t) and 2001 (34 000 t) (Figure 13). This was a precautionary step in anticipation of any eventual commencement of fishing on these stocks.

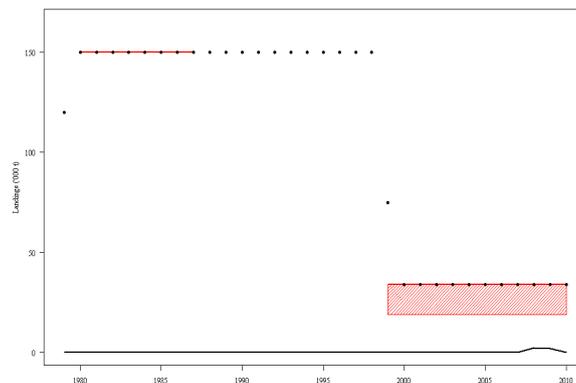


Figure 13. Subareas 3 & 4 Squid catches (from STATLANT 21 Database, July 2011), Scientific Council recommended catch levels (Rec. SC), and the TAC set by the Fisheries Commission (1980-2011).

66. Assessment of Subareas 3 and 4 Squid stocks appears to be difficult probably due to the combined uncertainties likely to be associated with a lack of knowledge of stock dynamics and a dearth of relevant information.

STOCKS CURRENTLY UNDER FISHING MORATORIA

Div. 2J+3KL Cod

67. Prior to mid-1980s, Div. 2J+3KL Cod was primarily available and fished within the jurisdiction of the coastal State (Canada). The coastal State had established management measures including TACs and quotas. In the 1980s, Div. 3L Cod became available in commercial quantities in the NAFO Regulatory Area and a fishery developed initially unregulated.
68. Over a number of years, the Fisheries Commission debated appropriate management measures and, in 1996, the management measures were adopted (Article 4 of the NCEM).
69. Prior to the adoption of these management measures, a moratorium on directed fisheries for Div. 2J+3KL Cod was implemented by the coastal State (Canada) in 1992. A moratorium was also implemented in Division 3L in the Regulatory Area portion of the Div. 2J+3KL stock by NAFO in the



same year. There has been a small artisanal fishery, restricted to waters inside a 12nm limit, by the coastal State (Canada) since 1999.

70. The catch of Div. 2J+3KL Cod peaked in 1986 at 143 953 t. It then fluctuated around 130 000 t, until 1992, when catches and stock estimates declined sharply (Figure 14). By 2004, the spawning stock biomass offshore was less than 1% of average during the 1980s.
71. A limit reference point (LRP) has been established by Canada for Div. 2J+3KL Cod. Estimated SSB has been well below the LRP since the early 1990s. The estimate of 2010 SSB is 90% below the LRP. Current levels of removals have resulted in low exploitation rates and probably have had little impact on recent stock dynamics. At current levels of stock productivity (growth rates, recruitment, survival) the stock will not reach the LRP within the next five years.

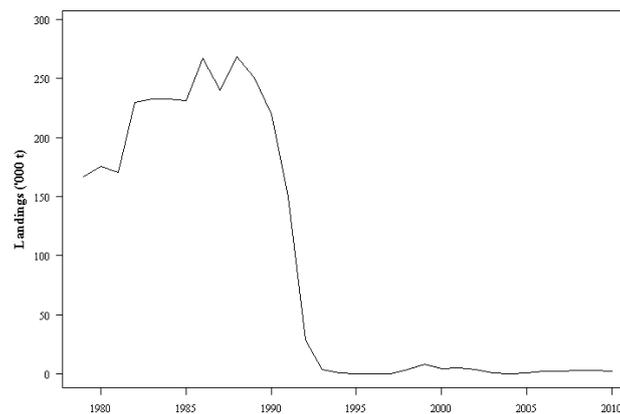


Figure 14. Div. 2J+3KL Cod catches (from STATLANT 21 Database, July 2011).

Div. 3NO Cod

72. The Div. 3NO Cod stock was depleted in the late 1970s and no directed fishery was allowed in 1980. Catches began to increase in 1981 and peaked at 50 645 t in 1986 (Figure 15). Catches decreased sharply in 1987, until the collapse of the stock, in 1994, when a moratorium was imposed, remaining in force until today. From 1982 to 1991, catches were well above the TAC (30% higher, on average) and appears to have driven the stocks to very low levels which persist.

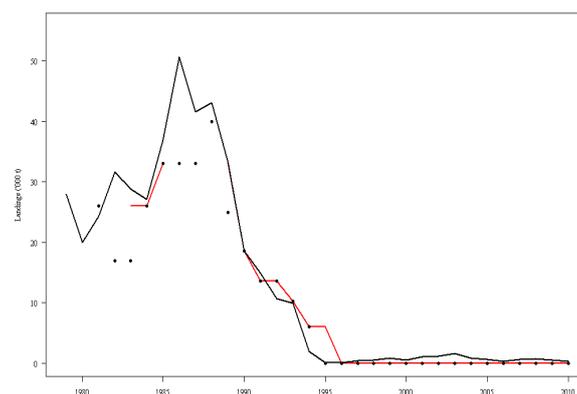


Figure 15. Div. 3NO Cod catches (from STATLANT 21 Database, July 2011), Scientific Council recommended catch levels (Rec. SC), and the TAC set by the Fisheries Commission (1980-2011).

Div. 3M American Plaice

73. Div. 3M American Plaice catches remained below the TAC from 1981 to 1985 (Figure 16). They then increased sharply to peak at 5 607 t in 1987- a value more than 2.5 times the TAC. Post-1987, catches



began to decline and fell below 1 000 t from 1992 onwards. In 1995 a fishing moratorium was introduced and catches of Div. 3M Plaice stood at 243 t.

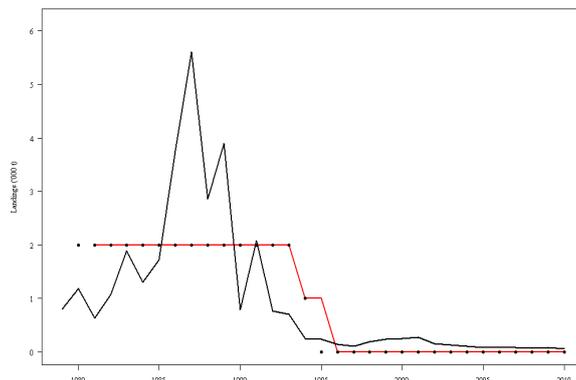


Figure 16. Div. 3M American Plaice catches (from STATLANT 21 Database, July 2011), Scientific Council recommended catch levels (Rec. SC), and the TAC set by the Fisheries Commission (1980-2011).

Div. 3LNO American Plaice

74. Catches of Div. 3LNO American Plaice peaked in 1986 at 57 449 t (Figure 17). They then decreased markedly to 548 t in 1995 when a moratorium was enforced. However, by 1992, the stock was considered to be at a very low level and continuing to decline. In 1994, the Scientific Council recommended TAC was 4 800 t, about 10% of the TAC recommended in 1987, suggesting a collapse of the stock.
75. Div. 3LNO American Plaice was last assessed in 2009. However, in 2010 the Scientific Council recommended that directed fishing on the stock continue to be banned. It also warned that Div. 3LNO American Plaice bycatch should be kept as low as possible and restricted to unavoidable bycatch in fisheries directed at other species.
76. The Council's 2010 recommendations suggest that the Div. 3LNO American Plaice stock is not yet showing signs of any recovery from severely depleted levels. The reasons for such depletion are not clear as NAFO-regulated catches have not been significantly above the TAC, which was largely set in conformity with scientific advice. An interim rebuilding plan is currently in place for this stock.

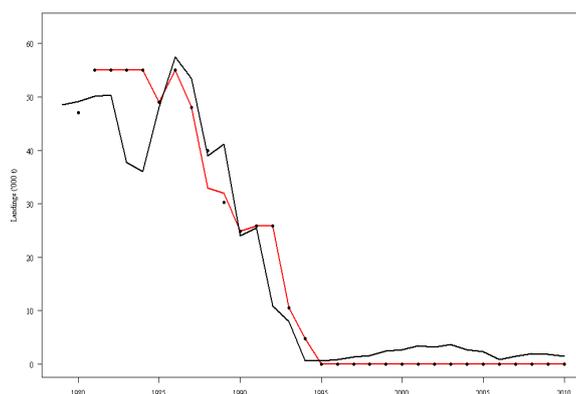


Figure 17. Div. 3LNO American Plaice catches (from STATLANT 21 Database, July 2011), Scientific Council recommended catch levels (Rec. SC), and the TAC set by the Fisheries Commission (1980-2011).

Div. 2J+3KL Witch Flounder

77. Division 2J+3KL Witch Flounder catches increased sharply from 1983 to 1986, when they peaked at 3 184 t (Figure 18). They then dropped to very low levels in 1993 and 1994 (194 and 129 t) before



increasing to about 1 500 t in 1996. Catches decreased to 279 t in 2004, when a moratorium was enforced. Except for the 2004 moratorium, the linking of Scientific Council advice with management action on the Div. 2J+3KL Witch Flounder stock is unclear.

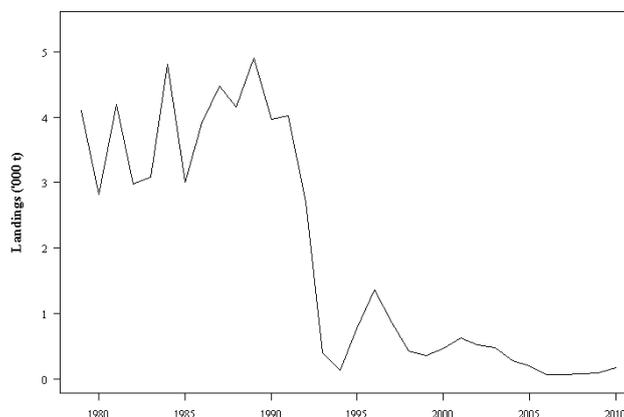


Figure 18. Div. 2J+3KL Witch Flounder catches (from STATLANT 21 Database, July 2011).

Div. 3NO Witch Flounder

78. The Div. 3NO Witch Flounder catch trends are very similar to those for Div. 3M American Plaice. Catches of the former increased sharply in the mid-1980s to peak at 9 131 t in 1986, almost twice the TAC value (Figure 19). Catches then decreased to between 4 000 and 5 000 t, between 1989 and 1993, before falling to 266 t in 1994. The moratorium was imposed in the following year.
79. Like Div. 3M American Plaice, it seems that the Div. 3NO Witch Flounder stock was driven to very low levels during the late 1980s by catches well in excess of sustainable levels. It is unclear whether Div. 3NO Witch Flounder catches in excess of the TAC were largely taken by NAFO Parties or NAFO Non-Contracting Parties.

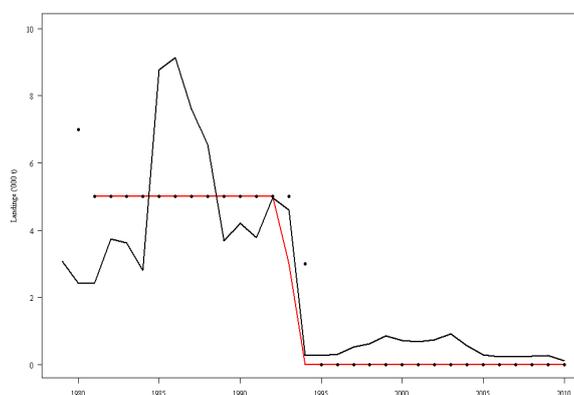


Figure 19. Div. 3NO Witch Flounder (catches from STATLANT 21 Database, July 2011), Scientific Council recommended catch levels (Rec. SC), and the TAC set by the Fisheries Commission (1980-2011).

Div. 3M Shrimp

80. Division 3M Shrimp catches increased from about 25 000 t in 1993 to about 63 000 t in 2003 (Figure 20). The catch then declined sharply, reaching its lowest level of 5 376 t in 2009. It was noted that this observed decline in catches probably did not reflect changes in fishing effort alone.
81. For the period 2003 to 2008 the Scientific Council recommended TACs in excess of 40 000 t. Since 2004, catches were below this level and were declining. This was followed in 2009 by a Scientific Council recommendation for a catch as close as possible to zero. In 2010 the Fisheries Commission agreed to a moratorium for Div. 3M shrimp beginning in 2011.



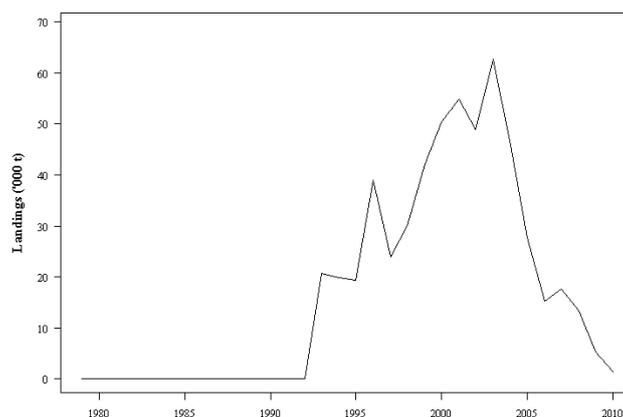


Figure 20. Div. 3M Shrimp catches (from STATLANT 21 Database, July 2011), Scientific Council recommended catch levels (Rec. SC), and the TAC set by the Fisheries Commission (1980-2011) (Effort Allocation Scheme).

Div. 3NO Capelin & Div. 3NO Shrimp

82. Catches of Div. 3NO Capelin were only permitted between 1981 and 1982, and from 1987 until 1992 under a TAC of about 30 000 t (Figure 21). However, Div. 3NO Capelin catches were only recorded from 1987 to 1992, and these peaked at 24 630 t in 1990. Catches then dropped sharply to 118 and 65 t in 1991 and 1992 before adoption of the moratorium in 1993. The exact reasons for this trend are difficult to determine from available information. The Div. 3NO Shrimp fishery remains unopened in the interests of precautionary management and because there have never been any significant catches on this stock.

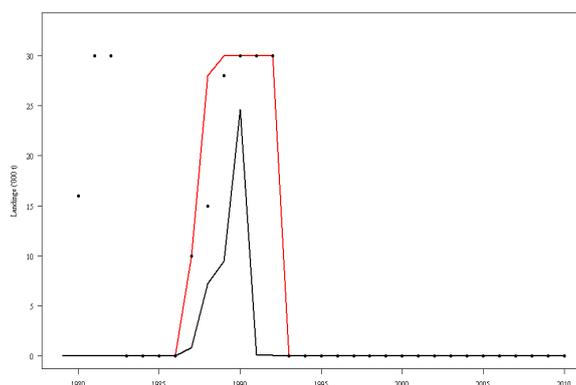


Figure 21. Div. 3NO Capelin catches (from STATLANT 21 Database, July 2011), Scientific Council recommended catch levels (Rec. SC), and the TAC set by the Fisheries Commission (1980-2011).

4.2.2.2. Biomass and abundance trends of NAFO managed stocks

83. The main NAFO stock assessment meeting takes place in June. Information about the status of the stocks and trends can be found in summary sheets that contain the agreed scientific advice (<http://www.nafo.int/publications/frames/science.html>).

STOCKS NOT CURRENTLY UNDER FISHING MORATORIA

Div. 3M Cod

84. *Total Biomass and Abundance*: Model output estimates for total stock biomass and abundance show an increasing trend in recent years, with biomass increasing at a higher rate than abundance (Figure 22). However, the estimated levels of biomass and abundance are well below those in the first years of the assessment.



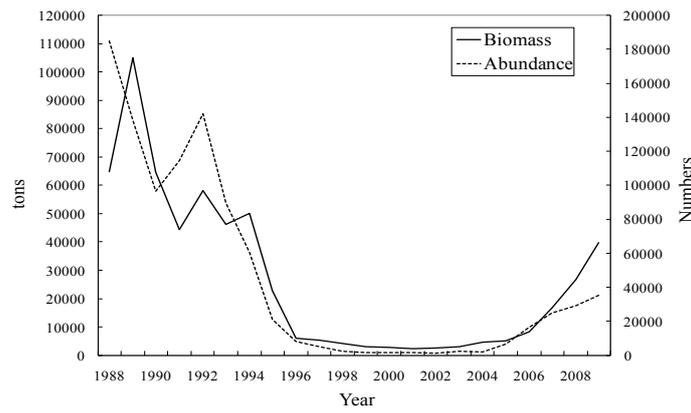


Figure 22. Div. 3M Cod biomass & abundance (1988-2010).

85. *SSB*: Spawning Stock Biomass (*SSB*) has increased steadily from 2004 with the largest increases occurring during 2009 and 2010 (Figure 23). The large increase in the past three years is attributable to four reasonably abundant year classes (2004-2007). An increased weight-at-age has also been observed in recent years along with a younger age-of-maturity. Recent *SSB* may reflect a lower reproductive potential than in the earlier time series.

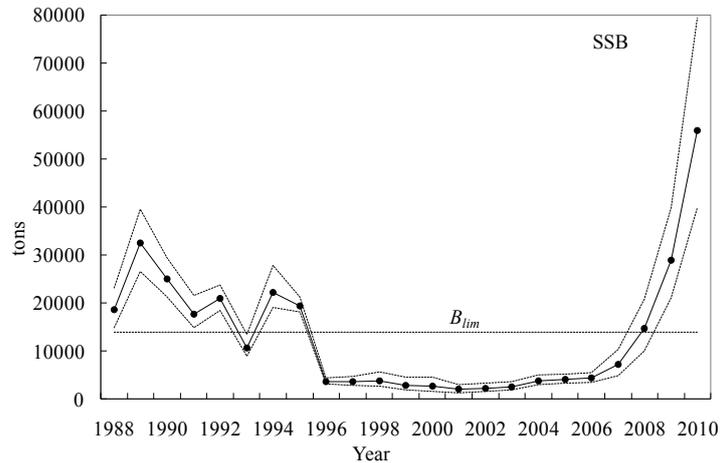


Figure 23. Div. 3M Cod *SSB* (1988-2010).

Subarea 2 + Div. 3KLMNO Greenland Halibut

86. The Subarea 2 + Div. 3KLMNO Greenland Halibut fishable biomass (age 5+) (Figure 24) declined to low levels in 1995 to 1997 as a result of very high catches and high fishing mortality (*F*).



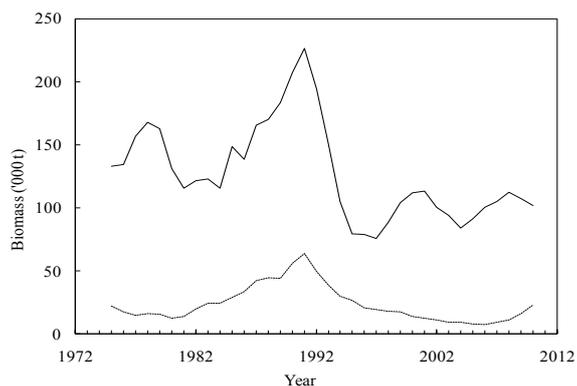


Figure 24. Assessments of Subarea 2 Div. 3KLMNO Greenland Halibut biomass (1972-2010). Solid line is for Age 5+ & dashed line for Age 10+.⁴⁴

87. The stock biomass increased for 1998 to 2000 due to greatly reduced catches, much lower fishing mortality and improved recruitment. It also increased between 2004 and 2008 with decreasing fishing mortality.
88. However, the Subarea 2 + Div. 3KLMNO Greenland Halibut biomass decreased between 2008 and 2010, as weaker year-classes were recruited. *An Extended Survival Analysis* (XSA) derived estimates for 2010 survivors were used to compute the 2010 biomass, assuming that the 2010 stock weights equal the 2007 to 2009 average. The 2010 Age 5+ biomass is estimated to be about 102 000 t. The Age 10+ biomass peaked in 1991, and although it remains well below that peak, it grew threefold in the period 2006 to 2010.

Subarea 2 & Div. 1F+3K Redfish

89. Assessments of Subarea 2 and Div. 1F+3K Redfish are undertaken by ICES and were not considered by the PRP.

Div. 3LN Redfish

90. The relative biomass of Div. 3LN Redfish was at, or slightly above, B_{msy} prior to 1974 and between 1981 and 1987 (Figure 25). On average, catches were just below MSY prior to 1986. Between 1986 and 1992 catches of Div. 3LN Redfish exceeded MSY , with the autumn biomass at B_{msy} in 1987 falling to 24% B_{msy} in 1994, when a minimum stock size was recorded. Under the moratorium (1998+), biomass has increased and is now well above B_{msy} .

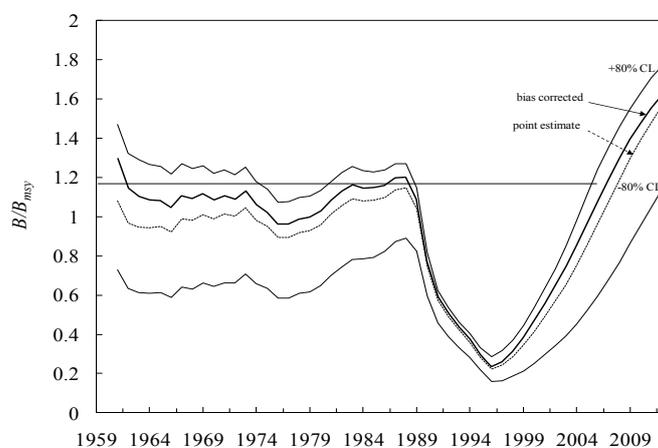


Figure 25 Div. 3LN Redfish B/B_{msy} (1959-2010)⁴⁵.

⁴⁴ Estimated exploitable biomass from XSA (Extended Survival Analysis).



Div. 3M Redfish

91. The Div. 3M Redfish fishable biomass and abundance declined sharply between 1989 and 1996 (Figure 26). The overall biomass grew slowly between 1998 and 2003, with the rate of growth increasing markedly from 2003 onwards. Such growth was basically supported by the 1989 and 1990 year-class cohorts, with the biomass of the incoming weak year classes being reflected between 1991 and 1997 by low stock levels which nevertheless survived at much better higher levels than in preceding years.

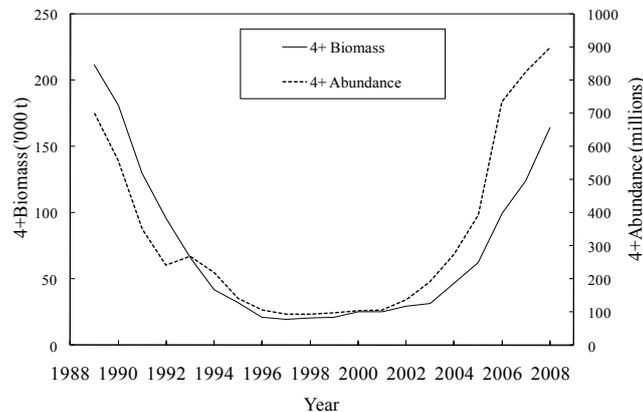


Figure 26. Div. 3M Redfish biomass & abundance (1988-2010).⁴⁶

92. In the most recent years, the Div. 3M Redfish stock biomass has increased more rapidly, reaching a level only surpassed in 1989 and 1990. Female SSB has grown continuously since 1998 and has now reached the levels of the early 1990s.

Div. 3O Redfish

93. Canadian spring survey estimates of Div. 3O Redfish stock biomass have been stable since 2004, with autumn survey estimates increasing continuously since 2003 (Figure 27). Both these seasonal indices are currently at, or slightly above, the overall time-series average.

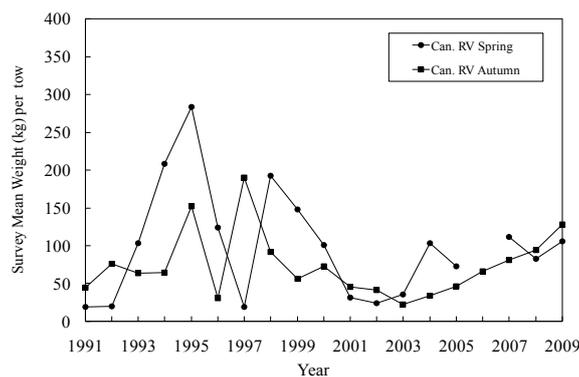


Figure 27. Div. 3O Redfish biomass indices from Canadian spring & autumn surveys (1991-2009).

Div. 3LNO Thorny Skate

94. Thorny skate on the Grand Banks was first assessed by Canada, for the stock unit 3LNOPs. Subsequent Canadian assessments also provided advice for Div. 3LNOPs. However, Subdivision 3Ps is presently managed as a separate unit by Canada, and Div. 3LNO is managed by NAFO.

⁴⁵ Retrospective B/B_{msy} from ASPIC fit 2010-2007.

⁴⁶ Trends from XSA (Extended Survival Analysis).



95. The Div. 3LNOPs Thorny Skate biomass indices from Canadian spring surveys increased from 1985 and 1988, before declining rapidly until 1990 (Figure 28). A slight increase followed between 1990 and 1991. A steady biomass decline from 1991 leveled out a low level from 1996 onwards.
96. The spring Campelen series also indicates that the Div. 3LNOPs Thorny Skate biomass has been at a consistently low level from 1996 onwards (Figure 29, Figure 30). These surveys were conducted in the NAFO Regulatory Area portion of Div. 3NO while the Canadian survey covered all of Div. 3NO. The biomass trajectory from the Campelen surveys was very similar to that of the Canadian spring survey until recently.
97. In recent years the biomass index has been lower than that observed during 2004-2006 (Figure 30).

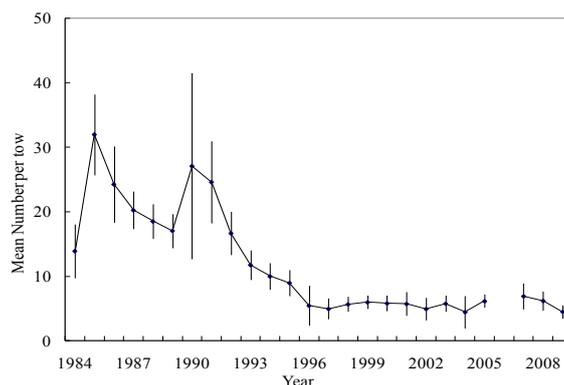


Figure 28. Div. 3LNOPs Thorny Skate mean number per tow index (1984-2009) from Canadian spring surveys.

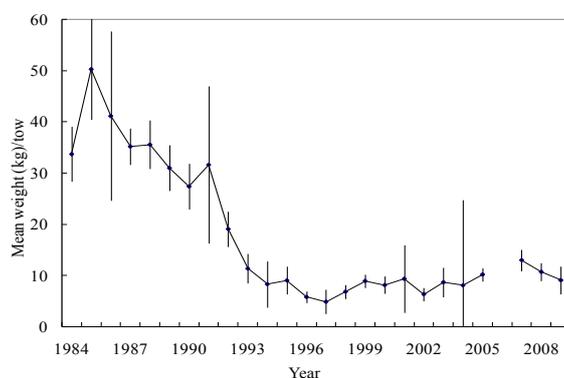


Figure 29. Div. 3LNOPs Thorny Skate mean weight (kg) per tow index (1984-2009) from Campelen spring surveys.

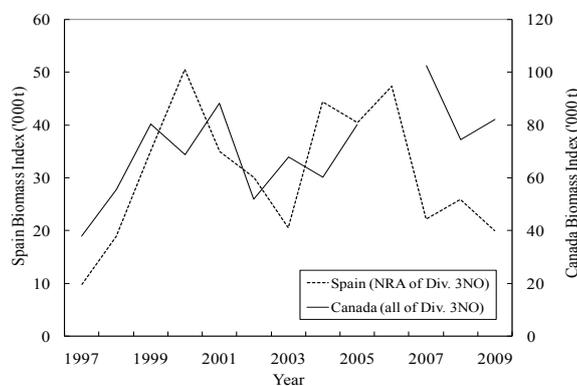


Figure 30. Comparison of Div. 3NO Thorny Skate Canadian and Campelen/ Spanish biomass indices from spring surveys (1997-2009).



Div. 3LNO Yellowtail Flounder

98. Biomass estimates for Div. 3LNO Yellowtail Flounder from survey data have been relatively high since 2000. The relative biomass estimated from the production model used by NAFO has been increasing since 1994 (Figure 31). It is estimated to be above the B_{msy} level post-1999, and was 1.6 B_{msy} in 2009.

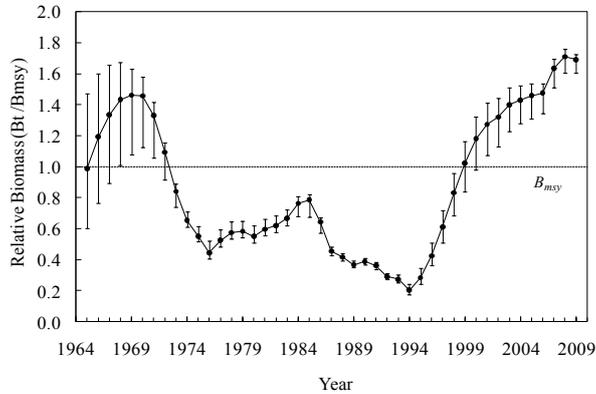


Figure 31. Div. 3LNO Yellowtail Flounder relative biomass (1964-2010).

Div. 3NO White Hake

99. The stock area, defined by Scientific Council as Div. 3NOPs, is mainly concentrated in southern Subdiv. 3Ps and on the southwestern Grand Bank. Scientific Council is asked to provide advice on the portion of the stock in Div. 3NO only.

100. The Div. 3NOPs White Hake stock biomass increased in 2000 as a result of the large 1999 year-class (Figure 32). Subsequently, the biomass index declined to levels comparable to those observed during the Canadian Campelen 1996-1998 time series.

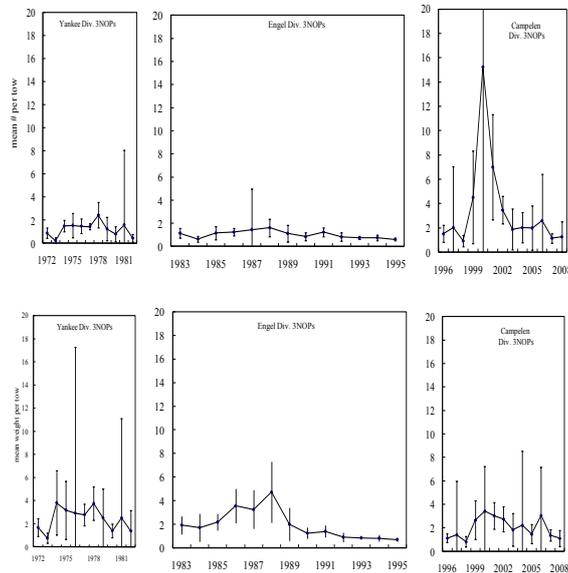


Figure 32. Div. 3NOPs White hake relative biomass (1964-2010).⁴⁷

⁴⁷ mean number (top) and mean weight per tow. Yankee, Engel and Campelen time series not standardized and are presented on separate panels.



SA3+4 Squid

101. Relative biomass indices from 4VWX Squid surveys were highest between 1976 and 1981, average 12.6 kg/tow (Figure 33). These indicated a period of high productivity. Between 1982 and 2008, the average relative biomass index was much lower at 3.0 kg/tow, indicating a low productivity period. In 2009, the relative biomass index (6.0 kg/tow) from the June Div. 4VWX Squid survey was close to the 1982 to 2008 average for the low productivity period.

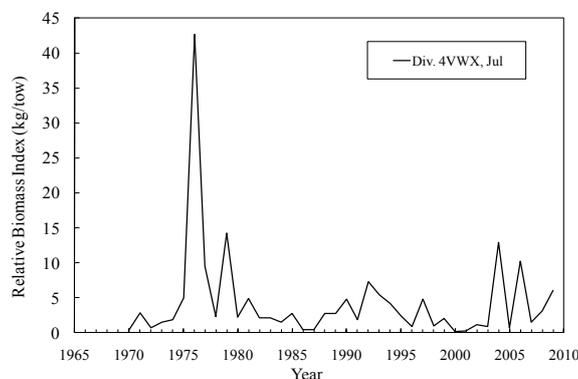


Figure 33. Relative SA3+4 Squid biomass indices (kg/tow) from 4VWX July surveys (1965-2010).

STOCKS CURRENTLY UNDER FISHING MORATORIA

Div. 2J+3KL Cod

102. The Scientific Council has provided no advice on Div. 2J+3KL Cod since 2004. The most recent advice on the stock's status was provided by the Council in 2002 (SC Rep., 2002/2003, p. 180-181 (NAFO, 2003c). This indicated that based on the 2002 offshore autumn bottoms surveys, the 2J+3KL Cod total biomass index remained extremely low, at only 2% of the 1980s average. A spawning biomass index computed from the same surveys and commercial weights-at-age remained at less than 2% of the 1980s' biomass average. Furthermore, the total biomass index from the spring bottom-trawl survey in Div. 3L was less than 1% of the 1980s average.
103. Virtual population analyses, to inshore fish alone for the first time, indicated that the exploitable (4+) biomass increased from 1995 to a peak in 1996 and subsequently declined to a low level in 2002, with only a small subsequent increase being observed in 2003. The spawning biomass increased from 1995 to a peak of 41 000 t in 1998, and subsequently declined to 14 000 t at the beginning of 2003.

Div. 3NO Cod

104. The Div. 3NO Cod biomass and SSB remain low (Figure 34), but are estimated to be at their highest levels since 1992.



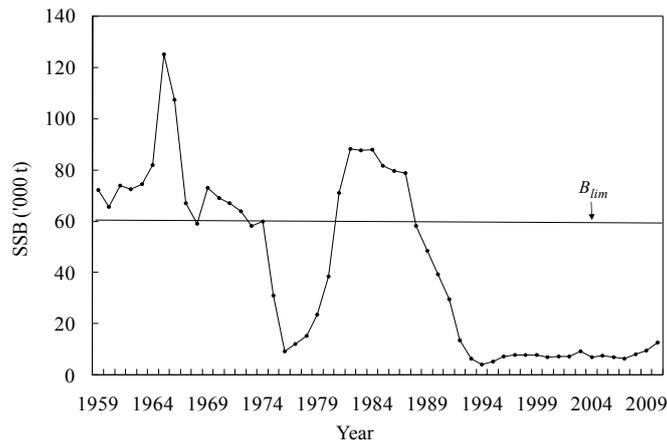


Figure 34. Div. 3NO Cod SSB (1959-2010).

Div. 3M American Plaice

105. Division 3M American Plaice stock biomass and SSB are at very low levels. There has been no sign of any stock recovery, probably largely due to a consistent year-to-year recruitment failure for the 1991 to 2005 year-classes (Figure 35).

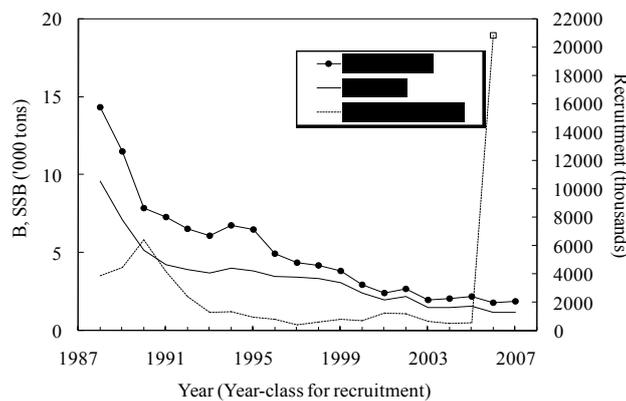


Figure 35. Div. 3M American Plaice biomass/SSB & recruitment (1987-2008).

Div. 3LNO American Plaice

106. Both Div. 3LNO American Plaice biomass and SSB are very low compared to historic levels (Figure 36). SSB declined to the lowest estimated level in 1994 and 1995. SSB has been increasing since 1995 and currently stands at 33 000 t. The B_{lim} for Div. 3LNO American Plaice is currently 50 000 t.

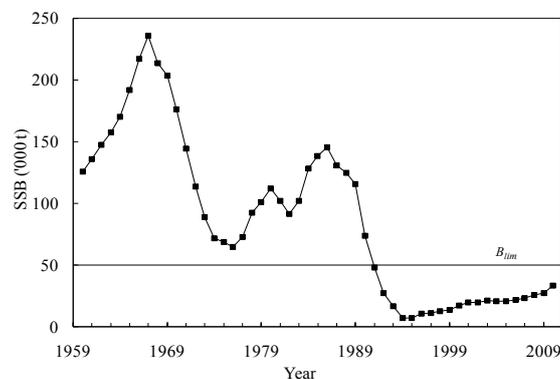


Figure 36. Div. 3LNO American Plaice spawning stock biomass & B_{lim} from VPA (1959-2010).



Div. 2J+3KL Witch Flounder

107. Survey-based estimates of the Div. 2J+3KL Witch Flounder mean weight (kg) per tow index have indicated a steep downward trend in the mid-to-late 1980s (Figure 37). Since 1995 such estimates have remained at very low levels. However, a slightly increasing trend in the total stock survey biomass index has been observed since 2003.

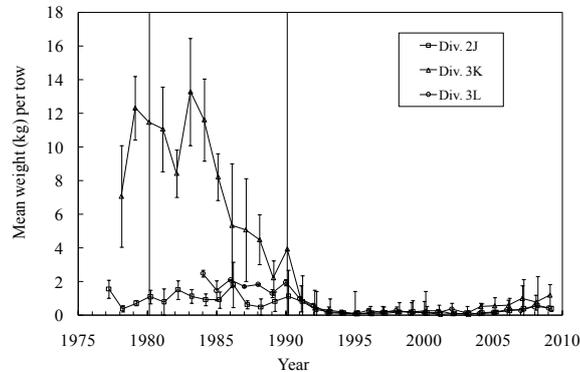


Figure 37. Div. 2J+3KL Witch Flounder mean weight (kg) per tow index (1975-2010).

Div. 3NO Witch Flounder

108. Mean weights (kg) per tow for 3NO Witch Flounder from Canadian springtime surveys indicate no clear trend since 1990 (Figure 38). The stock level remains low compared to the 1980s.

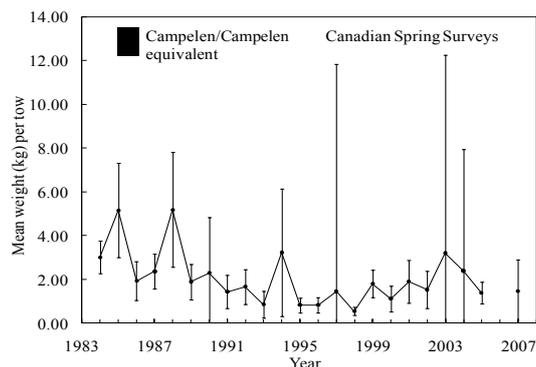


Figure 38. Div. 3NO Witch Flounder mean weight (kg) per tow index (1983-2008) from Canadian spring surveys. The Campelen survey equivalents are also shown.

Div. 3NO Capelin

109. No assessment information is available for the Div. 3NO Capelin stock.

Div. 3M Shrimp

110. The female Div. 3M Shrimp survey biomass index was high from 1998 to 2007 then declined to very low levels in 2009 and 2010 (Figure 39). The Div. 3M Shrimp biomass index was generally & significantly higher than B_{lim} .



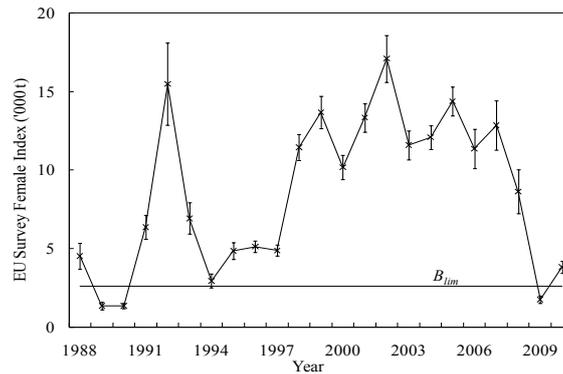


Figure 39. Div. 3M Shrimp biomass indices ('000 t) for female animals in spring and autumn (1988-2010).

Div. 3LNO Shrimp

111. Female Div. 3LNO Shrimp biomass indices in spring and autumn generally increased until 2007 (Figure 40). The indices then decreased substantially until 2009 with a slight increase in 2010. However, the 2010 spring biomass index remained low.

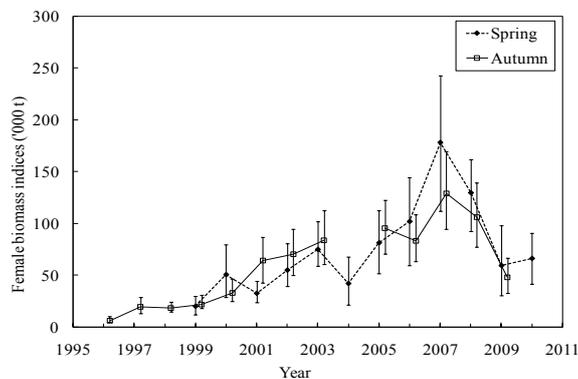


Figure 40. Div. 3LNO Shrimp biomass indices estimates ('000 t) for female animals in spring and autumn (1995-2010).

Performance Review Panel Assessment and Recommendations:

- The Panel suggested that NAFO should consider enhancing its application of risk-based assessment approaches (e.g. the *Greenland Halibut Management Strategy Evaluation* and *Kobe Matrix*) when evaluating management strategies.

4.2.3. Status of species belonging to same ecosystem as, or associated with or dependent upon, targeted marine living resources

112. NAFO does not currently possess specific information on the status of species⁴⁸ belonging to same ecosystem as, or associated with, or dependent upon, targeted marine living resources. Over the years, the Scientific Council has received various requests to provide advice on non-managed, but potentially harvestable, species (i.e. elasmobranchs, spiny/black dogfish, white hake⁴⁹, roundnose/roughhead grenadiers and others). Considering bycatch requirements is also an integral part of NAFO's management approach⁵⁰ for targeted fishery resources, including consideration of the

⁴⁸ Henceforth referred to as 'associated, dependent and related species'.

⁴⁹ Before it became a target/managed species.

⁵⁰ The details of this approach are outlined in Article 12 of the [NAFO Conservation and Enforcement Measures \(NCEM\)](#) (NAFO, 2011a).



impacts of harvesting on dependent and related species. Current NAFO bycatch requirements are essentially limited to provisions dealing with catch retention, single haul bycatch limits and directed fishery conditions outlined in Chapter I Article 12 of the NCEM. Article 13 (3) links specific gear requirements to bycatch provisions provided that directed fishing is conducted on species other than those listed in Article 13(1)⁵¹, and for which the bycatch provisions of Article 12 (1)(a) do not apply. The provisions of Article 62 (Daily Reports) and Annex X (Format for Communication of Catches and Reports by Fishing Vessels) of NCEM Chapter VII (Electronic Reporting, Satellite Tracking and Observers) mandate the reporting of bycatch species retained on board, as a subset of targeted species, and the amount of fish⁵² discarded. In the absence of a consolidated list of bycatch species in the NCEM other than those identified in Article 12.(1), there is likely to be inter-relational confusion in linking the various bycatch provisions with effective monitoring, and reporting, of bycatch during directed fishing.

113. NAFO does not have any specific strategy, or associated monitoring process, in place to assess, or mitigate, fishery interactions with non-fish species (e.g. seabirds) that result in an incidental bycatch. However, there is a NAFO Resolution in place to reduce turtle mortality (Resolution 1/06) ([FC Doc. 06/7](#) (NAFO, 2006d)). Measures have also been put in place concerning shark conservation and the prohibition of shark finning ([FC Doc. 05/8](#) (NAFO, 2005d)).
114. Various initiatives are underway to address the status of associated, dependent and related species more specifically. These include:
- Work by the NAFO *Scientific Council Working Group on the Ecosystem Approach to Fisheries Management* (WGEAFM). This WG has prepared an ecosystem summary for the Newfoundland-Labrador fish community and the Flemish Cap fish community ([SCS Doc. 10/19](#), p. 35 and 44 (NAFO, 2010r)). The WGEAFM continues work on ecosystem delineation ([NAFO SCS Doc. 10/24](#) (NAFO, 2010t));
 - Multidisciplinary, cooperative research by some NAFO Contracting Parties in 2009 and 2010 on sensitive habitats and fishing activities, including analysis of fisheries resources and protection of vulnerable marine ecosystems. The NEREIDA (*NAFO PotEntial VulneRable Marine Ecosystems-Impacts of Deep-Sea Fisheries*) Expedition was a key exercise and some of the research results have already been reported ([SCS Doc. 10/19](#), p. 20 (NAFO, 2010r));
 - NAFO's enduring interest in seal-fishery interactions, most recently in 2009 ([SC Rep. 2009](#), p. 43 (NAFO, 2010e)). The 2010 WGEAFM report provides a synopsis of marine mammal status in the NAFO *Convention Area* ([SCS Doc. 10/19](#), p. 52 (NAFO, 2010r))⁶. The Scientific Council has also hosted a symposium on the *Role of Marine Mammals in the Ecosystem* (2009) ([SC Rep. 2009](#), p. 71(NAFO, 2010e)). Numerous papers in the *NAFO Journal of Northwest Atlantic Fishery Science* (JNAFS, 2011a) and *NAFO Scientific Council Studies* (NAFO, 2011q) present research results on these topics;
 - Other recent NAFO symposia include: (a) Environmental and Ecosystem Histories in the Northwest Atlantic- What Influences Living Marine Resources?, held in September 2006; and (b) The Ecosystem of the Flemish Cap, held in September 2004. A symposium on Elasmobranch Fisheries was held in 2002 prior to NAFO managing Div. 3LNO Skate;
 - NAFO acknowledgement that Capelin is an important part of the ecosystem and that the species should remain under moratorium until 2012 ([NCEM](#) (NAFO, 2011a) and [SC Rep. 2009](#), p.23 (NAFO, 2010e), and
 - WGEAFM development of a '*Roadmap to the EAF*' (Section 4.3, paragraphs 113-121) ([SCS Doc. 10/19](#), p. 75; NAFO, 2010r) which was endorsed by the Council in June 2010 ([SC Rep. 2010](#), p. 63-67 (NAFO, 2011b)).

⁵¹ These species are: Shrimp; Northern Shortfinned Squid (*Illex*); Skate; Groundfish; Subarea 2, Div. 1F + 3K Oceanic Redfish (*Sebastes mentella*); mid-water trawl caught Div. 3O Redfish.

⁵² Unspecified by species.



115. Further discussion of NAFO's approach to managing potential harvesting impacts more generally is provided in Sections 4.3, 4.5, 4.6.4 and 4.6.5⁵³.

Performance Review Panel Assessment and Recommendations:

1. **Without a specific strategy in place to monitor the status of species belonging to the same ecosystem, or associated with or dependent upon, targeted marine living resources (also see discussion under Section 4.3 below), no specific information is currently available to evaluate the present status of such species;**
2. **The inclusion of a consolidated list of bycatch species in the NCEM would assist monitoring of bycatch during directed fishing [PARA 36];**
3. **The PRP notes that the absence of a NAFO policy⁵⁴ (including reporting and monitoring arrangements) to address incidental bycatch of both non-target species, and those incidentally affected by fishing operations, constitutes a serious shortcoming in the Organization's attempts to address the requirements of Article 5 of UNFSA;**
4. **Although relevant results are beginning to appear, considerable work remains to be done by NAFO to accrue information on the potential linkages between harvested and other species belonging to the same ecosystem, or dependent, or related species, as well as in the development of ways to monitor such information for management purposes, and**
5. **NAFO is encouraged to urgently consolidate its policy to address ecosystem management considerations along the lines suggested in item 4.2.4, below⁵⁵, and Sections 4.3 and 4.6.4.**

4.2.4. Trends in the status of associated, dependent and related marine living resources

116. No consolidated information is currently available to evaluate trends in the status of dependent and associated species specifically.

Performance Review Panel Assessment and Recommendations:

1. **All the views outlined in Section 4.2.3 are relevant here, and special consideration should be given as to how to consolidate information necessary for evaluating trends in the status of dependent, related and associated species specifically.**

4.3. The Ecosystem Approach in NAFO

117. In regard to by-catch and discards, both the observer program, Article 28(4) (ii) and Article 63 of the NCEM, on *Data Collection/Compilation/Analysis*, establish the obligation to monitor and report bycatch percentages and discard rates.

118. Since 1980, several measures aimed at limiting bycatch of target species under moratorium ([NAFO CEM](#) (NAFO, 2011d)) or catch limits generally have been adopted (e.g. NCEM Article 12). Gear

⁵³ These include interim encounter protocols (NCEM Article 5bis) to mitigate the potentially harmful effects of encounters by fishing gear with Vulnerable Marine Ecosystem (VME) indicator species such as coral and sponges.

⁵⁴ Such as the clear species-specific bycatch management and mitigation measures adopted by CCAMLR.

⁵⁵ Such as the *CCAMLR Ecosystem Monitoring Programme* (CEMP) and associated initiatives to develop scientifically rigorous decision-making systems for key ecosystem components along the lines of the MSE for Greenland Halibut.



selectivity has also been addressed through minimum mesh size requirements for selected species (NCEM Article 13(1)).

119. Also, as mentioned (section 4.2.3, above), a prohibition on shark finning entered into force, in 2006. NAFO Contracting Parties are prohibited from having shark fins onboard that exceed 5% of the weight of sharks carried aboard ([FC Doc. 05/8](#) (NAFO, 2005d) Report of the FC Meeting, September, 2005, Annex 11; Article 17 of the NCEM) until the first point of landing. Measures devoted to reduce sea-turtle mortality were adopted in 2006 and entered into force in 2007 (Resolution 1/06: [FC Doc. 06/7](#) (NAFO, 2006d)).
120. Amongst the initiatives outlined above (see summary in Appendix VIII), the most notable development in giving substance to NAFO's EAF has been the Organization's response to the 2007 *United Nations General Assembly Resolution 61/105*. To implement the provisions of *UNGA Resolution 61/105*, NAFO:
- The FC held an intercessional meeting in May 2008 on Vulnerable Marine Ecosystems, where the Working Group of Fishery Managers and Scientists on Vulnerable Marine Ecosystems (WGFMS) was created, initially in an ad-hoc capacity ([Meeting Proceedings, 2007-2008](#), Section III (NAFO, 2008b))⁵⁶;
 - The WGFMS met formally for the first time in September 2008. The key items discussed included criteria from the FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas, risk assessments and mitigation measures to avoid Significant Adverse Impacts on VMEs. The meeting concluded with recommendations refining encounter provisions, threshold quantities for corals/sponges, and outlining an Exploratory Protocol for New Fishing Areas ([FC Doc. 08/8](#) (NAFO, 2008e)). At its 2008 Annual Meeting, the Fisheries Commission (FC) subsequently adopted the Preliminary Assessment of the Risk of Significant Adverse Impact (SAI) of Fishing Activities in the NAFO Regulatory Area. This entailed:
 - Extending current seamount measures (including for the Fogo Seamounts);
 - Adopting an Interim Exploratory Fishery Protocol; and
 - Adopting an *Interim Encounter Provisions for Deep-Sea VMEs* in both fished and unfished areas of the NAFO Regulatory Area (NRA).
 - At its 2009 Annual Meeting, the FC adopted updated conservation and enforcement measures for VMEs ([Meeting Proceedings 2009-2010](#), Section III (NAFO, 2010c)) to address:
 - Protecting significant coral concentrations; ([FC Doc. 09/11](#) (NAFO, 2009d))
 - Protecting significant sponge concentrations; ([FC Doc. 09/12](#) (NAFO, 2009e))
 - VME encounter provisions ([FC Doc. 09/13](#) (NAFO, 2009f)); and
 - An Exploratory Data Collection Form. ([FC Doc. 09/14](#) (NAFO, 2009g)).
 - At its 2010 Annual Meeting, the Fisheries Commission adopted updated conservation and enforcement measures for VMEs to:
 - Provide maps of the existing fishing ('footprint') (i.e. fishing areas) in the NAFO Regulatory Area (RA) ([FC Doc. 09/20](#) (NAFO, 2009h), [Meeting Proceedings, 2009-10](#), Section III (NAFO, 2010c))
 - Revise Article 4bis of the NCEM on Assessment of Bottom Fishing ; ([FC Doc. 10/14](#) (NAFO, 2010k))
 - Revise the Exploratory Fishery Data Collection Form ([FC Doc. 10/27](#), Annex I (NAFO 2010p)); and

⁵⁶ The FC subsequently revoked the WGFMS' *ad hoc* nature and gave it renewed terms of reference. The main objectives of the WG are to make recommendations to the FC on effective implementation of measures to prevent significant adverse impacts on VME (vulnerable marine ecosystems). ([FC Doc. 10/15](#) (NAFO, 2010m)).



- Revise Article 5bis of the NCEM dealing with VME encounter provisions. ([FC Doc. 10/27](#), Annex II (NAFO 2010p)).
121. As noted in Section 4.2.3 above, the Scientific Council is also developing a ‘Roadmap to the EAF’. This is likely to play an important role in ensuring that the conditions of the general principle are met. The Scientific Council’s EAF Roadmap ([SCS Doc. 10/19](#), pp. 75-81 (NAFO, 2010r)) identifies the need for integrated ecosystem assessments (IEA) as essential counterparts to stock assessment currently used in the support of single-species management. IEAs are seen to serve as: (a) a ‘tool’ using integrated analysis and ecosystem modelling for synthesis, (b) a product for managers and stakeholders to use in scientifically-advise policy and decision making, and (c) a process for identifying management objectives, developing quantitative ecosystem assessment as well as for evaluating alternative management strategies. They are effectively a supplement to single-species and/or single sector management. Under the Roadmap, IEAs are seen to highlight potential conflicts among human activities such as fishing, as well as potential inconsistencies between human goals and ecosystem status and/or processes.
122. The Scientific Council’s EAF Roadmap also highlights a number of steps⁵⁷ required to develop an IEA. It sees that an explicit and pragmatic relationship can be identified between the application of an IEA and the steps for implementing Ecosystem Based Management (EBM) (and ultimately a fully integrated EAF) for any spatially-defined marine ecosystem subject to fisheries management (Figure 41).
123. Putting the various considerations identified in Figure 41 into effect, the *Roadmap* has outlined steps to define spatial management units, defined ecosystem state and function processes, and emphasized the evolutionary utilization of appropriate management tools. In a practical sense, NAFO has activated its EAF in a number of ways. Key developments are described below.
124. To summarize, and pursuant to paragraphs 80 to 83 of the *Resolution*, NAFO has adopted several measures to protect vulnerable marine ecosystems (VME), including the closure of 6 seamounts (Article 15 (2) of the NCEM) and 12 areas containing significant concentration of corals and sponges⁵⁸ (Article 16 (3)). NAFO has also banned all bottom fishing activities in a large section of Division 30 (Article 16 (1)) to mitigate the impact of gear coming into contact with the sea bottom (Figure 42).
125. Finally, and in spite of provisions outlined in Article 22 of the NCEM, NAFO has no measures in place to monitor, or collect information (including reporting procedures), on lost or discarded fishing gear.

⁵⁷ These comprise- scoping/identifying goals, developing ecosystem indicators, undertaking risk analyses, assessing ecosystem status against EBM goals and evaluating management strategies. Through adaptive management, the monitoring of ecosystem indicators and management effectiveness provide a ‘feedback’ mechanism affecting scoping.

⁵⁸ Excluding national closures, the NAFO areas closed to bottom fishing amount to about 6% of the entire *Convention Area*.



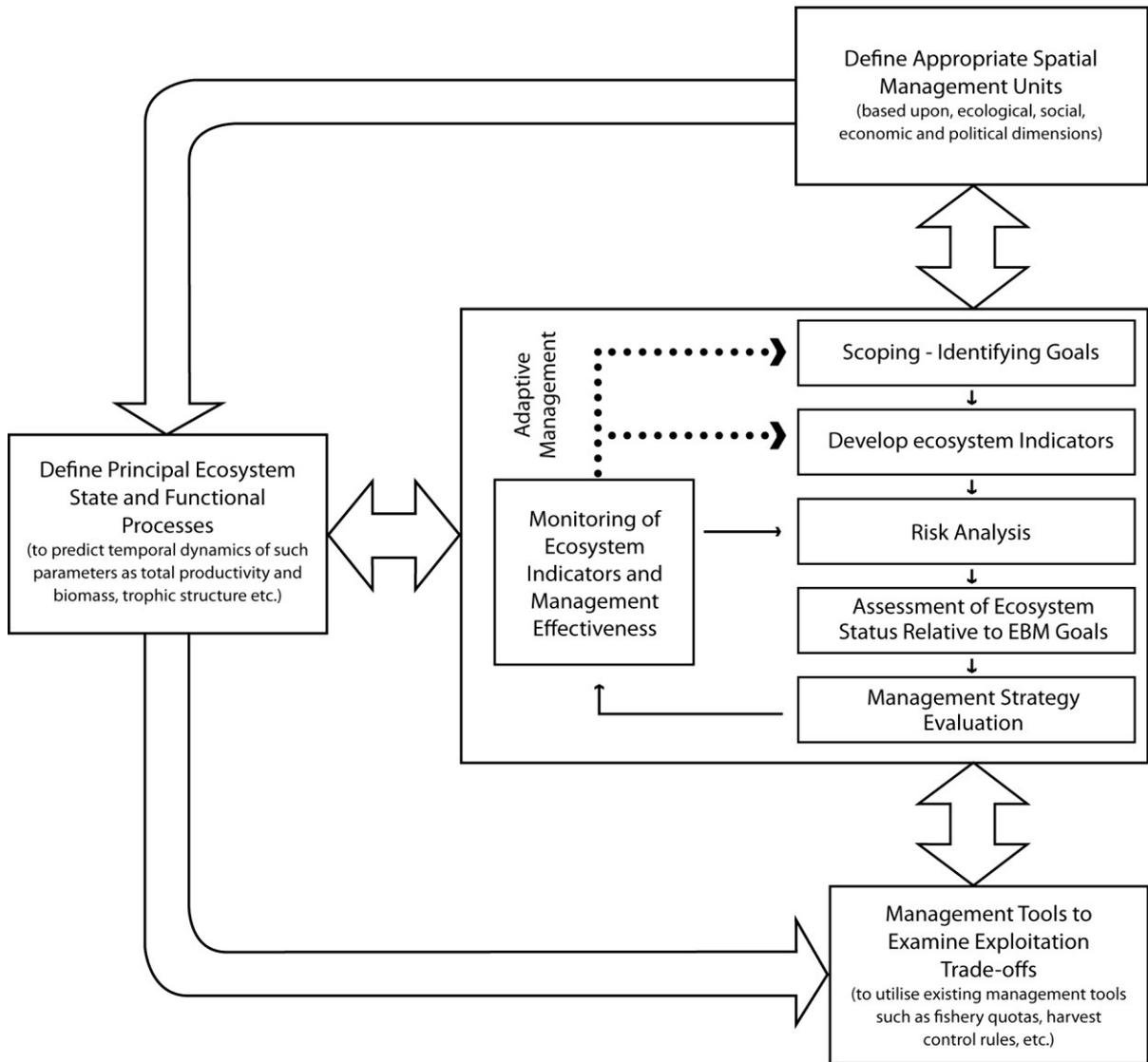


Figure 41. Relationship between three practical steps for moving towards an NAFO EAF (outside boxes) and steps required to deliver holistic integrated IEAs (centre box).



NAFO's Vulnerable Marine Ecosystem (VME) Closures and Fishing Footprint Area

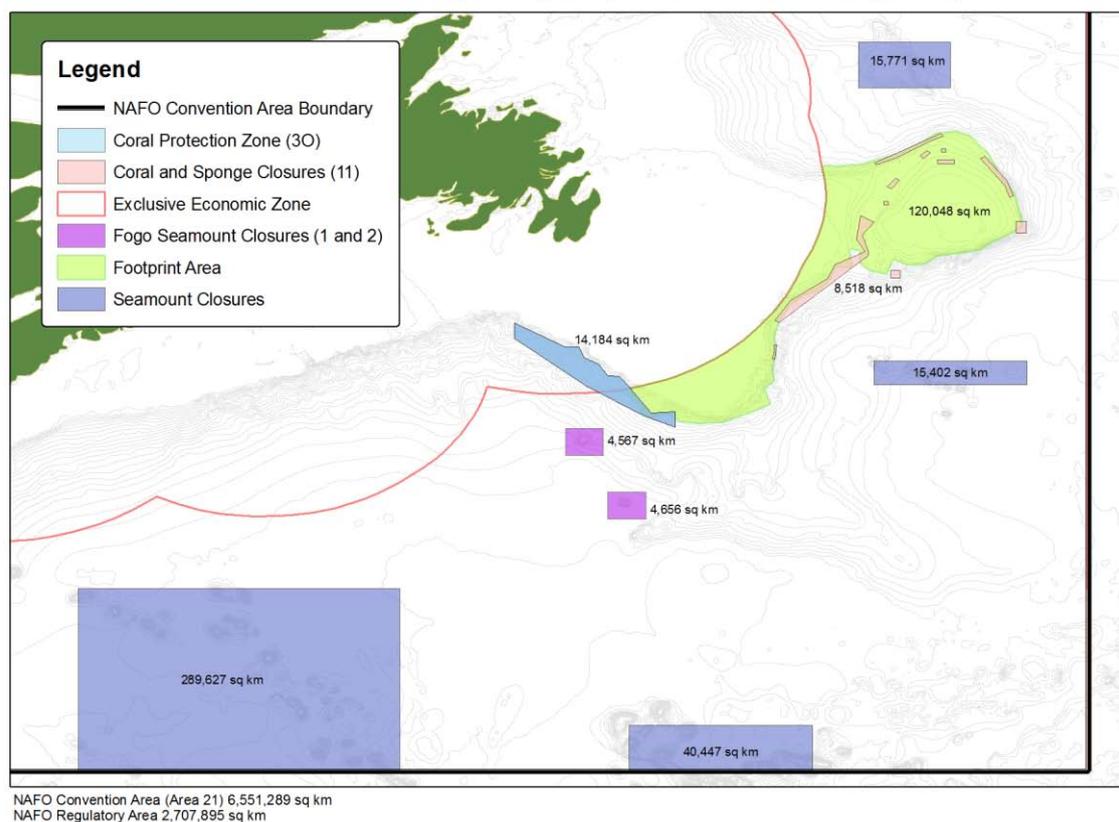


Figure 42. NAFO's Vulnerable Marine Ecosystem (VME) closures and fishing footprint area.

Performance Review Panel Assessment and Recommendations:

1. The PRP notes a definitional concern in respect to the NAFO shark conservation and finning provisions. In this context, failure to clearly indicate if 'shark weight' refers to green or processed weight may result in different application of the amount (5% by weight of all shark onboard) of shark fins permitted aboard a fishing vessel. It is recommended that this apparent discrepancy is clarified, recognizing that no directed shark fishing is undertaken by NAFO Contracting Parties and that the by-catch of shark in the NAFO Regulatory Area is limited in the trawl fisheries.
2. The PRP noted that the 1978 NAFO Convention essentially remains silent on addressing concerns attached to an EAF- based management approach⁵⁹. However, as outlined in the Amended Convention, the PRP notes that NAFO's EAF has recently been better aligned with the various requirements of the 1995 [FAO Code of Conduct for Responsible Fisheries](#) [FAO, 1995] and the 2003 [FAO Ecosystem Approach to Fisheries](#) [FAO, 2003].
3. In particular, NAFO is to be commended for its policy and the adoption of measures in addressing the various provisions of UNGA Resolution 61/105 relating to bottom fishing.

⁵⁹ Although one of the functions of the *Scientific Council* under the *Current Convention* (Article VI.(1).(b)) outlines the Council's responsibility to provide information on "pertaining to the fisheries in the Convention Area, including environmental and ecological factors affecting these fisheries".



4. All areas which the Scientific Council has considered to be vulnerable, are now closed as depicted in Figure 42. The closed proportions amount to 6% of the NAFO Convention Area of 6.6 million km², 14% of the NAFO Regulatory Area of 2.7 million km², and 5% of the Existing Bottom Fishing Area of 0.1 million km².
5. Delays in UNFSA's entry into force have not impeded NAFO's progress⁶⁰ in addressing the essential precautionary elements highlighted in Article 6 of the *Agreement* (Section 4.6.2). Consequently, the Organization may be seen to be truly attempting to advance its strategy in implementing an encompassing EAF that provides the necessary level of precautionary consideration to all elements of the ecosystem in the NAFO Area⁶¹.
6. Most notably, the PRP recommends that NAFO give consideration to augmenting its efforts to implement a more EAF-friendly management approach, the PAF (see PRP views in Section 4.6.2) should be more widely embraced by the Fisheries Commission. For example, and as highlighted by the [Chatham House High-Level Panel on Recommended Best Practices for Regional Fisheries Management Organizations](#) (Lodge *et al.*, 2007) if bycatch continues to be a problem then NAFO ecosystem-based management and its EAF may fall short of best practice. The adoption of a rebuilding plan for Greenland Halibut in 2003/04 (Article 6 of the NCEM), Div. 3NO Cod, in 2009, American Plaice in Div. 3LNO, in 2011, are major steps, given that 8 out of 19 NAFO-managed stocks are currently under moratoria.
7. Taking the above together, the PRP eagerly awaits development, and consolidation, of the Scientific Council's *EAF Roadmap* (paragraph 46). It encourages NAFO as a whole to give strategic consideration as to how the *Roadmap* may assume a more holistic focus so that it addresses more widely ecosystem components other than harvested, or associated, species alone (see PRP views in Section 4.2.3 above). In these terms, NAFO should focus on the sustainable use of the entire ecosystem for which it is responsible rather than just fishery-target species.
8. The PRP commends NAFO for its recent consideration of research required to move forward on developing Ecosystem Based Management (EBM) ([SC Reports 2010](#), pages 84-85, NAFO, 2011b). In particular, it welcomed consideration of ways to: (a) identify functional (causal) relationships underlying environment-stock associations (including climate change effects ([FC Doc. 10/29](#) (NAF, 2010d)), (b) incorporate more information on primary and secondary production into stock assessments, and (c) evaluate the importance of environmental effects in relation to fishing and natural mortality.
9. The PRP noted that the absence of any requirement to report lost, or abandoned, fishing gear could impede NAFO's efforts to assess the extent of such loss or abandonment. In turn this would impede the Organization's ability to monitor the potential effects of lost gear on the marine environment in the Convention Area. In noting the requirement for NAFO to deal with lost or abandoned fishing gear, the PRP was of the view that further efforts should be made to introduce management measures to deal more widely with environmental protection issues⁶² (e.g.

⁶⁰ Such progress is also largely confined to harvested species (Section 4.6.2).

⁶¹ Notably, specific consideration has yet to be given to maintaining food-web function, including ensuring that sufficient prey are available for dependent species and to augment the protection of endangered species

⁶² For example, CCAMLR has a Conservation Measure (CM) in place (CM 26-01) to provide general environmental protection during fishing. A number Resolutions (Res.) also aim to reduce the risks of environmental damage by dealing with vessel safety (Res. 20/XXII, 23/XXIII, 29/XXVIII) and potential sources of pollution (28/XXVIII), such as ballast water. Available at: http://www.ccamlr.org/pu/e/e_pubs/cm/10-11/toc.htm.



pollution, discarding of packaging bands etc.) likely to arise from fishing activities in the NAFO Area.

- 10. The PRP noted that in defining appropriate spatial management units (Figure 41 and Figure 42), the *EAF Roadmap* strives to take account of social, economic and political dimensions.**
- 11. The Panel concluded that NAFO has sufficiently dealt with the ecosystem requirements contained in the relevant international instruments.**

4.4. Data collection and sharing

4.4.1. NAFO agreed formats and data submission specifications

Background

126. A large amount of the data used by NAFO, especially by the Scientific Council in undertaking assessment, comprises catch, effort and biological data for commercially-exploited and assessed stocks. NAFO uses the data irrespective of whether they are from straddling stocks, or from stocks confined within the NAFO REGULATORY AREA. In this regard, NAFO has the remit for the official fisheries statistics for FAO area STATLANT 21. Flag States fishing in FAO Statistical Area 21 (geographically identical to the NAFO Convention Area) submit annually two forms of STATLANT to the NAFO Secretariat: 21A and 21B.

Catch and Effort Data (STATLANT 21) (Appendix IX):

127. Provisional commercial catch data ('landings') for the preceding calendar year are submitted to NAFO. Such data are received, validated, processed (if necessary) and archived by the NAFO Secretariat, *via* the STATLANT 21A system. The 21A fisheries data contain: total nominal weight of catch (metric tons) by species and by Division (e.g. NAFO Division 3M). Deadline for submission is May 1st for the statistics of the previous calendar year.
128. The data are submitted in the format agreed by the *FAO Coordinating Working Party on Fisheries Statistics (CWP)*.
129. Final catch (landings) and effort data for the preceding year are to be submitted to NAFO on STATLANT 21B Forms by 31 August each year. The 21B fisheries data contain much more detailed information: total nominal weight of catch and effort (e.g. fishing days, number of hooks, etc. where appropriate) by species, by month, and by Division, grouped according to target species, fishing gear, and vessel size. The instructions and reporting deadlines are clearly provided on these Forms (<http://nafo.int/fisheries/stats/21A.pdf> and <http://nafo.int/fisheries/stats/21B.pdf>).
130. The NAFO Secretariat archives and manages both the STATLANT 21A and STATLANT 21B databases. They are continuously updated as soon as new submissions are received. [Both sets of STATLANT](#) forms are available on the NAFO website (NAFO, 2011k). They are also available from FAO. The NAFO Website has been recently upgraded to facilitate the downloading of catch data. Metadata from other information (such as biological studies supporting assessments) are also compiled by the Secretariat and presented to Scientific Council (e.g. in 2010) ([SCS Doc. 10/20](#) (NAFO, 2010s)).
131. STATLANT 21A data are usually provided close to, or even at, the Scientific Council meeting, which is typically held in the first week of June. The Council changed the STATLANT 21A reporting deadline from 15 May to 1 May in 2005 for 2006 reporting ([SC Rep., 2005](#), p. 201 (NAFO, 2006b)) in an attempt to encourage earlier reporting. It also changed the reporting deadline for STATLANT 21B data from 30 June to 31 August for 2007 reporting ([SC Rep., 2006](#), p.78:(NAFO, 2007c)). The earlier deadline (May, 1st) for 21A submission was imposed to enable the scientists of the Scientific Council



to conduct stock assessment from the STATLANT material during the Annual June Meeting. However, over the past five years, one third of the STATLANT A data was submitted after the 1 May deadline. This occurred despite the clear need for such data to be taken into account in the Scientific Council stock assessments during June and in the absence of follow-up by STACFIS.

132. The non-compliance and untimely submission of STATLANT data is examined during NAFO Annual Meetings. Notwithstanding, both the NCEM and NAFO *Basic Texts* remain silent in respect to any consequences likely to arise from a failure to report data within the specified deadline(s) (e.g. within 10 days of a month-end). Table 8 and Table 9 show the most updated compliance status attached to the submission (not in respect of deadline) of STATLANT 21A and 21B data, respectively. The 21A fisheries data contain: total nominal weight of catch (t) by species and by Division (e.g. NAFO Division 3M). Deadline for submission is May 1st for the statistics of the previous calendar year.

Table 8. Submission of STATLANT 21A by Contracting Parties.

STATLANT 21A	2003	2004	2005	2006	2007	2008	2009
Canada	√	√	√	√	√	√	√
Cuba ¹	√	√	√	√	√	-	-
Denmark (in respect of Faroes and Greenland)	√	√	√	√	√	√	√
European Union	√	√	√	√	√	√	√
France (in respect of St. Pierre et Miquelon)	√	√	√	√	√	√	√
Japan	√	√	√	√	√	√	
Iceland	√	√	√	√	√	√	
Korea							
Norway	√	√	√	√	√	√	√
Russian Federation	√	√	√	√	√	√	√
Ukraine	√	√		√			
USA	√	√	√	√	√	√	-

¹ Did fish through chartering arrangements

Biological Data:

133. Prior to the Scientific Council's customary June Meeting, the Secretariat compiles a List of Biological Sampling Data. The List is circulated for use in the annual stock assessments. These data complement the STATLANT 21 data, which is publicly available, and other scientific data from the national research cruises which are reported annually by Contracting Parties.
134. The biological data are collected by scientists/ observers on commercial fishing vessels, largely during groundfish surveys. The formats for such data are described by [Doubleday \(1981\)](#). The Scientific Council (STACREC) is in the process of revising the Doubleday groundfish manual; a process which commenced in 2007.



Table 9. Submission of STATLANT 21B by Contracting Parties.

STATLANT 21B	2003	2004	2005	2006	2007	2008	2009
Canada	√	√	√	√	√	√	√
Cuba ¹	-	√	√	√	-	-	-
Denmark (in respect of Faroes and Greenland)	√	√	√	√	√	√	± ²
European Union	√	√	√	√	√	√	√
France (in respect of St. Pierre et Miquelon)	√	-	√	√	√	√	√
Japan	√	√	√	√	√	√	
Iceland	√	√	√	√	√		
Korea							
Norway	√	√	√	√	√	-	√
Russian Federation	√	√	√	√	√	√	√
Ukraine	√	√		√			
USA	-	-	-	-	-	-	-

¹ Did fish through chartering arrangements

² Missing STATLANT 21B data from Greenland

VMS:

135. The Secretariat also provides the Scientific Council with VMS data in summary, and aggregated, form to facilitate determination of fishing effort on, and around, vulnerable habitats or for any other designated purpose as requested by the Fisheries Commission. VMS data transmission formats are well defined and outlined in the NCEM (e.g. Chapter VII, Annex IX of NCEM, 2011). At present, the relatively short VMS data time-series has meant that these data are not used for stock assessment purposes. The VMS formats are evolving rapidly, along with the amount of catch data that is also transmitted.

Logbooks, Scientific Research and Survey Data:

136. Logbooks and the information contained therein are not submitted to NAFO, the Secretariat or the Scientific Council. Depending on the Contracting Party concerned, logbooks may, or may not, be made available to the designated experts (DEs). While logbooks are the most likely source of key STATLANT data, they remain the provenance of the Contracting Party concerned. At Scientific Council June meetings, scientific research and survey data from Contracting Parties are also made available by the respective delegates to the DEs.

137. Finally, the Secretariat provides the Scientific Council with *Monthly Provisional Catch Reports*⁶³ submitted by the Contracting Parties. The monthly provisional catch reports are submitted to the Secretariat independently of the STATLANT 21 submission. The reporting obligation on monthly provisional catches is described in Article 25 of the NCEM. The Monthly Provisional Catch reports are used to monitor quota uptake of Contracting Parties. The monthly deadlines of submission by Contracting Parties are not always complied. Every month the Secretariat dispatches the summary of catches based on the monthly submissions. However, before the next monthly deadline comes, Contracting Parties by then have already submitted the reports for the previous months. Updates are promptly provided on the NAFO Website when new submissions are received.

⁶³ The provisional monthly catch statistics is a compilation of catch statistics submitted by the Contracting Parties. The compilation is prepared by the Secretariat and circulated to Contracting Parties in accordance with the Article 25(2) of the NCEM.



138. NAFO Contracting Parties, Scientific Council Representatives and Designated Experts are also reminded by the Secretariat near the beginning of each year of their obligations to submit data. A similar reminder requests environmental data. Generally, the Secretariat does not circulate further reminder letters to NAFO Contracting Parties. However, in some cases informal contact is made with Contracting Party fishery statistics providers when submissions have not been received by the deadlines. The Scientific Council has requested a more involved Secretariat follow-up process in 2011.
139. NAFO has, therefore, a comprehensive system in place for the reporting and collection of fisheries data. This system generally conforms with that highlighted in Annex 1 of UNFSA. Data are also collected, compiled and exchanged in general accordance with the principles outlined in Article 2 of the Annex. NAFO data requirements for fishery data, vessel data and information, data reporting, data verification and data exchange are respectively, and largely, similar to the provisions of Articles 3 to 7 of UNFSA Annex 1.

Control and Enforcement Measures:

140. The NCEM does not specifically mention the reporting requirements for STATLANT data. However, it does for the provisional monthly catch statistics. The provisional monthly catch statistics⁶⁴ are not generally used by Scientific Council, but may assist the *SC Catch Assessment Working Group* in providing STACFIS catch estimates when STATLANT submissions are lacking.

Scientific Council Catch Estimation Process:

141. Since 2009, the Scientific Council's Catch Assessment Working Group (CAWG) has met a week prior to commencement of the June Scientific Council meeting to estimate catch levels to be used for in the scientific assessments. This allows the Council's Designated Experts (DEs) to begin their analyses prior to the Council meeting.
142. The Scientific Council examines the STATLANT 21A provisional catches (landings) and may adjust the figures for various reasons. Inter alia, this allows for: (a) estimation of NAFO Contracting Party catches for which information had not been submitted prior to the stipulated deadline, (b) making adjustments required by the provisional nature of the STATLANT 21A submission, (c) the inclusion of discard information that was not a part of the original STATLANT 21A submission, and (d) for misreporting when known, or when estimated.
143. The catch reports for each stock are discussed by the DEs, and other experts, with necessary adjustments being made by the CAWG. The details of these discussions are confidential, subject to agreements between the CAWG members and data submitters. The estimated catch figures appear in the assessment reports as STACFIS estimates. They are reported in summary sheets provided to the Fisheries Commission (NAFO SC Reports annually) along the lines of the example provided in Table 10 ([SC Rep. 2009](#), p. 9, 15 & 19 (NAFO, 2010e)).

⁶⁴ The provisional monthly catch statistics is a compilation of catch statistics submitted by the Contracting Parties. The compilation is prepared by the Secretariat and circulated to the Contracting Parties in accordance with Article 25 (2) of the NCEM.



Table 10. NAFO reported catches estimated by STACFIS and from STATLANT 21A data for selected stocks.

Year	CATCH (10 ³ t)					
	SA2+Div. 3KLMNO Greenland Halibut		Div. 3M Cod		Div. 3LNO Yellowtail Flounder	
	STACFIS	STATLANT 21A	STACFIS	STATLANT 21A	STACFIS	STATLANT 21A
2006	24	17 ¹	0.3	0.1	0.9	0.6
2007	23	15 ¹	0.3	0.1 ¹	4.4	4.6 ¹
2008	21	15 ¹	0.8	0.4 ¹	11.3	11.4 ¹

¹ Provisional

144. STACFIS catch estimates are generally similar to, or a little higher than, the provisional STATLANT 21A figures⁶⁵. However, on occasion they have been lower. The STACFIS estimates are used for assessment purposes, although it is not possible to determine whether any discrepancies between STATLANT 21A and STACFIS catch estimates significantly affect the final assessment outcome(s) (See also Appendix IX).

Observer Schemes:

145. The Scientific Council has stressed the importance of national Scientific Observer Programs in the collection of high quality scientific data. However it feels that such Programs should continue to be operated and managed by NAFO Contracting Party fisheries research centres.

146. The Scientific Council has also expressed concern that the general nature of the scientific sampling required by the *NAFO Observer Program*⁶⁶ could result in a downgrading/ worsening of national scientific observation efforts. It has thus recommended that scientific sampling under the *NAFO Observer Program* should only sample catches when Contracting Parties do not have their own programs. The electronic recording forms designed by the Secretariat should be adopted for that purpose for use by NAFO- sponsored observers.

147. The PRP was unable to determine to what extent the Scientific Council used national scientific observer data in its catch estimation procedures.

Performance Review Panel Assessment and Recommendations:

- 1. The PRP considers that the NAFO data formats and submission specifications are in general conformity with the provisions outlined in UNFSA Annex 1.**
- 2. The PRP was not in a position to determine to what extent, or how, national scientific or NAFO observer data are used in the estimation of catches for stock assessment purposes.**
- 3. The PRP noted that issues associated with the submission of data arise from time-to-time. The most notable of these are the apparent persistent failure(s) to meet stipulated data submission deadlines. While this situation is not unique to NAFO, the PRP feels that high priority should be given to encouraging the timely submission of data essential for stock assessment purposes. In this regard, it also noted that some RFMOs are considering the potential introduction of sanctions for**

⁶⁵ See also Appendix 5.

⁶⁶ In this respect, it should be noted that the NAFO Observer Program is directed at compliance evaluation (REF)



data submission infringements. Such sanctions include the denial of fishing opportunities until outstanding data submissions are supplied.

4. The PRP noted the process whereby catch reports for each stock are discussed by the Designated Experts, and other experts, with necessary adjustments being made by the *Catch Assessment Working Group* (CAWG). While recognizing that the details of such discussions are appropriately confidential to ensure an uninhibited flow of disaggregated information, the PRP would register concern over apparent discrepancies between STATLANT 21A catch estimates and those of STACFIS (Table 8) (Appendix IX). It recommends that the Fisheries Commission and Scientific Council promptly resolve such discrepancies if possible, or at least provide some guidance on how they arise, including underlying assumptions made and/or consequences anticipated.
5. The PRP fully supported the Secretariat's follow-up processes to improve data submission.
6. The PRP noted the potential utility of VMS information in verifying stock assessment input data. It suggested that this potential should be further investigated and, in particular, possible rules should be considered to govern the use of VMS data. Such rules would be in the interests of reaching a common understanding on how and why VMS data should be used as well as on avoiding overly-restrictive usage conditions.
7. The PRP expressed concern about the timeliness, accuracy and quality of data submitted, particularly data used by the Scientific Council in its catch estimation procedures.
8. The PRP noted that a fundamental requirement for stock assessment and the provision of scientific advice is that Contracting Parties collect and exchange scientific, technical and statistical data and information regarding fishing and the marine environment in an accurate and timely manner, and,
9. The PRP, therefore, urges Contracting Parties to ensure that every effort is made to ensure the accuracy of the data and information collected and the timeliness in the submission of such data to NAFO.

4.4.2. Extent to which NAFO Contracting Parties individually, or through NAFO, collect and share complete and accurate data concerning marine living resources and other relevant data in a timely manner, including analysis of trends in fishing activities over time

Background

148. Noting that the *Amended Convention* Article 1 (k) defines 'living resources' as 'all living components of marine ecosystems', the PRP saw this section to be largely directed at implementation of *UNGA Resolution* 61/105 [along with *UNGA Resolutions* 59/25 (January 2005) and 64/72 (March 2010) (UN, 2011)] and the *FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas* (DSF) (August 2008) (FAO, 2009a). 'Marine living resources' were thus taken to mean all the animals and plants that could be affected directly by fishing. It was also noted that stock assessment surveys provide information on such resources along with that reported from commercial fishing operations⁶⁷.

⁶⁷ For broader discussion of NAFO's EAF development please refer to Section 1.2.1 above.



NAFO Marine Living Resources

Prior to 2005:

149. The only relevant marine living resource data prior to 1985 came from research vessel catches. These data were recorded, but not submitted to NAFO⁶⁸. Similarly additional catch data might be available from STATLANT 21, excluding data for commercial stocks assessed by the Scientific Council. Again such data were not analyzed by NAFO in relation to marine living resources generally.
150. Nevertheless, analyses of living resources' data have formed part of the Scientific Council's work and some results can be found in the [NAFO Journal of Atlantic Fishery Science](#) (JNAFS, 2011a). Typically such data were more ecosystem than fisheries-based and often focused on assessing stock productivity and/or distribution. These analyses rarely impacted *Fisheries Commission* deliberations, although considerations of seals, elasmobranchs and the Flemish Cap Ecosystem are exceptions.

Post 2005:

151. Data on benthos are difficult to acquire. Initially, there were no requirements under either the 1978 Convention or the NCEM, to report catches of benthos by commercial fishing vessels fishing in the currently-designated fishing areas. In fact, it has been argued that the 1978 Convention may even be restricted in its application to commercially fished species (i.e. 'fishery resources') alone and thus does not relate to plants or animals that are not fished. However, there are some exceptions to these circumstances.
152. Since 2006, the NCEM have progressively provided for the collection, and reporting, of both fishery and benthic-related catch data from portions of the NAFO Regulatory Area. Article 5bis of the NCEM clearly outlines provisions for the reporting by commercial fishing vessels of catches exceeding specified threshold limits for benthic corals and sponges⁶⁹.
153. Annex XXV of the NCEM outlines protocols with attached forms to be used in the reporting of information for new fishing areas where fishing gear are likely to contact the seafloor. These are an essential component of an exploratory fishery protocol for which no applications to undertake such a fishery have yet been received.
154. While the Scientific Council does not currently request benthic organism catch data in its annual data request letter to the Contracting Parties, Articles 3 (g), 3 (h), 3 (i) and 7 (9) will allow the Council to seek benthic organism catch data from commercial fishing vessels.

Living Resources Data Currently Used By the Scientific Council:

155. In collaboration with the WGEAFM (Working Group on the Ecosystem Approach to Fisheries Management) and the ICES/ NAFO WGDEC (Working Group on Deep-sea Ecology), the Scientific Council has undertaken several assessments of benthos and benthic areas in the NAFO Area, particularly in the NAFO Regulatory Area.
156. As noted in Section 4.3, the WGEAFM role is twofold: (a) to develop a longer-term, integrated EAF strategy for the Scientific Council; and (b) to advise the Council on EAF matters. Both roles require similar data and these have come almost exclusively from *Scientific Research Surveys* undertaken by research vessels and staffed by research scientists. Such surveys include the: Newfoundland Trawl Survey (1995- 2004), Spanish/ EU Bottom Trawl Groundfish Surveys (Div. 3LMNO) (2005- 2007), and Russian observer data (2000-2007) (e.g. [SCS Doc. 10/25](#) (NAFO, 2010u)). The *Maritime Observer Data* series (1977- 2007) has also been important. These data sets were sufficiently complete to provide maps of candidate VME locations within the Convention Area ([SC Rep., 2008](#), p.

⁶⁸ However, the data may have been analysed from time-to-time by the *Scientific Council*. In particular, data used for the provision of certain scientific advice by the *Scientific Council* were regularly submitted and analysed.

⁶⁹ Although no such catches have yet been reported.



- 35-47 (NAFO, 2009c). Rigorous analyses of the data sets, often supported by more recent dedicated scientific cruises, have identified areas where the highest densities of corals and sponges are likely to be encountered. These areas have now been closed to bottom fishing on an interim basis (Article 16(3) of the NCEM) until 31 December 2011.
157. The more recent NEREIDA (4.2.3, Paragraph 110) surveys have provided additional detailed survey results which largely support earlier analyses. Preliminary NEREIDA results were first presented in 2010, and further results will become available in the future ([SC Rep., 2010](#), p. 63-67 (NAFO, 2011b) and various SCR Documents published in 2010 and in the future).
158. Marine living resources data from commercial vessels is limited. However, some useful data are available from within Canadian waters, but these are not necessarily representative of the NAFO Regulatory Area (e.g. [SCR Doc. 10/06](#) (Zwanenburg *et al.*, 2010)).
159. In 2010, the Scientific Council commented on the general lack of data on coral and sponges catches ([SC Rep., 2010](#), p. 45 (NAFO, 2011b) in response to a [Fisheries Commission request 2009](#) (FC, 2009) (FC Request 8b.(ii)). The former stated that “there were no new commercial bycatch data available” and noted that “lack of information on corals and sponges from commercial fisheries makes determination of encounter⁷⁰ protocols much more difficult”.

Biological Data

160. The collecting, collation and analysis of biological data is undertaken by the Scientific Council *Standing Committee on Research Coordination* (STACREC) under the Council’s Rules of Procedure 5.1(b) (Sub-Paragraphs (i) to (v)). Contracting Parties report to STACREC at each Scientific Council June meeting (SCS Docs. annually and also in STACREC Report), including the provision of details for surveys undertaken in the NAFO Regulatory Area.

Environmental Data

161. The collecting, collation and analysis of environmental data is undertaken by the Scientific Council *Standing Committee on Fisheries Environment* (STACFEN) under the Council’s Rules of Procedure 5.1.(d) (Sub-Paragraphs (i) to (ii)). The Secretariat sends a reminder to Contracting Parties early in the year to provide assistance by reporting environmental data. Reports of environmental conditions in each major NAFO division/area are provided by the STACFEN for inclusion in the STACFIS Report.

Performance Review Panel Assessment and Recommendations:

1. **The PRP commends NAFO on the progress it has made to acquire essential information concerning marine living resources in the NAFO Area in general.**
2. **From the information available, the PFP noted that it was largely unable to determine to what extent Contracting Parties share marine living resources data. However, the manner in which such data are used by the Scientific Council for assessment purposes strongly suggests close cooperation and significant sharing/exchanging of data by the NAFO body corporate.**
3. **The PRP noted that the progress NAFO is currently making in acquiring marine living resources data is essentially ‘work in progress’. It therefore encourages NAFO to continue to address the data requirements attached to implementation of UNGA Resolution 61/105 with some urgency.**
4. **All efforts should be expanded to encourage the timely submission of marine living resources information to expedite the comprehensive collection of essential data to**

⁷⁰ This refers to VME encounters.



improve knowledge of the benthos, and benthic environment, in the NAFO Convention Area as a whole.

4.4.3. Extent to which NAFO fishing and research data, and fishing vessel and research vessel data, are gathered by NAFO and shared among Contracting Parties

Background

162. In contrast to Section 4.4.2 above, it is assumed that fishing and research (i.e. ‘fishery resource’) data comprise catch and/or effort data collected by both commercial fishing and research vessels. Such data include information on: (a) the vessel itself, (b) the gear used, and (c) the location of fishing activities. The attached data codes and formats are set out in NCEM Annex VI to Annex X with the various reporting obligations being outlined in Articles 24, 25, 26 and 27 of the NCEM. Article VI (3) of the Current Convention and III of the Amended Convention obligate Contracting Parties to provide the Scientific Council with available statistical and scientific information requested by the Council. Such information is to be used for the major purpose of compiling and maintaining statistics and records. The statistics and records in turn, form the basis for the publication, or dissemination, of reports, information and materials pertaining to the NAFO-managed fisheries of the Convention Area.
163. As already noted, the Scientific Council uses catch and effort data to undertake assessments and provide appropriate scientific advice. They may also be used for compliance enforcement purposes (see Article 25 of NCEM), most noticeably for fisheries closures when the TAC is approached or reached, as well as in the management of fishery bycatch and area closures.
164. Such data are contained in various Scientific Council documents (SCR Docs) and are crucial to the Council's work and those of the various standing committees. Selected examples of source-data can be viewed (e.g. from 2010 for SA2+Div.3KLMNO GHL)⁷¹. Many other Council Docs feed into, and support, the attached Scientific Council assessment reports (e.g. [SCR Doc. 10/40](#) (Healey *et al.*, 2010)) and advice. The input data for stocks are listed (e.g. in [SCR Doc. 10/40](#) (Healey *et al.*, 2010)) as catch, catch-at-age, survey data abundance indices, and estimates of proportionate mature length as well as length-at-age. These are all directly linked to their source document(s).

Use of Fisheries Data

Designated Experts (DEs):

165. STACFIS uses DEs to lead the assessment process for each assessed stock. The DEs are selected annually by the Council, but there appear to be no published terms of reference detailing their responsibilities. However, it is generally understood that DEs are familiar with NAFO and/or the stock(s) to be assessed. [A current list of DEs](#) is provided on the NAFO website (NAFO, 2011r) and their selection is documented in the September section of the Scientific Council Report.

Research Coordination:

166. The Scientific Council itself does not collect data. As noted, this is a Contracting Party responsibility following established Scientific Council routines (see Section 4.4.2). Data collection is coordinated by STACREC (Section 4.4.2).

⁷¹ SCR Docs. 10/8, 10/11, 10/15, 10/21, 10/22, 10/23, 10/29, 10/40, 10/43, 10/44 & 10/45 (<http://www.nafo.int/publications/frames/sci-docs.html>)



Data Analysis:

167. Data analyses are carried out by STACFIS and presented as reports appended to the relevant Scientific Council Report. The analysis for each stock is reviewed openly by all the participants at each STACFIS meeting. At present, ecosystem data is analyzed by WGEAFM.

Data Inventories:

168. The annual STACREC report summarizes the relevant fisheries research and data collected. Research undertaken each year is summarized in the STACREC reports along with the fisheries and scientific data collected. Detailed and ancillary information is provided in the supporting SCR/ SCS Document Series.

Fishing Vessel Data:

169. Although limited STATLANT 21B data are available in respect to fishing vessel information, VMS data reports provide accurate positional data. However, their use by the Scientific Council is generally limited as specific information on gear usage and catch is usually lacking. This makes the linkage of such information to fishing location difficult, if not impossible. The attendant issues are being addressed by the updated VMS formats due to be developed by late 2011.
170. Following the points made in the previous paragraph, it appears that NAFO, and the Scientific Council, have very little detailed information available to them on the rigging of the various fishing gear types.

Research Vessel Data:

171. Research vessel information is recorded by some Contracting Parties in accordance with the groundfish survey manual. In the absence of such recordings being reported to NAFO, it is unclear what gear, mesh size, mesh type, etc, have been used. Generally this information remains with the researcher concerned or the DE involved in a stock specific assessment.

Performance Review Panel Assessment and Recommendations:

- 1. The PRP commends NAFO on its comprehensive data holdings which appear to be in accordance with the requirements of the Convention. These requirements are aimed at compiling and maintaining essential statistics and records pertaining to the fisheries for which NAFO is responsible.**
- 2. From the information available, the PRP noted that it was largely unable to determine to what extent Contracting Parties directly share fishing and research vessel data. However, the manner in which such data are used by the Scientific Council for assessment purposes strongly suggests close cooperation and significant sharing/ exchanging of such data by the NAFO body corporate.**
- 3. In the PRP's view data formatting and standardization appear adequate to ensure reporting consistency, and to promote data compatibility and/or comparability. However, the PRP feels that the rather disparate way in which data requirements are outlined in the NCEM may promote confusion and inefficiency. Consequently, the PRP would like to see a very user-friendly NAFO data manual being produced and this could also set out a full meta-data record for all NAFO's data holdings and database.**
- 4. The PRP was unable to examine in any detail the Secretariat's process for checking and validating the data it receives, other than being aware that most data validation is carried out by the Contracting Parties prior to submitting their data. Again, it is suggested that the Secretariat develop documentation to outline its data**



consolidation processes and the steps it takes to check data, including the continuation of communication with data providers after data have been submitted/used if necessary.

- 5. In all the situations highlighted above, the PRP recognized that the data submitted to NAFO by the Contracting Parties are not the sole preserve of the Scientific Council alone. For example, data may be used for different reasons, such as VMS data for compliance purposes and length-at-age data for stock assessments. The PRP is of the view that careful consideration should be given to developing NAFO fishery resources data access and utilization rules. For example, these should take into consideration intellectual property rights related to scientific analyses as well as industrial confidentiality provision to be attached to certain categories of data (e.g. detailed fishing location).**

4.4.4. Extent to which NAFO is addressing any gaps in the sharing of data as required

Background

172. Under Article VI (3) of the 1978 NAFO Convention, Contracting Parties are obligated to furnish the Scientific Council with any available statistical and scientific information requested by the Council to underpin its functions. One of the general principles set out in Amended Convention Article III (g) mandates the need to ensure that complete and accurate data concerning fishing activities within the Convention Area are collected by, and shared among, Contracting Parties in a timely manner.
173. While any Scientific Council subsidiary body (e.g. working group) may discuss data gaps and the sharing of data, STACREC is largely responsible (Scientific Council Rule of Procedure 5.1) for actions taken to address such considerations. The following review of NAFO data collection and sharing separately addresses the activities of the Scientific Council specifically and NAFO in general.

Scientific Council Data Collection & Sharing

STATLANT:

174. As noted, STATLANT 21A catch data are essential for stock annual assessments. However, late submission of data have tended to compromise the integrity and value of such data thereby requiring STACFIS to allow for this (Appendix IX).

Observer Data:

175. Observer data (as defined in Article 28 of the NCEM) are not in the public domain, but they are available to the Scientific Council as approved by the Fisheries Commission⁷². This prompted the Secretariat to produce a 2006 paper outlining the electronic reporting of observer data ([Meet. Proc., 2005-06, Section IV](#) (NAFO, 2006a)).
176. The Secretariat is currently in the process of digitizing observer data to make them available to the Scientific Council following 2004 approval for funds to undertake this work by the General Council. The Secretariat will present a summary paper to the Scientific Council on available observer data in June 2011.

⁷² This approval was granted subject to a 2004 Scientific Council request which states that "STACTIC recommended that the Fisheries Commission request Contracting Parties to make available detailed observer data (catch and effort for each haul, location (longitude and latitude), depth, time of net on bottom, catch composition and discards) to the Scientific Council by submitting them in an electronic format to the NAFO Secretariat" [[Meet. Proc. 2004-05, Section II](#) (NAFO, 2005a)].



VMS:

177. Following the Fisheries Commission's 2006 endorsement ([FC Doc 06/6](#), NAFO, 2006c) of a Scientific Council request to access VMS information for determination of fishing effort, from around vulnerable habitats and for any other purpose(s), the Secretariat has provided VMS data on several occasions. Such data have been made available to the Council in a timely manner in accordance with the provisions of Article 26 (8) of the NCEM.

Commercial Vessel Biological Sampling:

178. Such data are collected by Contracting Parties specifically for assessment purposes. There appear to be no data sharing issues, but STACREC ([SC Rep., 2010](#), p. 92 (NAFO, 2011b)) recommended in 2010 that '*Contracting Parties make greater efforts to ensure that sampling of commercial fisheries is representative for all stocks, whether taken in directed fisheries or as bycatch*'.

Ecosystem Data:

179. The collection and sharing of NAFO stock assessment data is relatively straightforward. Such data are provided by Contracting Parties, in accordance to the various provisions of the Convention already considered. NAFO stock assessment data are predominantly open-access and of little actual value in peer-reviewed scientific publications. Data ownership lies very much with the Contracting Party responsible for submission and not with the individual research labs, or even individuals, using them.
180. The above is not usually the case for most ecosystem data which are often collected by individual scientists from individual laboratories. Specific data ownership issues are therefore more likely to prevail than for assessment data. Between about 2005 and 2015, NAFO ecosystem data are likely to be of considerable intellectual value, particularly in efforts to 'mainstream' new scientific knowledge, on issues such as EAF and the effects of climate change effects, in the peer-reviewed literature. Consequently there may be data sharing and access issues that will need to be resolved. For example, this has been highlighted by potential data sharing issues between the WGEAFM and the NEREIDA project ([SC Rep., 2010](#), p.254 (NAFO, 2011b)). This has prompted debate in both the Scientific Council and STACREC on the need for more formalized data access and data-sharing arrangements (see also discussions in Sections 4.2.3 and 4.4.2, above). The NAFO Secretariat is currently drafting a data sharing arrangement.

General NAFO Data Collection and Sharing

181. Article 57 (6) of the NCEM provides for the circulation of NAFO's IUU List⁷³ and any relevant information to CCAMLR, NEAFC and SEAFO as well as other fisheries organizations. Such information provides the reasons for listing or delisting such vessels from the NAFO IUU List.
182. Prior to the June Scientific Council Meeting, the Secretariat compiles a *List of Biological Sampling Data* which consists of meta-data that is held by the various Contracting Party labs. These data complement the STATLANT 21 data, which is publicly available, and other scientific data from relevant research cruises that are reported in the various National Research reports and other scientific documents (SCS and SCR). A detailed description of the STATLANT 21 data is available from the NAFO Secretariat on request.
183. The Secretariat provides the *Monthly Provisional Catch Reports* submitted by the Contracting Parties. It also provides VMS data in summary form for the purpose of determining fishing effort on, and around, vulnerable habitats, or for any other purpose as requested by the Fisheries Commission.

⁷³ NCEM Article 57 outlines the principles and processes underlying the establishment of an IUU list for vessels considered to be involved in IUU activities pursuant to NCEM Articles 52 to 55 and the notification procedures for presumed IUU activities in Article 56.



NAFO Website (www.nafo.int)

184. The NAFO Website is an important asset in the dissemination and sharing of data and information. Depending on the security level of attached information, data are either made available on the Website's public pages, or on password-protected Members' pages. For example, the IUU List is available publicly, while the annotated IUU List is available on the member pages only. STATLANT fisheries statistics are also publicly available and are provided with a user-friendly query function.
185. All Scientific Council Reports, the Meeting Proceedings of General Council and Fisheries Commission, as well as their subsidiary bodies, and other documents are publicly available. All meeting documents are uploaded on the Website for access by NAFO members.

Performance Review Panel Assessment and Recommendations:

1. **The manner in which data are used by the Scientific Council and Fisheries Commission for assessment and enforcement purposes strongly suggests close cooperation and significant sharing/ exchanging of such data by the NAFO body corporate.**
2. **The PRP noted potential data sharing issues attached to commercial vessel biological data and that STACREC has recommended that further work be undertaken to bring attached procedures in line with those used by other RFMOs (e.g. CCAMLR) so as to ensure that sampling of commercial fisheries is representative for all stocks, whether taken in directed fisheries or as bycatch.**
3. **It also noted that NAFO, and the Secretariat in particular, expends considerable effort into ensuring that information is made publicly available in a timely manner. The PRP recorded its appreciation for such efforts, particularly for the timely provision of important information on the NAFO Website.**
4. **To improve the potential utility of such information, the PRP feels that it could be better linked and more 'user friendly'. In that respect, some thought could be given to providing a clear 'information map' on the NAFO Website to direct those seeking specific types of information to their source(s) in a more efficient manner.**
5. **The ongoing development by the Secretariat of a website search engine to facilitate information accessibility was commended by the PRP.**
6. **With the growing importance of electronic media as a means to disseminate information and promote communication, the PRP urges NAFO to consider refining its website to ensure that it continues to support the internal workings of NAFO as well as providing an important educational and outreach tool.**

4.5. Quality and provision of scientific advice

186. Article XI (2) of the 1978 NAFO Convention mandates NAFO's consideration of scientific information and advice in the Organization's management of the fishery resources for which it is responsible. The final sentence of the paragraph clearly states:

'...the Commission shall take into account any relevant information or advice provided to it by the Scientific Council'.

187. Article III (b) (*General Principles*) of the *Amended Convention* takes this invocation one step further to clearly indicate that NAFO in general, and the Fisheries Commission in particular, should:



‘Adopt measures based on the best scientific advice available to ensure that fishery resources are maintained at or restored to levels capable of producing maximum sustainable yield’.

188. Together these provisions clearly identify the Scientific Council as the source of scientific advice to be taken into account in meeting the *Convention’s* primary goal in terms of ensuring the conservation and sustainable use of marine living resources in the *Convention Area*.
189. A historical summary of NAFO scientific advice, TACs, catch statistics and management measures, for both moratoria and non-moratoria stocks, is attached at Appendix X. The respective roles of the Scientific Council and Fisheries Commission in providing the necessary advice and taking the appropriate management decisions were clearly delineated in 2002 and are shown in Table 11.
190. While Table 11 is largely focused on applying the PAF, it clearly outlines the Council’s and Commission’s responsibilities in terms of ensuring that the scientific debate remains unaffected from more political considerations attached to decisions directly affecting the management strategy to be followed or action to be taken.

Table 11. Respective Roles of the Scientific Council and Fisheries Commission (from [Meet. Proc. 1998, Section III](#) (NAFO, 1999a)).

Scientific Council	Fisheries Commission
Determine Stock Status	Specify Management Objectives, Select Target Reference Points & Set Limit Reference Points
Classify Stock Status With Respect To Biomass/Fishing Mortality Zones	Specify Management Strategies (Courses of Action) For Biomass/Fishing Mortality Zones
Calculate Limit Reference Points & Security Margins	Specify Time Horizons for Stock Rebuilding & For Fishing Mortality Adjustments To Ensure Stock Recovery &/or Avoid Stock Collapse
Describe & Characterize Uncertainty Associated With Current & Projected Stock Status With Respect to Reference Points	Specify Acceptable Levels of Risk To Be Used In Evaluating Possible Consequences Of Management Actions
Conduct Risk Assessment	-

191. Therefore, the development of scientific advice within NAFO is extremely comprehensive. Equally, the quality of scientific consideration and advice is high. Evidence of this quality is clearly manifest in the thoroughness of the various stock assessments undertaken, the development of new approaches (e.g. the PAF [Section 4.6.2] and EAF Roadmap [Section 4.3]), publication of the [Journal of Northwest Atlantic Fisheries Science](#) (JNAFS, 2011a), as well as various [Scientific Council Studies](#) (NAFO, 2011q), [Research and Summary Documents](#) (NAFO, 2011s) . The Council’s scientific activities have also benefited from the participation of DEs and the various special-topic symposia held to date.
192. The extent of the Scientific Council’s scientific advice also reflects the scientific quality and diversity of expertise that NAFO Members are willing to provide to the Council’s activities. Currently, this commitment is quite evenly spread throughout NAFO’s membership.
193. Despite comprehensive scientific advice, and as already noted, eight out of a total of 19 NAFO-regulated stocks are currently under moratoria (Table 6, **Error! Reference source not found.**). A further three stocks are subject to rebuilding plans (**Error! Reference source not found.**).
194. Furthermore, and even in recent years, the TAC has been set by the Fisheries Commission above the level(s) advised by the Scientific Council. For example, in 2009 most of the TACs were set well above the Council’s recommended level. In the case of Div. 3NO White Hake, the TAC was more



than 7 times greater (6 000 t) than that advised by the Council (850 t). In 2010 and 2011, the situation remains the same while catches remain at a level around 1 000 t.

195. On the other hand, scientific advice does not always appear to provide clear and explicit indications of the levels of uncertainty through the use of attached confidence intervals. Equally, providing broad ranging or rapidly-changing advice in situations where there is substantial scientific uncertainty (e.g. for Greenland Halibut as discussed in Section 4.6.2) does not facilitate the subsequent taking of decisions.
196. The accessing by the Fisheries Commission of the full extent of the scientific advice provided can also be complicated by difficulties in interpreting the advice. The weighting of such advice may also be difficult to determine in the absence of clear priorities being identified by the Scientific Council due to any attached scientific uncertainty or interpretational differences. In particular, the latter may result in alternative scientific considerations. For example, the inherent risks attached to the use of one piece of scientific advice, or a single interpretation, as opposed to another is not always clearly discernible.

Performance Review Panel Assessment and Recommendation:

1. **The PRP noted that the distinct separation of ‘science’ and ‘management’ implied in Table 11 is probably useful in ensuring that scientific debate is not ‘contaminated’ by political considerations. However, it may not encourage dialogue between the Fisheries Commission and the Scientific Council. It also runs the risk that such dialogue (as is the current situation) becomes overly formal and therefore any management/ scientific responses to changing circumstances are slower. Therefore, serious consideration should be given on how any dialogue between the Council and *Commission* could be improved, while still maintaining the intended ‘philosophical’ separation between them. The content of any such dialogue should also be considered in terms of providing both groups with the best information available so that decisions, or actions, may be based on clear, interpretable, unambiguous and informed understanding. The new *Working Group of Fishery Managers and Scientists on Conservation Plans and Rebuilding Strategies (FC Doc 10/11)*(NAFO, 2010h) appears to be a step in the right direction as were initiatives to deal with VMEs, PAF and Management Strategy Evaluation (MSE).**
2. **The PRP concurred that the scientific advice provided by the Scientific Council is generally comprehensive and of high standard. However, the use of such advice may be complicated by its presentation in a diverse and scientifically complex manner. Terminology may also be used that assumes considerable understanding of the scientific methods and procedures being applied. The PRP felt that the following two areas should be considered in the interests of improving the use of the Scientific Council’s advice by the Fisheries Commission and *vice versa*.**
3. **The provision of tabular presentations for key management decisions to be taken rather than decisions being obscured in other documentation. Such a presentation would serve as a ‘targeted framework’⁷⁴ to be followed by the Fisheries Commission and to be completed by the Scientific Council. This could also involve clearer presentation by the Scientific Council of uncertainties and alternative scientifically-determined outcomes that are likely to arise from the advice being provided. This approach could extend the use of standardized *management procedures* by providing more risk- based, or risk- *determined scientific* advice. It would aim to take the form of a fully integrated management procedure(s) to be**

⁷⁴ As demonstrated by the Kobe Matrix and the Kobe Plot applied by the tuna RFMOs



used in providing a ‘single answer’ and/or a standardized way of presenting risk under different management options (e.g. the management procedure being developed for Greenland Halibut- ([FC Doc 09/18](#) (NAFO, 2009i))] and along the lines of the PAF) (See Section 4.6.2).

4. A consolidated description of the scientific approaches, models and underlying assumptions used by the Scientific Council. This could be in the form of a users’ manual⁷⁵ outlining, with attached lay explanations, the various assessment being undertaken. Such a manual would serve to provide a record of the way in which various assessments are being carried out as well as an easily interpreted guide for the Fisheries Commission. It would also provide useful information for others with an interest in NAFO’s management approach.
5. In the PRP’s view, NAFO currently finds itself in a position where its customary scientific and management needs (particularly in respect to stock assessments) are being broadened to deal with a variety of challenges. In recent years, these have included furthering development of EAF (Section 4.3), increased formalization of the PAF (Section 4.6.2) and accounting for marine living resources in general, including VMEs and bycatch (Section 4.4.2). In taking such challenges into consideration, the PRP feels that NAFO should continue to ensure it routinely tracks/assesses the stocks it is responsible for managing. The use of standardized, well-understood and scientifically robust approaches should thus continue. The PRP recognized that care also needs to be taken to ensure that the challenges clearly offered by the broadening of NAFO’s management remit are met without compromising the Organization’s delivery of its more customary responsibilities.
6. The above mandates good communication between the Scientific Council and Fisheries Commission in particular. Whenever possible, such communication should be augmented by joint sittings of, or direct dialogue between specific working groups to promote common understanding of their respective roles as well as to augment the exchange of information to facilitate the execution of their respective functions. The *Working Group of Fishery Managers and Scientists on Conservation Plans and Rebuilding Strategies* offers a good example of recent NAFO efforts to facilitate such an information exchange.
7. Unlike other RFMOs, the burden of scientific input appears to be shared by all NAFO Contracting Parties in proportion to their respective fishery activities. However, this should not be seen as a foregone conclusion or one that is destined to continue indefinitely. Therefore, NAFO as a whole may wish to reflect on the use, and allocation, of its scientific capacity from time-to-time.

4.6. Adoption of conservation and management measures

4.6.1. NAFO measures based on the best scientific advice available

197. As already noted, Appendix X, as well as section 4.2.2, provides a historical summary of NAFO scientific advice, TACs, catch statistics and management measures, for both moratoria and non-moratoria stocks. This summary clearly indicates the scope and extent of the management measures adopted to date for various stocks and their scope/ intent in terms of the scientific advice provided. Further review of the NCEM also indicates a comprehensive range of other measures (including

⁷⁵ CCAMLR has developed such a manual - “*Understanding CCAMLR’s Approach to Management*” which is accessible at: http://www.ccamlr.org/pu/e/e_pubs/am/am-all.pdf



Monitoring Control and Surveillance [MCS] measures) to augment the long-term sustainability of the stocks and fisheries in the NAFO Area. These are listed in Table 12.

Table 12. Categories of Management & Other Regulatory Measures Promulgated by NAFO.

CATEGORY OF MEASURE
Conservation & Management Measures
Bottom Fisheries in NAFO Regulatory Area
Control Measures
Monitoring of Fisheries
Joint Inspection & Surveillance Regime
Port State Control
Scheme To Promote Compliance by Non-Contracting Party Vessels with Recommendations Established by NAFO
Electronic Reporting, Satellite Tracking & Observers
Various Information, Forms, etc., to be attached to NAFO Conservation & Enforcement Measures

198. Taking into account the review and comments in Section 4.5, these measures are based on high quality scientific input and advice. However, as also noted, such advice has not always been taken into account and the reasons for this are not altogether clear.

Performance Review Panel Assessment and Recommendations:

1. The PRP assessments made in Sections 4.2.2 and 4.5 are also relevant here.
2. The PRP suggests that more transparent information on why any measures have come to be adopted should be provided, especially when such measures appear to be inconsistent with the scientific advice provided by the Scientific Council.
3. As highlighted in Error! Reference source not found., the number of stocks under moratoria was close to 50% of all NAFO stocks in 2009. The PFP noted that such situation does not reflect well on the effectiveness of NAFO Parties in implementing their obligations under the Convention. Clearly, the general situation outlined in the other sections, in particular in the historical section (Section 4.1), constitutes a major factor in explaining the reasons for the collapse of many stocks, notably, inadequate scientific advice, the absence of agreement on appropriate management strategies, non compliance and non Contracting Parties fishing activities. Notwithstanding, the Panel noted that even in more recent years, there were stocks for which moratoria were declared. However that situation is mitigated by the agreement in recent years on re-building plans on a number of key stocks and re-opening of some fisheries.

4.6.2. NAFO precautionary approach

Background

199. The first NAFO action to incorporate the precautionary approach into its management strategy dates back to 1996, when the Fisheries Commission (referring to UNFSA) requested the Scientific Council to provide information for managed stocks, including recommendations on limit and target reference points, medium term considerations and risks, longer term research requirements and monitoring, etc.



The precautionary approach was then discussed formally for the first time by the Scientific Council in 1997 ([SC Rep. 1997](#), p. 15(NAFO, 1998b)).

200. Nine meetings were held on the topic between 1997- 2004⁷⁶. In 1998, the SC held a Workshop on the Precautionary Approach to Fisheries Management and in 1999 a joint FC/SC WG on the Precautionary Approach was established and met several times until 2003, when the SC held another workshop to review the progress achieved so far and to test the application of the PA to seven NAFO stocks. In 2004, the SC recommended and the FC adopted a Framework for a Precautionary Approach. The PAF was first applied to the Div. 3LNO Yellowtail and Div. 3M Shrimp stocks (in 2005) before being applied to other NAFO stocks.

NAFO Precautionary Approach Framework (PAF)

201. The PAF identifies limit reference points and an associated buffer is allowed for parameter *Framework* is depicted schematically in Figure 43 and Figure 44 below. The PAF's reference points are identified in Table 13 and Table 14, with various 'precautionary zones' and management strategies/ actions being shown. A full outline of the *Framework* is attached at Appendix XI. During the PAF's development, progress was also made on defining the respective roles of scientists and managers in the PA process (Table 11). PAF reference points have been estimated for the NAFO stocks listed in

Table 15⁷⁷.

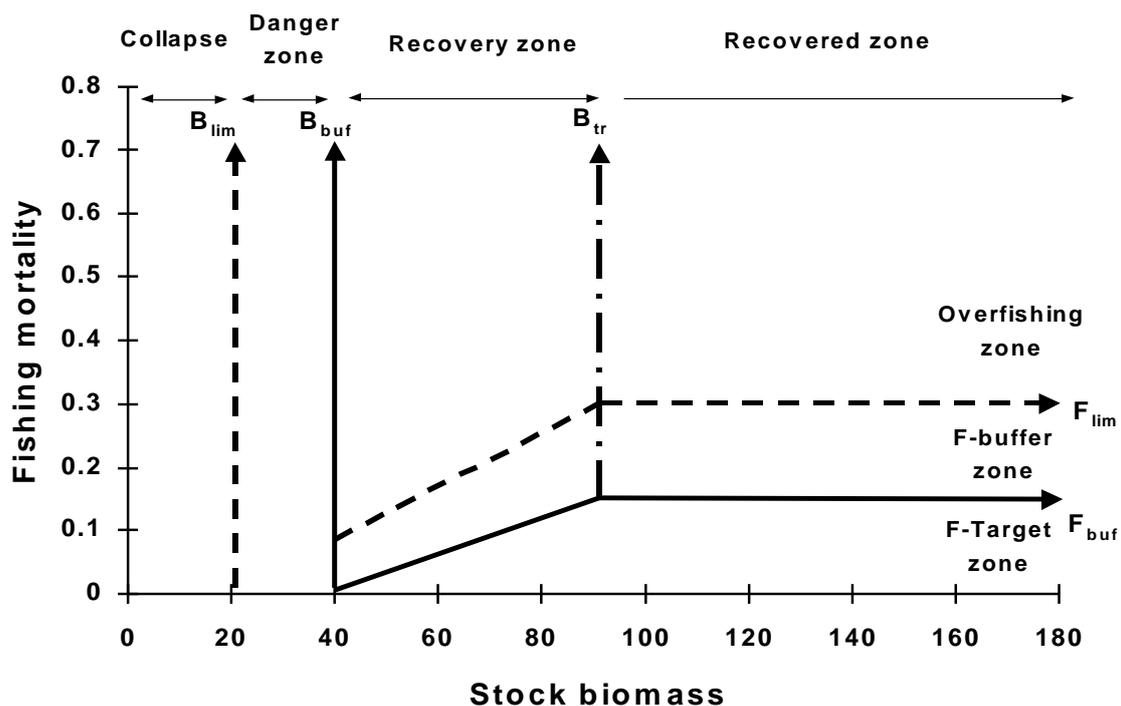


Figure 43. Schematic depicting the NAFO Precautionary Approach Framework (PAF) proposed by the Scientific Council in 1997 (from [FC Doc. 04/18](#), NAFO, 2004f).

⁷⁶ The most notable of these was a meeting of the *Limit Reference Point Study Group* (LPRSG) held during April 2004 ([SCS Doc. 04/12](#) (NAFO, 2004g))

⁷⁷ Cod Div. 3M ([SC Report 2010](#), p. 26 (NAFO, 2011b)), Cod Div. 3NO ([SC Report 2010](#), p. 29 (NAFO, 2011b)), Am. Plaice Div. 3M ([SC Report 2008](#), p. 23 (NAFO, 2009c)), Am. Plaice Div. 3LNO ([SC Report 2010](#), p. 23 (NAFO, 2011b)), Redfish Div. 3LN: ([SC Report 2010](#), p. 32, 158 (NAFO, 2011b)), Yellowtail Div. 3LNO ([SC Report 2009](#), p. 16 (NAFO, 2010e)), Witch Div. 2J+3KL ([SC Report 2010](#), p. 38 (NAFO, 2011b)), Shrimp Div. 3M ([SC Report 2010](#), p. 266 (NAFO, 2011b)), Shrimp Div. 3LNO ([SC Report 2010](#), p. 268 (NAFO, 2011b))



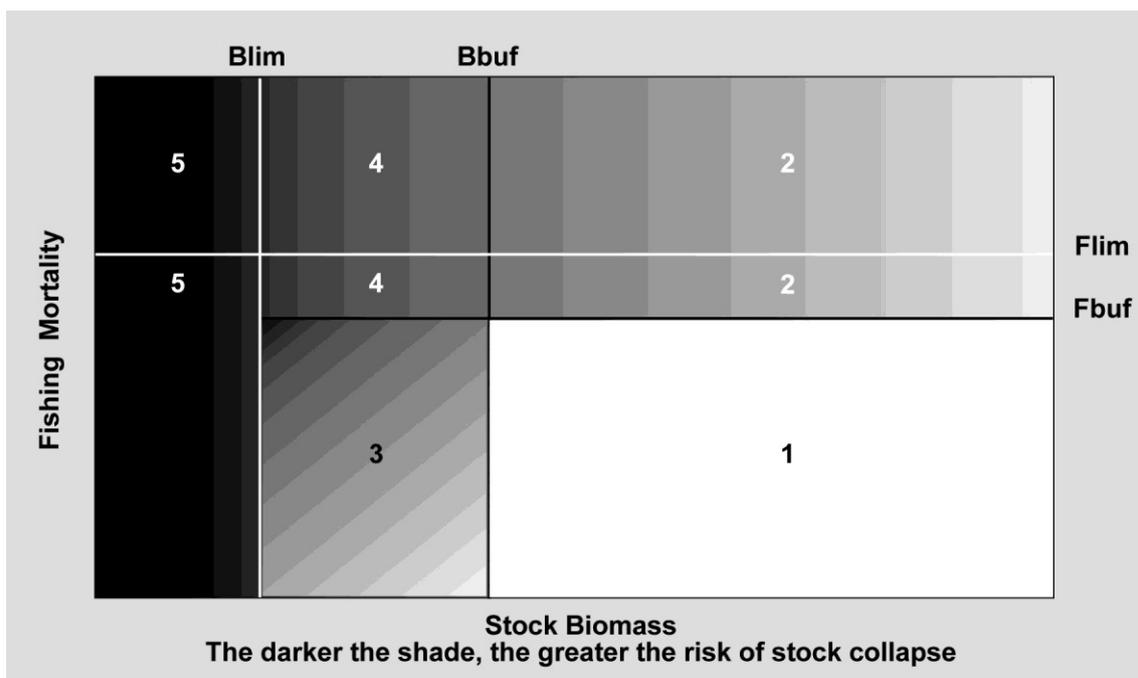


Figure 44. Diagram depicting the NAFO PA Framework.

Table 13. Management strategies and courses of action.

Management Strategies and Courses of Action (Time horizons and acceptable risk levels specified by managers)	
Zone 1	Safe Zone: Select and set fishing mortality from a range of F values that have a low ¹ probability of exceeding F_{lim} in a situation where stock biomass (B) has a very low ² probability of being below B_{lim} . In this area, target reference points are selected and set by managers based on criteria of their choosing (e.g. stable TACs; socio-economic considerations).
Zone 2	Overfishing Zone: Reduce F to below F_{buf} .
Zone 3	Cautionary F Zone: The closer stock biomass (B) is to B_{lim} , the lower F should be below F_{buf} to ensure that there is a very low ² probability that biomass will decline below B_{lim} within the foreseeable future ³ .
Zone 4	Danger Zone: Reduce F to below F_{buf} . The closer stock biomass (B) is to B_{lim} , the lower F should be below F_{buf} to ensure that there is a very low ² probability that biomass will decline below B_{lim} within the foreseeable future ³ .
Zone 5	Collapse Zone: F should be set as close to zero as possible.



Table 14. NAFO PAF reference points for Fishing Mortality (F) and Stock Biomass (B) (from [FC Doc. 04/18](#), NAFO, 2004f).

Reference Point	Description
F_{lim}	Fishing mortality rate with low probability ¹ of being exceeded. F_{lim} cannot be greater than F_{msy} . If F_{msy} cannot be estimated, then an appropriate surrogate may be used instead.
F_{buf}	Fishing mortality rate below F_{lim} required in absence of analyses of the probability that current, or projected, F exceeds F_{lim} . In absence of such analyses, F_{buf} specified by managers and should satisfy requirement for a low probability ¹ that any F estimated to be below F_{buf} will actually be above F_{lim} . The more uncertain the stock assessment, the greater the buffer zone should be. In all cases, a buffer is required to signify the need for more restrictive measures.
When B is above B_{buf} and F is above F_{buf} , a flexible fishing mortality rate should be selected by managers to achieve desired management objectives, subject only to the constraints defined by the limit and buffer reference points. In particular, a target F should be chosen to ensure that there is a low probability ¹ that F exceeds F_{lim} , and a very low probability ² that B will decline below B_{lim} in foreseeable future ³ .	
B_{lim}	B below which stock productivity is likely to be seriously impaired. Should have very low probability ² of being violated.
B_{buf}	B above B_{lim} required in absence of analyses of probability that current, or projected, B is below B_{lim} . In the absence of such analyses, B_{buf} to be specified by managers and should satisfy requirement that there is a very low probability ² that any B estimated to be above B_{buf} will actually be below B_{lim} . The more uncertain the stock assessment, the greater the buffer zone should be. In all cases, a buffer is required to signify the need for more restrictive measures.
¹ - Low probability (~ 20%), but actual level to be specified by managers ² - Very low probability (~ 5-10%), but actual level to be specified by managers ³ - Foreseeable future (5-10 years), but actual time horizon to be specified by managers	

Table 15. NAFO stocks for which precautionary reference points have been defined.

Stock	B_{lim}	F_{max}
Cod Div. 3M	$B_{lim} = 14\ 000\ t$	
Cod Div. 3NO	$B_{lim} = 60\ 000\ t$	
Am. Plaice Div. 3M	$B_{lim} = 5\ 000\ t$	
Am. Plaice Div. 3LNO	$B_{lim} = 50\ 000\ t$	$F_{lim} = 0.4$
Redfish Div. 3LN	$B_{lim} = 30\%$ $B_{msy} (= 55\ 729\ t)$	$F_{lim} = F_{msy} = 0.13$
Yellowtail Div. 3LNO	$B_{lim} = 30\%$ $B_{msy} (= 23\ 500\ t)$	$F_{lim} \leq F_{msy} = 0.25$
Witch Div. 2J3KL	$B_{lim} = 15\%$ $B_{1984} \times 1.48 (= 14\ 500\ t)$	
Shrimp Div. 3M	$B_{lim} = 2\ 600\ t$	
Shrimp Div. 3LNO	$B_{lim} = 19\ 000\ t$	

202. It is apparent that the estimated precautionary reference points may vary in application with respect to determining the maximum sustainable yield (MSY) level for B . For example, the Witch Flounder ('Witch') MSY level has been set as a function of the estimated 1984 biomass. Notwithstanding, the F_{msy} for Div. 3LN redfish has been determined from a surplus production model used in the stock assessment. A production model is used in this redfish stock as there is a long survey and commercial CPUE time series available. However, corresponding age structured catches are not available. In the



absence of any fishery reopening criteria, a very low proportion of the F_{msy} (1/6) was advised as the catch level for 2011.

203. There have been no attempts to standardize assessment approaches across species, with the assessment method used for a particular stock being dependent on available (catch/survey/ other) data. Before choosing a particular approach, the Scientific Council usually investigates various alternative models. Even after an approach is adopted, frequent analyses are conducted to ensure that the models being applied are still appropriate and to improve the assessment analyses. The assessment modelling approaches being used and the frequency of their application are summarized in Table 16 below.

Table 16. Assessment approaches and frequency for various NAFO stocks ([SC Rep., 2010](#), p.251(NAFO, 2011b)).

NAFO Assessed Stocks	Assessment Frequency (from 2006)	Assessment Approach
Div. 3LNO American Plaice	2	VPA Base Assessment (ADAPT)
Div. 3NO Cod	3	VPA Base Assessment (ADAPT)
Div. 3LN Redfish	2	Surplus Production Model
Div. 2J+3KL Witch Flounder	3	Trends Surveys & Catch
Div. 3M Redfish	2	VPA Base Assessment (XSA)
SA 2+3 Rough-head Grenadier	3	Trends Surveys & Catch
Div. 3O Redfish	3	Trends Surveys & Catch
SA1 Redfish	3	Trends Surveys & Catch
SA1 Other finfish	3	Trends Surveys & Catch
Div. 3M Cod	2	VPA Base Assessment (Bayesian XSA)
Div. 3M American plaice	3	VPA Base Assessment (XSA)
Div. 3NO Witch Flounder	3	Trends Surveys & Catch
Div. 3LNO Yellowtail Flounder	2	Surplus Production Model
SA3+4 Squid (<i>Illex</i>)	3	Trends Surveys & Catch
Div. 3LNO Capelin	2	Trends Surveys
Div. 3NLOPs Thorny Skate	2	Trends Surveys & Catch
Div. 3NOPs White Hake	2	Trends Surveys & Catch
SA0+1 Roundnose Grenadier	3	Trends Surveys & Catch
SA2+3 Roundnose Grenadier	3	-
SA2, Div. 3KLMNO Greenland Halibut	1	VPA Base Assessment (XSA)
SA0+1 (Offshore) & 1B-F Greenland Halibut	1	Trends Surveys & Catch
IA (Inshore) Greenland Halibut	2	Trends Surveys & Catch
Div. 3M Northern Shrimp	1	Trends Surveys & Catch
Div. 3LNO Northern Shrimp	1	Trends Surveys & Catch
SA 0+1 Northern Shrimp	1	Surplus Production Model (Includes Atlantic Cod Prdeation)
Denmark Strait Northern Shrimp	1	Trends Surveys & Catch



PAF Application

204. Various Fisheries Commission requests for advice between 1999 and 2009⁷⁸ have highlighted the following:

- Many stocks in the NAFO Regulatory Area are well below reasonable B_{lim} or B_{buf} levels. For these stocks, the Scientific Council's most important task is to offer advice on how such stocks might be rebuilt. Information is needed on the research and monitoring required to more fully evaluate and refine the reference points described in paragraphs 1 and 3 of Annex II of the Agreement. These research requirements should be set out in the order of priority considered appropriate by the Scientific Council;
- The Scientific Council should address any other aspect of Article 6 and Annex II of the UNFSA which it considers useful for implementing the Agreement's provisions in respect to a precautionary approach for fisheries in the NAFO Area; and
- There is a need for the Scientific Council to propose criteria and harvest strategies for new and developing fisheries to ensure that they are maintained within the NAFO PAF Safe Zone.
- In 2010, Fisheries Commission requested the Scientific Council to provide guidance on its advice for 2011, particularly in respect to the details required to align such advice with UNFSA⁷⁹ requirements. Particularly the Council should advise on:
 - NAFO stock limits and precautionary reference points in terms of similar metrics outlined in Annex II of the UNFSA. Areas of uncertainty should be indicated, and for those stocks for which precautionary reference points cannot be determined directly, proxies should be provided;
 - The stock biomass and fishing mortality trajectory over time overlaid on a plot of the PAF. Where biomass and/or fishing mortality cannot be determined directly, proxies should be used;
 - Information indicating in which current PAF Zone the stock falls. Possible harvest strategies should be proposed to relocate relevant stocks to within the PAF Safe Zone, or retain them there. Such proposals should identify medium-term considerations, including any associated risk or probability, to assist the Commission in developing management strategies of the type described in paragraphs 4 and 5 of Annex II of the *Agreement*⁸⁰;

205. Other elements to be taken into account by the Scientific Council when considering the PAF, include:

- The need to reference "risk" and to "risk analyses" in terms of estimated probabilities of stock population parameters falling outside the PAF biological reference points;
- Where reference points are proposed by the Council as indicators of biological risk, they should be accompanied by a description of the nature of the risk associated with violating the reference point- for example due to recruitment overfishing, impaired recruitment, etc.
- The Scientific Council should explain any assumptions made concerning the level of uncertainty with which a stock has been measured. When a buffer reference point is identified in the absence of a risk evaluation, the Council should indicate whether the buffer reference point is actually at, or beyond, the limit reference point, even if the reference point has been selected to maintain a low probability of this happening;
- Wherever possible, short and medium term consequences should be identified for various exploitation rates (including no fishing) in terms of yield, stability in yield from year to year,

⁷⁸ FC Docs. [09/17](#) (FC, 2009), [08/19](#) (FC, 2008), [07/21](#) (FC, 2007), [06/10](#) (FC, 2006), [05/14](#) (FC, 2005), [04/7](#) (FC, 2004), [03/9](#) (FC, 2003), [02/7](#) (FC, 2002a), [02/22](#) (FC, 2002b), [00/20](#) (FC, 2000), [99/14](#) (FC, 1999)

⁷⁹ [FC Doc. 10/9rev](#) (FC, 2010)

⁸⁰ The text of this paragraph is based on item 2 of Annex I of the 2010 FC Request ([FC Doc 10/9 Rev](#) (FC, 2010)). The exact language of such request has been used since 2005 and applies "for all stocks". Reference to Annex II of the UN FSA, stock limits precautionary reference points etc. dates back to FC Request. In 2004, the language was almost identical except that the application was for yellowtail flounder in Div 3LNO and shrimp in Division 3M. Between 1997-2003, the application was for "stocks under its responsibility". The text of the Request in this period was different from that of 2004. In 1996, the application was also "Stock under its responsibility" but the PA request was not as detailed as in the subsequent years. Since 1996, the FC Request made reference to Annex II of the UN Fish Stock Agreement.



and the risk, or probability, of maintaining the stock within, or moving it into, the PAF *Safe Zone*. Equally, such information should be cast in terms of risk assessments relating fishing mortality rates to biomass (or spawning biomass) trends, the risks of stock collapse and recruitment overfishing, as well as the risks of growth overfishing, and the consequences in terms of both short and long term yields; and

- When providing risk estimates, the Council should be aware of the importance of clearly spelling out the time horizon. By way of consequence, risks should be expressed in timeframes of 5, 10 and 15 years (or more), or in terms of other appropriate year ranges depending on stock specific dynamics. Furthermore, and to provide the Fisheries Commission with the information necessary to consider the balance between risks and yield levels, each harvesting strategy or risk scenario should include (for selected year ranges) the risks and yields associated with various harvesting options in relation to B_{lim} .

Performance Review Panel Assessment and Recommendations:

1. The PRP notes that the NAFO PAF is quite sophisticated and that its formulation goes beyond what many other RFMOs have developed to address the provisions in Article 6 and Annex II of the UNFSA.
2. Given current data and/or model limitations, the PRP recognized that it is not possible to have precautionary reference points for all stocks at this time. While the necessary data do exist for some stocks, the attached PAFs have not yet been fully developed due to time constraints.
3. The PRP notes that the Fisheries Commission has persistently sought the Scientific Council's advice on evaluating various stock recovery plan scenarios with timeframes of 5 to 10 years, or longer, as appropriate. The PRP endorses the Fisheries Commission's views that such evaluations are important for providing the Commission with essential information on which to balance risks and stock yield levels, including information on the consequences and risks of not taking action.
4. While the PAF has been applied to nine NAFO stocks, the PRP found it difficult to ascertain to what extent the various reference points identified in Table 14 above were being taken into account when stock recovery plans were being considered. The PRP suggests that any such link should be made much more explicit and should be documented alongside the PAF.
5. In terms of documenting the PAF, the PRP felt that a clearly designated, and easily accessible, area of the NAFO website should set out a brief history of the Framework's development and a detailed explanation of its key contents and use, including in relation to recovery plans (see above) as well as new and exploratory fisheries (see below).
6. In its current form, the PAF does not appear to have been explicitly applied to account for the potential management of fishery-ecosystem interactions. The PRP feels that this is a serious deficiency in the overall application of the PAF (see also Section 4.5) and that priority should be given to considering the extent to which the PAF could be applied in an ecosystem management context.
7. There appears to have been little consideration of feasible decision rules to be applied when taking PAF considerations and outcomes into account for management purposes. While the PRP notes that the development of precautionary limit reference points rests with the Scientific Council alone, there appears to be some efficacy in promoting dialogue between the Scientific Council, the Fisheries Commission and General Council on how the reference points could



be used in a scientifically-driven decision-making process. The experiences of other RFMOs and NAFO in developing such processes are likely to offer a way forward.

8. The PRP considered that the absence of a formally defined decision rule framework may exacerbate perceived differences between the Scientific Council and Fisheries Commission. The matter is obviously one for serious consideration and review if the Organization's overall functionality and effectiveness is to be improved in the PAF's application.
9. The lack of a unified approach for dealing with new and exploratory fisheries, (Section 4.6.3) including the re-opening of previously closed fisheries, is a shortcoming in the PAF's more comprehensive application. The PRP suggests that the Scientific Council should be requested to review the situation and if necessary develop a strategy to be used in applying the PAF to new and exploratory fisheries specifically.
10. On occasion, the Scientific Council advice on applying precaution to the management of certain stocks appears to have been ambiguous. For example, Scientific Council has offered multiple management options for the Greenland Halibut Subarea 2 + Div. 3KLMNO stock ([SC Report 2007](#), p.13 (NAFO, 2008c)) with little guidance on which is favoured. The issue appeared to be attributable to variable assessment projection results based on different assumptions of future catch, and would have probably not influenced scientific advice so markedly if a procedure had been in place to guide the advice so that both precaution and scientific uncertainty could be more explicitly addressed. The PRP feels that it would be wise for the Scientific Council to consider how it might be able to avoid such circumstances in the future (see also comments about the Council's functions compared to those of the Fisheries Commission above).

4.6.3. Unregulated fisheries, including new and exploratory fisheries

206. The number of NAFO-regulated stocks increased from two in 1979 to 19 in 2011 (Table 6 And [Table 7](#)). Some of these stocks were regulated by ICNAF before 1979. It is logical to assume that each of these stocks would have become subject to conservation and management measures when, or close to when, fishing commenced⁸¹. It can probably also be assumed that many of new fisheries alluded to were not subject to any precautionary provisions during the early stages of exploitation, when they were essentially 'exploratory' in nature.
207. The *Exploratory Fisheries Protocol Template* outlined in NCEM Annex XXV identifies key requirements to be attached to 'new fishing areas' where fishing gear are likely to come into contact with the seafloor. The key elements of the *Protocol* require prior notification of an intent to undertake exploratory and areas of key information to be submitted include a: (a) harvesting plan, (b) mitigation plan, (c) catch monitoring plan, and (d) data collection plan as follows:
 - A harvesting plan which outlines target species, dates and areas. Area and effort restrictions should be considered to ensure fisheries occur on a gradual basis in a limited geographical area;
 - A mitigation plan including measures to prevent significant adverse impact to vulnerable marine ecosystems that may be encountered during the fishery;
 - A catch monitoring plan that includes recording/reporting of all species caught, 100% satellite tracking and 100% observer coverage. The recording/reporting of catch should be sufficiently detailed to conduct an assessment of activity, if required; and

⁸¹ The PRP noted that many stocks prior to 1979 were managed by NAFO's predecessor - ICNAF.



- A data collection plan to facilitate the identification of vulnerable marine ecosystems/species in area fished.

208. Under NCEM Annex XXV (IV), the NAFO *Exploratory Fisheries Protocol* is not activated until the stipulated information has been provided to the Executive Secretary and circulated to all the NAFO Contracting Parties and the Scientific Council for information. This *Protocol* is expressly linked to the bottom fisheries provisions in Chapter I bis of the NCEM, particularly Articles 3bis, 4bis and 5bis. In this respect the *Protocol* may be viewed as ‘precautionary’ since its major objective could be said to be aimed at preventing significant adverse VME impacts. Article 3 bis (5), for instance, establishes that:

Prior to commencing new bottom fishing activities based upon the results of exploratory fisheries conducted in the prior two years, the Fisheries Commission shall review the assessments undertaken in accordance with Article 4bis below and the results of the fishing protocols implemented by the participating fleets, and shall:

i. establish conservation and management measures to prevent significant adverse impacts on vulnerable marine ecosystems from individual fishing activities and to ensure the long-term sustainability of deep sea fish stocks, or

ii. not authorize these fishing activities to proceed.

Performance Review Panel Assessment and Recommendations:

- 1. The PRP views the current NAFO Exploratory Fisheries Protocol concentrates on bottom fisheries and focuses on avoiding negative impacts of VMEs in accordance with the UNGA Resolution 61/105. The Protocol implicitly recognizes the need for prior notification of exploratory fishing and that recording of catch, and other vital information, should be sufficiently detailed to conduct an assessment of activity⁸².**
- 2. The PRP noted that the Protocol is currently formulated in the context of improving knowledge about potential interactions of fisheries with seafloor organisms. In this respect, it does not provide the necessary generic/strategic framework to deal with the full range of uncertainties likely to arise from limited knowledge about new stocks or in respect to how a fishery develops. Both these considerations are crucial to building fore-knowledge of stock/fishery potential as well as the risk likely to be attached to over-rapid fishery development. Such fore-knowledge is itself essential for identifying the level of precaution to be applied to ensure the sustainable growth and endurance of the fishery.**
- 3. Taking account of the points made in the previous paragraph, the PRP considered that NAFO should review the Exploratory Fisheries Protocol with a view to developing a strategic framework for conservation and management measures for all potential new and exploratory fisheries. In this respect, NAFO may wish to take account of the way in which CCAMLR has approached the issue⁸³ in terms of developing a unified regulatory framework.**

⁸² By implication this would also suggest that any such assessment of activity would be essential during the development of an exploratory fishery to allow precaution to be applied and to collect vital information for a fishery, or stock, about which little may be known in terms of informing assessment of target stocks and associated qualities of the fishery.

⁸³ At: <http://www.ccamlr.org/pu/E/sc/reg-frw-intro.htm>.



4.6.4. NAFO conservation of marine biological diversity

209. Many of the attached considerations relevant to this section of the report have already been addressed in Section 4.3. The most notable of these include the Scientific Council's initiative aimed at developing an *EAF Roadmap* (see Section 4.2) and NAFO's efforts to give effect to *UNGA Resolution 61/105* (See Section 4.3).
210. The preamble of the *Amended Convention* expressly links NAFO's EAF development with safeguarding of the marine environment, conserving marine biodiversity, minimizing the risk of long-term, irreversible, adverse effects of fishing activities, and taking account of all ecosystem components. Under Article II (e) a key requirement is the need to preserve biodiversity. To give effect to these considerations, a number of NCEM addresses environmental, ecosystem and biodiversity concerns. These include:
- Article 12- Bycatch requirements;
 - Article 13- Gear Requirements; Annex XV- Authorized Topside Chafers; XXI- Shrimp Toggle Chains;
 - Article 14- Minimum Fish Size Requirements, Annex III- Minimum fish size requirements for Atlantic Cod, Greenland Halibut, American Plaice & Yellowtail Flounder;
 - Article 15(5)- Area and Time Restriction - Closure of six seamounts to bottom fishing;
 - Article 16- Coral and Sponge Protection Zone;
 - Article 17- Conservation and Management of Sharks;
 - Quota Table- Listing of stocks in TAC regulation & under fishing moratoria;
 - Chapter Ibis- Bottom Fisheries in the NAFO Regulatory Area
 - Footprint (Article 2.bis)
 - Fishing Protocol in new fishing areas (Articles 3bis, 4bis & Annex XXV)
 - Encounter provisions and species thresholds (Article 5bis), and
 - Resolution to Reduce Sea Turtle Mortality in NAFO Fishing Operations (NAFO Resolution 1/06; [FC Doc. 06/7](#) (NAFO, 2006d))

Performance Review Panel Assessment and Recommendations:

1. **The PRP commends NAFO for its progress in addressing environmental and biodiversity concerns.**
2. **NAFO's efforts to address potential threats to biodiversity in the *Convention Area* are largely linked to the management of relevant fisheries and their likely impacts. In this respect, NAFO has not articulated any specific plans aimed at developing ways to conserve biodiversity. The PRP sees the development of such plans as a strategic imperative for NAFO.**
3. **The PRP notes that NAFO has not yet attempted to formally determine the potential effects that areas closed to fishing are likely to exert in terms of affecting fishing, protecting habitats and conserving biodiversity in the *Convention Area*. NAFO in general, and the Scientific Council in particular, are encouraged to consider such matters.**
4. **The PRP encourages NAFO to consider whether activities other than fishing in the *Convention Area* may impact the stocks and fisheries for which NAFO is responsible as well as biodiversity in the *NAFO Regulatory Area*. Such activities might include oil exploration, shipping and recreational activities.**



4.6.5. Extent to which NAFO has adopted measures to minimize pollution, waste, discards, catch by lost or abandoned gear, catch of non-target marine living resources, and impacts on associated or dependent species through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques

211. The *Amended Convention*'s general principles (Article III) clearly call on NAFO to:

‘Take due account of the need to minimize pollution and waste originating from fishing vessels as well as minimize discards, catch by lost or abandoned gear, catch of species not subject to a directed fishery and impacts on associated or dependent species, in particular endangered species’.

212. A variety of measures are consistent with this invocation. These include:

- Monitoring of Waste & Discards (Article 28(4) - particularly 28(4)(ii) of the NCEM);
- Reporting Discard Data (Article 63 of the NCEM);
- Bycatch Requirements - Bycatch retained aboard (Article 12(1) of the NCEM); Bycatch in any one haul (Article 12(2) of the NCEM); Directed fishery bycatch (Article 12(3) of the NCEM);
- Shark Conservation & Management (Article 17 of the NCEM);
- Gear Requirements (Article 13 of the NCEM), and
- Resolution to Reduce Sea Turtle Mortality in NAFO Fishing Operations (NAFO Resolution 1/06; [FC Doc. 06/7](#) (NAFO, 2006d)).

213. Article 9 of the NCEM outlines the Div. 3NO Cod conservation plan and rebuilding plan. In paragraph 5 of the Article, the importance of capelin as source of food is specifically addressed in manner consistent with the EAF and the moratorium on Div. 3LNO Capelin is extended until at least 31 December 2012.

Performance Review Panel Assessment and Recommendations:

1. **The PRP commends NAFO on its significant progress in addressing biodiversity protection and management issues. In this respect, it encourages NAFO to continue addressing such matters.**
2. **As noted in Section 4.3, the PRP urges NAFO to further its efforts to introduce management measures to deal directly with environmental protection issues (e.g. pollution, discards of fish, discarding/ loss of fishing gear, protection of key food species etc.).**

4.6.6. Extent to which NAFO has adopted and is implementing effective rebuilding plans for depleted or overfished stocks including guidance for stocks under moratoria

214. Presently, there are three fish stocks managed by NAFO under a Rebuilding Plan: the SA 2+ Div. 3KLMNO Greenland halibut, since 2004; Div. 3NO Cod, since 2008; and Div. 3LNO American plaice, beginning in 2011.



SA 2+ Div. 3KLMNO Greenland Halibut:

215. Since 2004, SA2+ Div. 3 KLMNO Greenland Halibut has been under a 15-year recovery plan which aims to build the stock to an exploitable biomass of 140 000 t of the 5+ year class. In 2009, concerns were being expressed at the Fisheries Commission meeting that this objective would not be met.
216. The year previous (in 2008), the Scientific Council presented the above to the Fisheries Commission with a Management Strategy Evaluation (MSE) approach as an alternative way to structure decision-making concerning future efforts to rebuild the stock ([Meet. Proc. 2008-09](#), Section III (NAFO, 2009b), [SCS Doc. 08/13](#) (NAFO, 2008f)). The MSE involves evaluating alternative management strategies to encompass clearly defined harvest controls in respect to a range of simulated realizations of the true fishery and the associated dynamics of the stock.
217. In 2010, a Fisheries Commission Working Group (WG) on Management Strategy Evaluation met three times to formulate recommendations and identify options as a basis for risk-based management decisions on a TAC for the stock in 2011 and beyond ([FC Doc. 10/29](#) (NAFO, 2010d)). In formulating its options and recommendations, the WG evaluated various operational models, harvest control rules and performance statistics. The Fisheries Commission adopted the WG's recommendations and agreed a management strategy which set a TAC input value of 17 500 t in the agreed Harvest Control Rule. This resulted in a TAC of 17 185 t for SA 2+ Div. 3KLMNO Greenland Halibut in 2011.
218. This work will continue in 2011, with the WG being tasked to develop guidelines to address "exceptional circumstances" and so to provide scientific justification for over-riding the TAC. The WG is scheduled to meet in September 2011 (prior to the Annual Meeting) and is expected to forward new recommendations to the Fisheries Commission at the 2011 Annual Meeting. Post-2011, further refinement of the MSE will continue following its initial implementation ([FC Doc. 10/12](#) (NAFO, 2010i)).

Div. 3NO Cod:

219. Since 2008, Div. 3NO Cod has been under a conservation plan and rebuilding strategy ([FC Doc 07/8](#) (NAFO, 2007d)). The plan and strategy are aimed at reaching a sustained SSB level (or 'recovery milestone') above the B_{lim} of 60 000 t to bring the stock into line with the requirements of the PAF ([FC Doc 07/8](#) (NAFO, 2007d)). In this respect, it should be noted that the Scientific Council advised in 2008 that seasonal and temporal changes to the Yellowtail Flounder fishery could substantially reduce Div. 3NO Cod bycatch. By contrast, no single gear modification could be recommended to reduce Div. 3NO Cod bycatch. The latest assessment of the Div. 3NO Cod stocks is that the SSB level is 21% of the B_{lim} (i.e. 12 700 t) ([SC Rep. 2010](#), p.28-30 (NAFO, 2011b)).

Div. 3LNO American Plaice:

220. From 2011, an interim Div. 3LNO American Plaice conservation plan and rebuilding strategy will be in place. The objective is to achieve, and maintain, the SSB at B_{msy} (175 000 t) or above. It is reasonably expected that B_{lim} (50 000 t) will be reached within the next six years (2011 to 2017) ([FC Doc. 10/13](#) (NAFO, 2010j)). The latest Scientific Council assessment of Div. 3LNO American Plaice is that the SSB has been increasing since 1995 and currently stands at 33 000 t ([SC Rep. 2010](#), p. 22-24 (NAFO, 2011b)). A new *Working Group of Fishery Managers and Scientists on Conservation Plans and Rebuilding Strategies* has been established ([FC Doc. 10/11](#) (NAFO, 2010h)) and will meet in 2011 to review the Cod and American Plaice Rebuilding Plans.

Performance Review Panel Assessment and Recommendations:

1. The PRP is encouraged by recent NAFO developments aimed at further developing conservation plans and rebuilding strategies for stocks under



- moratoria. It especially commends NAFO for developing a scientifically-based approach to managing 2+3 KLMNO Greenland Halibut using an MSE approach;**
- 2. The PRP welcomed the forming of the new *Working Group of Fishery Managers and Scientists on Conservation Plans and Rebuilding Strategies* as a way to address some of the concerns raised in Sections 4.5 and 4.6.2; and**
 - 3. NAFO is encouraged to broaden consideration of MSE-type approaches to managing other fisheries for which it is responsible.**

4.7. Capacity management

221. The *1978 NAFO Convention* does not make a specific reference to “fishing capacity”. However, as noted in Chapter 3, Article III (f) (‘General Principles’) of the *Amended Convention* refers to fishing capacity directly in stating that one of the *Convention’s* aims is to:

Prevent or eliminate overfishing and excess fishing capacity, and ensure that levels of fishing effort do not exceed those commensurate with the sustainable use of the fishery resources’.

222. The Fisheries Commission discussed fishing capacity management for the first time at its 2006 meeting ([Meet. Proc. 2006-07](#), Section III, p. 164 (NAFO, 2007b)). An action plan was outlined and this entailed establishment of a designated working group to consider the problem of fisheries overcapacity. These actions clearly recognized the potential of excess fishing to undermine NAFO’s conservation objectives.

223. The above working group’s primary task is to advise the Fisheries Commission on corrective actions and to develop a formal *NAFO Plan of Action for the Management of Fishing Capacity* ([Meet. Proc. 2006-07](#), Section III, p. 164 (NAFO, 2007b)). No further action has since been taken.

224. NAFO monitors vessels activity and fishing effort with a view to prevent, reduce or eliminate excess fishing capacity in the NAFO *Area*. The declaration of fishing moratoria on a number of species (Table 6 and [Table 7](#)) constitutes an indirect way to regulate fishing capacity, provided that vessels targeting moratoria species do not enter other NAFO fisheries (i.e. there is only a re-distribution, rather than a reduction, of fishing effort). The Greenland Halibut fishing plan explicitly requires a reduction of fishing effort (Article 7.7 of the NCEM).

225. Fishing effort is monitored during STACTIC’s *Annual Compliance Review*, and trends in the number of active vessels and the attached fishing days by fishery type are analyzed. Figure 45 and Figure 46 ([FC Doc 10/28](#) (NAFO, 2010q)). The monitoring of fishing relies on electronic notification by Contracting Parties of vessel participation in a fishery *via* the VMS (Article 26 of the NCEM)⁸⁴. This notification has no specific zone entry or exit requirements attached other than catch reporting requirements under Article 27 (1) (a) and 27 (1) (b) of the NCEM. Related information on potential fishing effort is provided under Annex IV of the NCEM (i.e. vessel capacity and power) and Annex X (2) (notably days fished) and X (3)⁸⁵ (catch and in-zone days fished on crossing Division 3L boundary for shrimp fishery).

226. Notified vessels are listed in the *Vessel Registry* (Articles 18, 20 & Annex IV of the NCEM) as ‘active’ NAFO vessels. Vessels that are inactive for two consecutive years are automatically removed from the *Registry*. Contracting Parties notify the Secretariat on any variation in a notification by adding or deleting their vessels in the *Registry* at any time (Article 20 (7) of the NCEM). The list of active vessels is posted on the Members Page of the NAFO Website.

⁸⁴ Electronic notification replaced the previous annual notification procedure following inception of the VMS in 2003.

⁸⁵ In 2011, daily reporting of catch through the VMS for all fishery types in all Divisions became a requirement (see Articles 27 (1)(c) and 27(3), which would make monitoring of catch and fishing effort more effective.



227. It seems that, up to now, although NAFO has monitored the number of active vessels and fishing effort, no action has been taken by the Organization itself to prevent or eliminate excess fishing capacity. This has been left to the responsibility of the Contracting Parties. However, figure 45 clearly shows the dramatic decrease in both the number of active vessels and fishing effort as represented by days presence. All management measures adopted by the Organization seem to be focused on outputs (e.g. TAC) and not on inputs (e.g. effort control). The FAO IPOA on the Management of Fishery Capacity has not been addressed.

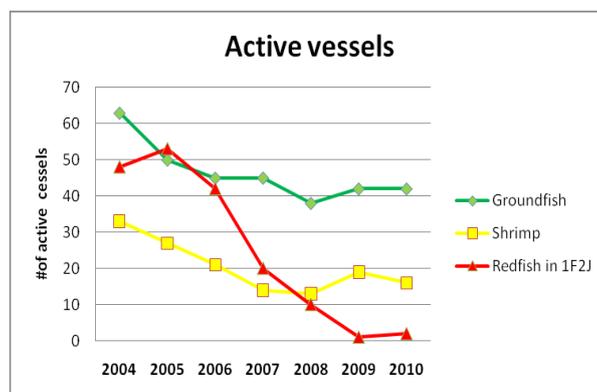


Figure 45. Number of vessels active in the NAFO Regulatory Area by fishery type.

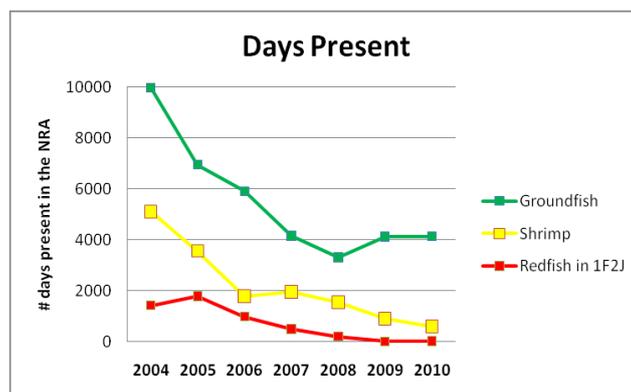


Figure 46. Number of and vessel days in the NAFO Regulatory Area by fishery type.

(Data Source: VMS Position Reports 2004-2010)

Performance Review Panel Assessment and Recommendations:

1. The PRP commends NAFO for its monitoring of vessels activity and fishing effort to prevent, reduce or eliminate excess fishing capacity in the NAFO Regulatory Area. It also noted that the Greenland Halibut Rebuilding Plan explicitly requires a reduction of fishing effort (Article 7.7 of the NCEM).
2. The PRP views current NAFO management measures to be extensive and largely effective. Nevertheless, it urges the Fisheries Commission to further consider how the management of fishing, particularly excess capacity may augment stock sustainability and the meeting of the Convention's objectives.

4.8. Compatibility of management measures

228. UNFSA Article 7 balances the rights of coastal States with those of all States engaged in fishing on the high seas. For the former, such rights provide for coastal State management of the marine living



resources within areas under national jurisdiction. The latter means that all States are able to exercise their right to allow their nationals to engage in fishing on the high seas in accordance with UNCLOS.

229. Among the 12 NAFO Contracting Parties, Canada, Greenland, France, in respect of St Pierre and Miquelon, and the United States are considered coastal States. Divisions 3M, 6E, 6F, 6G, and 6H are confined to the *Regulatory Area* under the *NAFO Convention*. There is occasional fishing activity in 6G, and no active fishery in the other mentioned Divisions in Subarea 6. All other Divisions or Subareas occur in both the *Regulatory Area* and/or in areas under coastal State jurisdiction (See Figure 1).
230. As manifest in the Fisheries Commission's annual agenda, adopted conservation and management measures are distinctly identified as being applicable within the *Regulatory Area* (e.g. Division 3M), or to stocks that straddle national boundaries (e.g. the nose and tail of the Grand Banks in Division 3LNO). When stocks straddle the 200-mile limit, one alternative would be to establish two different TACs, one for inside and another for outside the EEZ, making sure, however, that they were compatible with the distribution of the stock and adequate to ensure its sustainability. NAFO, however, in most cases, has preferred to set a single TAC and address the interests of relevant coastal States by means of quota allocation.

Examples of NAFO-Coastal State Compatible Measures

Division 2J + 3KL Cod:

231. Article 4 of the NCEM clearly outlines a number of linkages between NAFO measures and those of Canada. The measures are seen as being without precedent for the future in terms of fixing catch limits or criteria for the quota distribution of other stocks. Under Article 4 of the NCEM, they require the:
1. Fisheries Commission to obtain annually the decision of Canada on the limit it has established for catches by Canadian fishers. This decision shall take into account the assessment of this stock by the Scientific Council. This limit shall be 95% of the TAC for this stock.
 2. Fisheries Commission to establish a catch limit in the Regulatory Area that shall apply to the other Contracting Parties. This limit shall be 5% of the TAC for this stock.
 3. Total catch limits to be set in accordance with paragraphs 1 and 2 shall constitute the TAC for Div. 2J+3KL cod.
 4. Distribution key to apply to the 5% figure when the fishery in the Regulatory Area is resumed shall be 65.4% for the EU and 34.6% for the other Contracting Parties.
232. The measures in Article 4 of the NCEM shall apply when a decision is taken to allow the resumption of fishing for cod in the Regulatory Area.
233. A moratorium on directed fisheries for Div. 3L (Div. 2J+3KL) cod was implemented by the coastal State (Canada) and NAFO in 1992. There has been a small artisanal fishery, restricted to waters inside a 12nm limit, by the coastal State (Canada) since 1999.

Division 3LNO Yellowtail Flounder:

234. Footnote 5 of the NCEM Quota Table (Appendix XII) ([FC Doc. 11/1](#) (NAFO, 2011a)) states that:

‘Parties shall inform the Executive Secretary before 01 December 2010 of the measures to be taken to ensure that total catches do not exceed the levels indicated’.

235. The above footnote has been in the Quota Table since 1998 when fishing on the Div. 3LNO Yellowtail Flounder stock was re-opened, post the 1995-1997 moratorium. In its application it is



directed at two coastal States (Canada and France [for St Pierre and Miquelon]) which receive the bulk of the TAC allocated: 16 915 t out of a total TAC of 17 000 t.

Division 3O Redfish:

236. The mesh size regulations of Article 13(f) of the NCEM have been in place since 2008 to harmonize NAFO requirements with Canadian domestic mesh size regulations for the portion of the stock in Canadian waters.

Subarea 2 + Division 3KLMNO Greenland Halibut:

237. The Scientific Council provides scientific advice on the Greenland Halibut TAC for Subarea 2 + Division 3KLMNO. However, the quotas specified in the Quota Table (Appendix XII) only apply to Division 3LMNO. 74.1% of the TAC must be taken in Division 3LMNO and this is shared between Contracting Parties, including Canada as a coastal State, through an agreed allocation scheme. The remainder of the TAC (25.9%) is exclusively allocated to Canada, and must be taken in Subarea 2 + Division 3K, within the Canadian EEZ. For example, the 2011 TAC for the stock was set at 17 185 t (12 734 t in Division 3LMNO; 4 451 t in Subarea 2 + Division 3K) (See [FC Doc. 10/29](#), item 10.9 (NAFO, 2010d)).

Performance Review Panel Assessment and Recommendations:

- 1. The PRP notes that a number of NAFO conservation and management measures currently in force are aligned with regulations being applied by NAFO coastal States, and reiterates its associated recommendation as outline in Section 3.2.5.**

4.9. Fishing Allocations and Opportunities:

238. No reference is made to the allocation of fishing opportunities for new members or participants in either the *Current* or *Amended Convention*. They also remain silent on taking express account of such matters as the needs of coastal and/or developing States outlined in UNFSA Article 11. However, in 1999 the General Council adopted a resolution to deal with allocation of fishing opportunities to future new members ([GC Doc. 99/8](#) NAFO, 2008g). The resolution noted that:

1. NAFO is an open organization. Non-members may join the Organization by depositing an instrument of accession in accordance with Article XXII of the Convention. In accordance with Article IV of the Convention, all Contracting Parties are members of the General Council.
2. Should any new member of NAFO obtain membership in the Fisheries Commission, in accordance with Article XIII (1) of the Convention, such new members should be aware that presently and for the foreseeable future, stocks managed by NAFO are fully allocated, and fishing opportunities for new members are likely to be limited, for instance, to new fisheries (stocks not currently allocated by TAC/ quota or effort control), and the “Others” category under the NAFO Quota Allocation Table.

239. Finally, Article 3 of the NCEM states:

Where no agreement can be reached by the Fisheries Commission on a NAFO managed stock, through either consensus or vote, the Fisheries Commission shall maintain the existing relative percentage quota shares for that stock, as reflected in Annex I. This shall be deemed to be a proposal of the Fisheries Commission pursuant to Articles XI and XII of the Convention for the succeeding calendar year

240. Therefore, although NAFO declares itself as an “open organization”, where new members may join, at any time, by depositing an instrument of accession, it is clear that any new member would have very limited, if any, fishing opportunities. In this context it should also be noted that in practice the existing Contracting Parties have not obtained fishing opportunities for stocks other than those on which they customarily fish.



Performance Review Panel Assessment and Recommendations:

1. The PRP noted that NAFO has considered possible allocation of fishing opportunities to new members (*Resolution to Guide the Expectations of Future New Members with Regard to Fishing Opportunities in the NAFO Regulatory Area* (See also Section 3.2.6).
2. It also noted that presently, and for the foreseeable future, stocks managed by NAFO are fully subscribed. This signifies that fishing opportunities for new Members are likely to be limited, for instance, to new fisheries.
3. If the situation should evolve, the PRP suggests that the above Resolution conditions may need to be reviewed in respect of NAFO addressing all the explicit provisions of UNFSA Article 11 that need to be taken into account when allocating fishing opportunities to new Members.



5. Compliance and Enforcement

5.1. Flag State duties

1. NAFO has developed, and now has in place, a comprehensive system of Conservation and Enforcement Measures ([FC Doc. 11/1](#) (NAFO, 2011a)). The currently effective NCEM have incorporated the conservation and enforcement measures as adopted by NAFO previously in 1982, and then revoked or amended in 1988, 1991, 1992, 1994 and 1996. Beginning from 1996 NCEM are, where appropriate, reviewed and updated annually.
2. The present NCEM apply to all fishing vessels used, or intended for use, for the purposes of commercial fishing activities conducted on fisheries resources in the NAFO Regulatory Area as defined in Article I of the NAFO Convention. Unless otherwise provided, research vessels are not restricted by NCEM pertaining to the taking of fish, in particular, concerning mesh size, size limits, closed areas and seasons.
3. Under that document (NCEM), the duties of NAFO Contracting Parties in a flag State capacity are to comply with, and enforce, the following rules (measures) adopted by NAFO:

I. Conservation and management measures, concerning:

- quota allocations and catch limits;
- requirements regarding by-catch, gear and mesh size, minimum fish size, area and time restrictions, including coral and sponge protection zones;
- special measures to prevent significant adverse impacts of bottom fishing activities on vulnerable marine ecosystems known to occur or likely to occur in the NAFO Regulatory Area (NRA);

II. Control measures, which include:

- authorization to fish and ensuring that fishing vessels flying its flag comply with applicable NCEM;
- chartering arrangements;
- maintaining of vessel register;
- marking of fishing vessels and gear used by fishing vessels;
- product labeling requirements;

III. Monitoring of fisheries, by way of:

- recording of catch and stowage;
- reporting of catch and fishing effort;
- Vessel Monitoring System (VMS);
- communication of catches;
- observer program;

IV. Joint Inspection and Surveillance Scheme:

- assignment of inspectors of the fishery control services to this Scheme;
- inspection procedure;
- agreed placing of inspectors assigned by one Party on board inspection vessels or aircraft of another Party;
- ensuring equitable distribution of inspections according to activities ratio (Secretariat's annual report on the objectivity in the realization and distribution of inspections between the Contracting Parties);



- inspector or competent authority presence for a Contracting Party with more than 15 fishing vessels operating at any one time in the NRA;
- general prohibition of use of arms in relation to inspection;
- notification to the Executive Secretary by 1 December each year of plans of inspection and surveillance activities for the following calendar year and posting this information on the secure part of the NAFO website, as well as of authorities competent to receive immediate notice of infringements;
- follow-up on infringements and procedures to deal with serious infringements;
- flag State enforcement measures with respect to its vessel, if it has committed an infringement;

V. According to Port State Control Scheme (Articles 47, 48 of the NCEM):

- to ensure that the master of any fishing vessel entitled to fly its flag complies with relevant obligations according to NCEM;
- when a fishing vessel intends to land or tranship, or where the vessel has engaged in transshipment operations outside a port, to confirm by returning a copy of the form, PSC 1 or 2, transmitted pursuant to NCEM with part B duly completed;
- to designate the competent authority and to communicate this information to the NAFO Secretariat for dissemination to Contracting Parties;

VI. Under Chapter VI of NCEM “Scheme to Promote Compliance by Non-Contracting Party Vessels with Recommendations Established by NAFO”, the NAFO Contracting Parties in flag State capacity are obliged to:

- upon sighting and identification of non-Contracting Party (NCP) vessels as engaging in fishing activities in the Regulatory Area, immediately inform the vessel and the Secretariat of this, inspecting, if appropriate, such vessel at sea;
- ensure that their vessels do not receive or deliver transshipments of fish to or from a NCP vessel or engage in joint fishing operations with such vessels;
- take all necessary measures, to the extent possible in accordance with their applicable legislation, with regard to vessels on the IUU List, including:
 - prohibiting fishing vessels, support vessels, refueling vessels, the mother-ships and cargo vessels flying their flag to assist vessels on the IUU List in any way, or to engage in fish processing operations or to participate in any transshipment or joint fishing operations with vessels on the IUU List;
 - prohibiting the supply of provisions, fuel or other services to vessels on the IUU List;
 - prohibiting the entry into their ports of such vessels, except in case of force majeure;
 - prohibiting the change of crew, except as required in relation to force majeure;
 - refusing authorization of such vessels to fish in waters under their national jurisdiction;
 - prohibiting the chartering of such vessels;
 - refusing to entitle such vessels to fly their flag;
 - prohibiting where traceable the imports of fish coming from such vessels;
 - prohibiting the landing of fish coming from such vessels;
- encouraging importers, transporters and other sectors concerned, to refrain from negotiating and from transshipping of fish caught by such vessels;
- collecting and exchanging any appropriate information regarding vessels appearing on the IUU List with other Contracting Parties, NCPs and other RFMOs with the aim of detecting, controlling and preventing false import/ export certificates regarding fish from such vessels;

VII. Those Contracting Parties which have vessels with functional VMS systems to send electronic “observer reports” and “catch reports” with one hour interval have to comply with Scheme of Electronic Reporting, Satellite Tracking and Observers (Chapter VII of NCEM). By



way of derogation from NCEM, such Contracting Parties may withdraw observers from vessels applying the provisions of this chapter on the condition that the technical facilities on board the vessel necessary to send electronic “observer reports” and “catch reports” have been tested with the NAFO Secretariat and Contracting Parties with an inspection presence in the Regulatory Area. Such withdrawal can apply for no more than 75% of the time that the vessel or vessels spend in the Regulatory Area during the year. Masters of vessels and observers applying the provisions of this Scheme have to transmit daily reports to the Secretariat by Division.

4. Thus, generally speaking, the duties of NAFO Contracting Parties as flag States are to comply with rules and regulations contained in basic texts of the Organization, NCEM being of primary importance in this regard among them.
5. Such compliance is achieved through adoption of national regulations to ensure that fishing is carried out in conformity with NCEM, issuing of authorizations (or licenses) to fish, as well as relevant activities to ensure compliance by its vessels while fishing in NRA (*eg.* monitoring, control, surveillance and others).
6. Under the current Vessels Register 197 fishing vessels of more than 50 gross tons are authorized to fish in NRA by 11 NAFO Contracting Parties ([FC Doc. 10/28](#) (NAFO, 2010q)). In 2010 there were 53 active vessels fishing in NRA.
7. The extent to which NAFO Contracting Parties are fulfilling their duties as flag States may be assessed basing on relevant NAFO documents dealing with compliance as well as control and enforcement issues, those referring to STACTIC (and Fisheries Commission) activities being of primary attention among them (a detailed description of STACTIC functions can be found in Appendix V and a brief history of NAFO conservation and management measures can be found in Appendix XIII).
8. At the 32nd annual meeting in September 2010 the Annual Compliance Review (Compliance Report for Calendar Year 2009, comparing the information for the years 2004 to 2009) was adopted ([FC Doc. 10/28](#) (NAFO, 2010q)). As per the document the compliance trends in NRA for the period from 2004 through 2009 are the following:
 - The total fishing effort in the NAFO area continues to decline both in terms of number of vessels and fishing days in the NRA since 2004. There was an increase in the number of vessels participating in the groundfish and shrimp fisheries in 2009, but this increase was offset by a decline in the number of vessels participating in the redfish fishery. Further, the change in number of vessels participating in individual fisheries (61 in 2008 and 62 in 2009) in relation to the change in the total number of active vessels (60 in 2008 and 51 in 2009) indicates that more vessels participated in multiple fisheries in 2009 than in 2008. Although, there was a slight drop in total fishing effort in 2009 in comparison to 2008 (0.8 percent), there was a 25 percent increase in effort in the groundfish fishery. Conversely, total fishing effort declined substantially in both the shrimp and redfish fisheries (43 percent and 98 percent, respectively).
 - The number of at-sea inspections has declined overall since 2004, despite a slight increase in 2006. This is likely due to the reduced number of active vessels fishing in the NRA. Overall, the rate of at sea inspections per vessel fishing day has increased since 2004, from 2.4 percent in 2004 to 4.8 percent in 2008, with a slight decline to 4.7 percent in 2009. However, the at-sea inspection rate declined dramatically for the redfish fishery in 2009 (to 0 percent) since there was hardly any activity in this fishery. The at-sea inspection rate also declined by 11 percent for the groundfish fishery (from 5.3 to 4.7 percent), but increased by 13 percent (from 4.0 to 4.5 percent) for the shrimp fishery. This may indicate more compliance concerns involving the shrimp fishery in 2009 in comparison to the groundfish fishery.
 - The number of citations resulting from at-sea inspections varied from 5 to 20 during the 5-year period. The at-sea citation rate decreased slightly since 2005, with an increase in 2009, but has remained generally stable over the time period.



- The number of citations resulting from port inspections increased to a peak of 19 between 2004 and 2007, but has declined dramatically since then, with only 1 citation in 2009.
- There was a 45 percent decline in port inspections from 2004 to 2007, but a slight increase in 2008 (6 percent), then a subsequent decline again in 2009 (29 percent). The number of vessels cited by port authorities per year varied from a high of 16 in 2007 to a low of 1 in 2009. The number of apparent infringements issued ranged from 27 in 2007 to 1 in 2009, demonstrating a 96 percent decline since 2007.
- During the 6 year period, a total of 115 apparent infringements resulted from at-sea inspections and 60 from port inspections. The apparent infringement category “Misrecording of Catches” (Both Stowage and Inaccurate recording related) accounted for 37 of the apparent infringements issued at sea (33 percent) and 32 in port (53 percent). These infringements were issued more frequently in relation to groundfish fisheries.
- The number of cases having no follow-up information from the Contracting Party has been relatively stable since 2006 despite an overall decline in the number of citations issued. Thus, lack of follow-up on apparent infringements remains a concern. For example, the percentage of citations with no follow-up relative to total citations issued was 14 percent in 2006 and 38 percent in 2009. The Contracting Party may be following up on the apparent infringement, but may not have reported the status back to the NAFO Secretariat.
- Timeliness of submission of port inspection and observer reports by Contracting Parties has greatly improved, but has remained steady for at-sea inspection reports.

Performance Review Panel Assessment and Recommendations:

- 1. The issues related to the Contracting Parties’ fulfillment of their duties have been of primary importance to the Organization. The work in this field is under permanent review, primarily in the framework of the Fisheries Commission and its subsidiary body, STACTIC, and constant efforts are taken to improve efficiency of compliance, control and enforcement activities of NAFO Contracting Parties. To this end, effective and robust compliance system, consisting of adequate legal foundations and up-to-date control and enforcement mechanisms, is established and functions effectively in the Organization.**
- 2. Based on the information available, it is apparent that over time, but particularly in the past decade, the mechanisms in place to ensure compliance by flag States, as well as the performance of flag States, have improved significantly in NAFO.**
- 3. NAFO should be commended for developing and further improving the comprehensive Annual Compliance Review- a high level document in comparison with similar efforts of many other fishery management bodies.**
- 4. In terms of compliance with NCEM in the Organization, the issues of equitable sharing between Contracting Parties of inspections coverage (and/or related costs, as was suggested at the 2003 Annual Meeting), timeliness and quality of data submitted by the Contracting Parties according to NCEM, and timely and effective follow-up on infringements, should be further addressed.**

5.2. Port State Measures

9. NAFO Port State Control Measures (PSCM) were adopted at the 30th NAFO annual meeting in September 2008, entered in force in January 1, 2009, and are reviewed annually. The PSCM proposal/recommendation made reference to the draft Agreement on Port State Measures which was the precursor to the [*2009 FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported, and Unregulated Fishing*](#) (FAO, 2009b). The provisions in the PSCM proposal were based on the following four principles:



1. Prior notification
 2. Confirmation from flag State
 3. Authorization to land or tranship
 4. Transparency
10. The adopted PSCM are included in the NCEM as Chapter V- Port State Control, including Articles 45 to 50:
- Article 45 – Scope
- Article 46 – Duties of the Port State Contracting Party
- Article 47 – Duties of the Flag State Contracting Party
- Article 48 – Obligations of the Master of a Fishing Vessel
- Article 49 – Duties of the Executive Secretary
- Article 50 – Serious Infringements.
11. The extent to which NAFO Contracting Parties have effectively implemented the measures relating to the exercise of their rights and duties as Port States may be assessed according to the relevant NAFO documents, in particular Fisheries Commission and STACTIC meeting proceedings, dealing with reviewing of compliance issues.
12. The [List of designated ports, prior notifications periods and competent authorities](#), is posted on the NAFO website (NAFO, 2011u). It includes information from 9 Contracting Parties (currently the data from Cuba, Japan, Republic of Korea, and Ukraine is not on the list). Minimum prior notification periods and competent authorities of the Port State Contracting Parties are indicated on the List. Pursuant to Article 47.2 of the NCEM, information on regarding designated authorities for Flag States Contracting Parties is also given.
13. Although the current NAFO Port State Control Measures as a scheme only became effective from January 1, 2009, some elements of such activities had already been in force in NAFO⁸⁶ and the information available permits to give a brief summary of their implementation (Appendix XIV).

Performance Review Panel Assessment and Recommendations:

- 1. Port State Measures adopted by NAFO are in conformity with the relevant provisions of Article 23 of UNFSA;**
- 2. The NAFO Port State Measures are comprehensive and harmonized with the neighboring RFMO, NEAFC, which contributes to their effectiveness and efficient implementation;**
- 3. The absence of new IUU vessels in the NAFO Regulatory Area since 2006 may be attributed in part to the Port State Control measures in force;**
- 4. Further harmonization of the relevant rules of NAFO with the relevant provisions of the FAO PSM Agreement is recommended. Considering that NEAFC is currently undertaking similar work, the PRP suggests that the NEAFC experience in this regard be taken into account by NAFO, and**

⁸⁶ In 2005 NCEM, Chapter V “Inspections in port” (Article 38- Port Inspection Procedures, Article 39- Transmission of Port Inspection Reports): A copy of the results of the port inspection shall be transmitted to the Executive Secretary within 30 days as from the date on which the landing was completed and shall be provided to other Contracting Parties on request. ([FC Doc. 05/1](#) (NAFO, 2005c)).



5. NAFO should, to the extent possible, cooperate with other RFMOs in order to enhance the efficiency of its PSM.

5.3. Monitoring, Control and Surveillance (MCS)

14. NAFO has adopted a comprehensive array of MCS Measures. A historical perspective of the Control Measures and Monitoring of Fisheries provisions in the NAFO Conservation and Enforcement Measures can be found in Appendices X and XIII. Any vessel operating in the NAFO Convention Area is required to have an authorization to fish and needs to be included in the NAFO Vessel Register. Vessels listed in the Register must be equipped with a vessel monitoring device that can transmit position and haul reports through the Vessel Monitoring System (VMS). The position reports (POS) are transmitted every hour including information on date/ time, speed, and course. In addition to the hourly position reports transmitted through the VMS, vessels transmit:
- Catch-on-Entry (COE)- Quantities of fish in the hold before entering the NRA;
 - Catch (CAT)- Reporting of catches on a daily basis, for all species by Division;
 - Catch (COB)- Reporting of catches prior to Transshipment (TRA)/ Quantities of fish transhipped, reported both by donor and receiving vessel;
 - Catch-on-Exit (COX)- Quantities of fish in the hold while exiting the NRA; and
 - Port of Landing (POR)- Quantities to be landed, for each landing after transshipment.
15. Fishing vessels and fishing gears are required to be marked in accordance with FAO Standards. Fishing masters record their catches on a daily basis in the vessel logbook in a specified format. Besides, vessels must also keep a stowage plan that shows the location of different species in the holds. Each Contracting Party is required to report its provisional monthly catches by species and stock area, as well as provisional monthly fishing days in the shrimp fishery. The Secretariat compiles the reports and these are circulated to the Contracting Parties at prescribed deadlines. The monthly provisional catch reports also serve to monitor the quota allocation of the Contracting Parties. Catches of shrimp in Division 3L are to be reported daily.
16. The NAFO Observer Program dates back to 1992. All fishing vessels are to carry at least one independent observer at all times while fishing in the NRA. The observer monitors the vessel's compliance, estimate catches, record gear type and gear details, verify entries in the logbook. When an infringement is detected, the observer is required to conduct an inspection of the vessel. The observer reports are submitted to the Secretariat within 30 days after the end of a deployment.
17. NAFO has a Joint Inspection and Surveillance Scheme (Chapter IV, of NCEM). Inspections and surveillance are to be carried out by inspectors of the fishery control services of CPs following their assignment to the Scheme. Inspectors assigned by one Party may be placed onboard inspection vessels or aircraft of another Party.
18. The total number of at-sea inspections conducted in 2010 was 214, amounting to a frequency rate of at-sea inspections in relation to the effort (number of inspections per vessel-days per year) of close to 5% (4.5%) (Figure 48). There were also 97 Inspections in port. The reduction in the number of at-sea inspections mirrors the reduction in the number of vessels operating in the NAFO Regulatory Area. Despite such a reduction, the inspection rate increased from 2004 to 2010 (Figure 47).





Figure 47. Inspection rates (number of at-sea inspection/ vessel-days) in the NAFO Regulatory Area by fishery type.

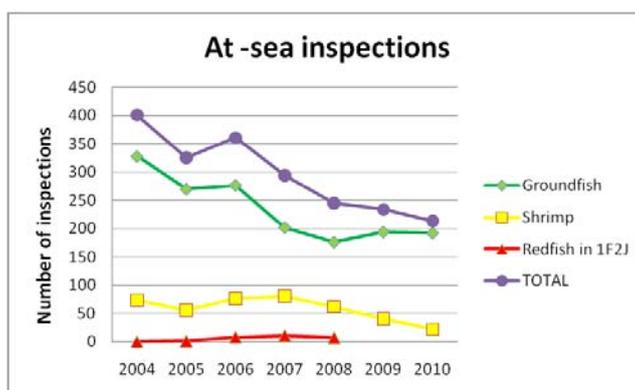


Figure 48. Inspection rates (number of at-sea inspection/ vessel-days) in the NAFO Regulatory Area by fishery type.

Performance Review Panel Assessment and Recommendations:

1. NAFO MCS system is extensive, comprehensive and in conformity with the standards set by the relevant international instruments.
2. For the purpose of traceability, NAFO could consider whether to expand Article 23 in the Conservation and Enforcement Measures in order that all catches are labeled according to the stock area.

5.4. Follow-up on infringements

19. Currently following-up on infringements is provisioned in NCEM ([FC Doc. 11/1](#) (NAFO, 2011a)).
20. Infringements are mainly detected by at-sea inspectors conducting random inspections on NAFO vessels operating in the NAFO Regulatory Area. Whenever an inspector observes an infringement of the NCEM, the inspector is required to note the infringement in the inspection report, sign the entry and obtain the countersignature of the master. The inspector may request that the master remove any part of the fishing gear. An inspection seal is to be affixed securely to the inspected gear and must be preserved until examined by the inspector of the Contracting Party for the inspected vessel, who then determines the subsequent disposition of the gear. NAFO inspectors cite a vessel if they have reason to suspect that it has breached one or more NAFO regulation. The following acts are considered by NAFO to be “serious infringements”:

- fishing under “Others” quota without prior notification (Article 3 of the NCEM – Quotas);
- directed fishing for a stock under a moratorium (Article 12 – Bycatch requirements);



- directed fishing for stocks after the date of closure when the quota uptake reached 100% (Article 3 – Quotas) ;
 - fishing in a closed area or with a prohibited gear (Article 15 - Area and Time Restrictions);
 - mesh size violations (Article 13 - Gear Requirements);
 - unauthorized fishing (Article 18 – Authorization to Fish);
 - mis-recording of catches (Article 24 – Recording of Catch and Stowage);
 - interference with the satellite monitoring system (Article 26 – Vessel Monitoring System)
 - catch communication violations(Article 8 Greenland halibut – Additional Control Measures and Article 27 – Communication of Catches);;
 - preventing inspectors or observers from carrying out their duties (Article 28 – Observer Program and Article 34 – Obligations of Vessel Masters During Inspection)
21. Thus, the main flag State requirement is to follow-up infringements to conservation and managements measures. This requirement is as prescribed by internationally agreed instruments and has been adequately incorporated into NAFO basic texts and procedures. In terms of practical implementation, other Contracting Party activities may be mentioned, as noted in various NAFO meeting documents.
22. Basically, and in accordance with Rule 5.1 of the NAFO Rules of Procedure for the Fisheries Commission, the review and evaluation of the NAFO Contracting Parties' activities relating to compliance and the follow-up of infringements has been performed annually by STACTIC. Further approval is provided by the Fisheries Commission of STACTIC's conclusions and recommendations on improving compliance in the NRA.
23. From 2004 to 2010, NAFO at-sea inspectors issued a minimum of 5 citations in 2008, and a maximum of 20 citations in 2005. The annual citation rate (the number of citations issued in relation to the number of inspections conducted) for at-sea inspections declined between 2005 and 2008, but increased in 2009 (Figure 49). In contrast, the citation rate for port inspections more than tripled between 2004 and 2007, but declined dramatically in 2008 and 2009, with 2009 being the lowest in the time series, at 1.1 percent.

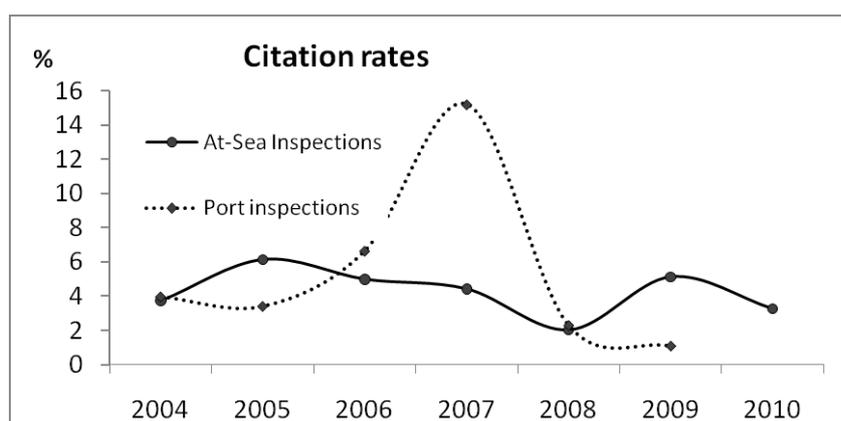


Figure 49. Percentage of inspections that resulted in a citation at sea and in port.

24. Specifically in regard to the following-up on serious infringement, the competent authorities of the flag State Contracting Party is obliged to take immediate judicial or administrative action in conformity with national legislation against the nationals responsible for the vessel flying its flag where the measures adopted by NAFO have not been respected. The sanctions may include: fines, seizure of illegal fishing gear and catches, sequestration of the vessel, suspension or withdrawal of authorization to fish, and reduction or withdrawal of the fishing quota. Contracting Parties shall report



- each year the action taken during the previous year concerning infringements notified to it by a Contracting Party.
25. Under Article 42 of the NCEM, Contracting Parties are required to report to the Secretariat the action taken concerning infringements notified to it by a Contracting Party. The infringements continue to be listed on each subsequent report until action is concluded under the laws of the flag State. The report is also required to indicate the current status of the case (e.g. case pending, under appeal, still under investigation) and describe any penalties imposed. The legal procedure can take longer than one year and it is, therefore, not expected that all cases originating during the previous year could be resolved in the following one. In general, it appears that most cases are resolved within a 2-year time period. In 2009, of 26 processed cases, 13 (50%) were new citations, 6 cases (23%) were pending, 2 cases (8%) were resolved and 5 (19%) had no follow-up information.
26. The Standing Committee on International Control (STACTIC) conducts an Annual Compliance Review in accordance with Rule 5.1 of the Rules of Procedure for the Fisheries Commission. Fishing reports and inspection reports are received by the Secretariat. They are compiled annually and submitted to STACTIC which prepares the Compliance Report. Infringements and follow-up constitute an important part of the Compliance Review. The Annual Compliance Review is submitted to the Fisheries Commission for acceptance during the Annual Meeting. In the annual compliance review, compliance to NCEM is evaluated. Following is the composite list of apparent infringements ever detected since the Annual Compliance Review was conducted in 2004. Apparent Infringements (AIs) in bold are considered serious infringements according to Articles 37 and 50 of the NCEM:
- Greenland halibut measures (Article 7 – Greenland halibut in Subareas 2 and Divisions 3KLMNO 3KLMNO)
 - Mis-recording of catches – stowage (Article 24 – Recording of Catch and Stowage)
 - Product labelling – (Article 23 – Product Labelling Requirements)
 - Vessel requirements – capacity plans – (Article 21 – Vessel requirements)
 - **By-catch requirements (Article 12 – By-catch requirements)**
 - **Catch communication violations (Article 27 – Communication of Catches)**
 - **Fishing without authorization (Article 18 – Authorization to Fish)**
 - **Gear requirements – illegal attachments (Article 13 – Gear Requirements)**
 - **Gear requirements – mesh size (Article 13 – Gear Requirements)**
 - **Inspection protocol (Article 34 – Obligations of Vessel Masters during Inspection)**
 - **Mis-recording of catches – inaccurate recording (Article 24 – Recording of Catch and Stowage)**
 - **Observer requirements (Articles 28 – Observer Program)**
 - **Quota requirements (Article 3 – Quotas)**
 - **VMS requirements (Article 26 – Vessel Monitoring System)**
27. Since the release of the last Compliance Report, the number of cases in 2010 without follow-up information has now been reduced to zero.
28. In the Annual Compliance Review 2010 (Compliance Report for Calendar Year 2009, [FC Doc. 10/28](#) (NAFO, 2010q), and on the issue of following up with further investigations and legal prosecution to infringements, it has been stated that although the Secretariat receives information on the status of each case, there are cases that have not been resolved from 2006 since legal procedures can take longer than one year. Table 17 below presents the summary of status of the previous 4 years.



29. In general, it appears that most cases are resolved within a 2-year time period. However, the number of cases with no follow-up information has remained relatively stable since 2006 (around 5 annually) despite a decline in the total number of citations issued. Thus, the lack of follow-up on apparent infringements remains a concern. For example, the percentage of citations with no follow-up relative to total citations issued was 14 percent in 2006 and 23 percent in 2009. The Contracting Party may be following up on the apparent infringement, but may not have reported the status back to the NAFO Secretariat. Thus, as it may be seen, in the period 2006- 2009 there is a clear decline in the percentage of cases resolved as compared to the total number of citations issued same year: from 78 in 2007 to 23 in 2009. Furthermore, timeliness of information submission, although improved, seems to be still a concern (Table 17).

Table 17. Legal resolution of citations against vessels fishing in the NAFO Regulatory Area by year in which the citations were issued (as of March 2011.)

Year	Number of reports with citations issued	Resolved cases		Number of cases pending	Number of cases with no follow up information
		Number	% to reports with citations issued		
2006	28	21	75	3	4
2007	32	25	78	2	5
2008	8	5	63	3	0
2009	13	3	23	7	3
2010	7	3	43	4	0
Total	88	57	65	19	12

30. Regarding the Compliance Report as a “work in progress”, Contracting Parties have been tasked with finding ways to improve it. To this end, the latest suggestions have been to make the report more “operationally-based” and to include analyses of compliance with VME provisions and Port State Measures ([FC Doc.10/06](#) (NAFO, 2010f)).
31. At the 32nd NAFO Annual Meeting (September 2010) the Compliance Review Drafting Group (CRDG) suggested a new approach to conducting the compliance review. This is composed of two steps, the first being a more detailed discussion/ report internal to STACTIC and the second of an executive summary that would be submitted to Fisheries Commission in the form of an Annual Compliance Report ([FC Doc. 10/29](#) (NAFO, 2010d)). The proposal was adopted and CRDG was directed to continue further work closely with the Secretariat to develop the new format in preparation for the 2011 NAFO intercessional meeting.
32. The 2010 Fisheries Commission meeting proposed to amend Article 42 with the requirement that an annual Contracting Parties’ report would be required by 1 March each year on inspections and related follow-up actions taken in the previous year. This would be in the form of electronic notification by Contracting Parties to the Executive Secretary in complying with Article 42- “Report on Infringement” of the NCEM ([FC Doc.10/22](#) (NAFO 2010n)).

Performance Review Panel Assessment and Recommendations

- The main requirements for the follow-up of infringements contained in internationally agreed instruments are adequately incorporated into NAFO basic texts and practices. Significant progress has been achieved by the Organization on this issue, in particular through the NAFO Annual Compliance Review process. However, the quality and timeliness of the reporting by the Contracting Parties on**



the follow-up of infringements requires improvement in conformity with their duties and responsibilities as prescribed by the NAFO Convention and NCEM. According to the latest Compliance Review, no information on citation status has been provided by the relevant Contracting Parties on 12 of the 88 citations issued in the period 2006-2010. This represents an unsatisfactory situation which, in the view of the Panel, can be easily redressed.

5.5. Cooperative mechanisms to detect and deter non-compliance, including through Market related measures.

33. Vessel compliance has been addressed in the two previous items in respect to MCS and infringement follow-up. The question of compliance by NAFO Contracting Parties will now be addressed in conjunction with cooperative mechanisms in place to detect and deter non-compliance. As already indicated, NAFO has established the Standing Committee on International Control (STACTIC) to monitor compliance. STACTIC, assisted by the Secretariat, conducts an Annual Compliance Review, in accordance with Rule 5 of the Rules of Procedure for the Fisheries Commission. The compilation of the fishing and inspection reports (VMS position and hail reports, at-sea-inspection reports, apparent Infringement reports, observer reports, catch reports, etc.) is done by the Secretariat and submitted to STACTIC which prepares the *Compliance Review*. The compilation is examined by STACTIC during its Intersessional Meeting. The Annual Compliance Review report is forwarded to the Fisheries Commission during the Annual Meeting for endorsement and acceptance.
34. As emphasized [section 3.2.10, page 38], NAFO does not seem to have any provisions in place to deal with market related measures. However, there is a legal basis in the NAFO framework for establishing such measures in accordance with internationally agreed instruments and NAFO decisions. In line with such provisions, and in order to combat IUU fishing by vessels of NCPs, NAFO Contracting Parties have agreed to develop a comprehensive scheme to promote NCP compliance, taking into account the Contracting Party right under international law to introduce unilateral market-related rules under its own national law. Such rules, and legislation, include non-discriminatory trade measures consistent with GATT/WTO provisions. The general consideration is that all fish caught in contravention of NAFO regulations (quotas, fish size, mesh size, moratorium, etc.) should be denied landing. However, there are differing views as to whether a NAFO-wide scheme should also provide for the denial of port access. Discussion within NAFO has thus focused on the effectiveness of multilateral trade measures to target NCPs that repeatedly ignore diplomatic demarches regarding their fishing vessels' activities in the NAFO Regulatory Area. This includes the banning of imports of transhipped fish products unless such transhipments have been appropriately regulated. The role and expertise of the World Trade Organization (WTO) in addressing environmentally-related trade issue arising from fisheries compliance consideration has thus been recognized by NAFO. Consequently, the 1997 NAFO *Scheme to Promote Compliance by Non-Contracting Party Vessels with the Conservation and Enforcement Measures Established by NAFO* was adopted ([GC Doc. 97/6](#) (NAFO, 1997e)).
35. The incorporation of trade measure into the above Scheme was considered by NAFO to be contrary to WTO rules and was therefore not included in the Scheme. However, market-related provisions were included in the Scheme as follows:
 - if a sighted NCP vessel enters a Contracting Party port, the vessel must be inspected and is not permitted to land or tranship any fish until it has been inspected;
 - NAFO Contracting Parties shall prohibit landings or transhipments of any fish, if the inspection shows that the vessel has species regulated by NAFO through moratoria, TACs or effort limitation, unless the vessel establishes that such fish were caught outside the NRA.
 - NAFO Contracting Parties shall prohibit landings or transhipment of any fish, if the inspection shows that the vessel has certain other species, unless the vessel establishes that it has applied the NAFO Conservation and Enforcement Measures.



36. At present this scheme is incorporated into NAFO Conservation and Enforcement Measures (NCEM) as a separate Chapter VI: Scheme to Promote Compliance by Non-Contracting Party Vessels with Recommendations Established by NAFO ([FC Doc.11/1](#) (NAFO, 2011a)). The main elements of NAFO Scheme to Promote Compliance by Non-Contracting Party Vessels with Recommendations Established by NAFO (hereinafter - NCP Scheme) are outlined in Articles 51- 59 of the NCEM. As it can be seen from the current NCP Scheme, NAFO has adopted a number of measures which can be considered as market-related. It should be noted that adoption of such non-discriminative measures took place in NAFO only after other actions to curb IUU fishing by NCP vessels have proved to be unsuccessful or ineffective and after serious considerations in this regard. The issue of non-compliance was under constant consideration in the Organization for many years due to high level of IUU fishing in the NAFO Regulatory Area.
37. It took NAFO serious efforts to find appropriate ways and means, including economical, to discourage NCPs activities in NAFO Regulatory Area. In 1990s in line with provisions of Article XIX of the Convention constant efforts had been taken to draw attention of States - not Parties to NAFO to IUU fishing activities in the NAFO Regulatory Area of the nationals or vessels of that States (on groundfish, mainly redfish). Diplomatic contacts, demarches and other type of relevant communications had been extensively used. The measures were highly successful, resulting in sharp reduction in the number of vessels of NCP in the NAFO Regulatory Area, during the 1990s, with no vessel having been sighted operating in the area since 2007 (Figure 50).

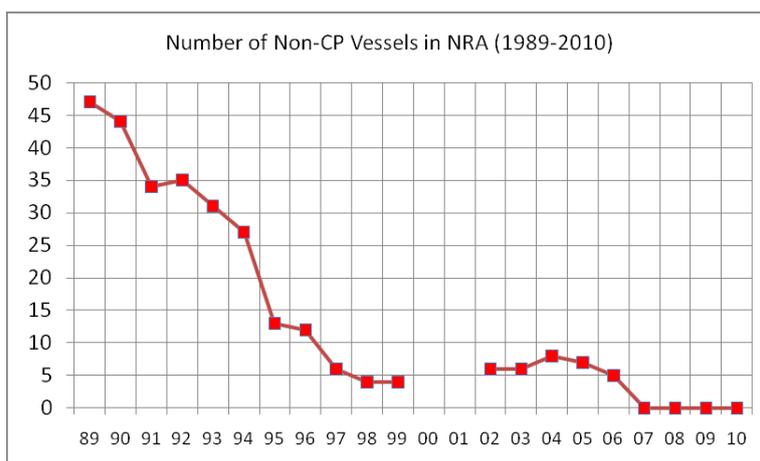


Figure 50. Number of NCP vessels in NRA in 1989- 2006 according to STACFAC documents, Meeting Proceedings of the General Council (2000- 2002 data is not available).

38. Besides, most of NAFO Contracting Parties in port States capacity adopted unilaterally norms of national legislation dealing with access of foreign vessels to their ports. According to these rules port access, except for cases of force majeure, is denied or restrictions on landing, transshipment and selling of catch are provisioned to foreign vessels of States- non parties to agreements (or RFMOs) to which NAFO Contracting Parties are members, if these vessels have not observed conservation and management measures adopted under these agreements (or RFMOs).
39. At the meetings of STACFAC, information *inter alia* on landings and transshipments of fish caught by NCP vessels as well as on imports of species regulated by NAFO from NCP vessels were considered
40. Trade information obtained through national statistics on species regulated by NAFO as well as information on imports from NCP vessels to ports of particular Contracting Parties was examined. Port closures, restriction of landings, other deterrent measures, including draft resolution on possible arrangements for boarding, inspection and arrest of NCPs' vessels were discussed ([Meet. Proc. 1995](#), Section IV (NAFO, 1996c)).



Performance Review Panel Assessment and Recommendations

- 1. The Panel concludes that relevant provisions of the global instruments on trade- and market-related measures have been adequately implemented in some of NAFO basic texts.**
- 2. The timely development and adoption, as well as effective realization of port control and trade-related measures, which prevents port access or landing of fish products by non-compliant vessels, can be considered as having contributed to the situation that since 2006 there has been no IUU activity in the NAFO Regulatory Area. Most of NAFO Contracting Parties port States have implemented trade-related provisions in their national legislation.**
- 3. The PRP welcomes the establishment and dissemination of NAFO IUU fishing vessel lists and encourages it to continue to cooperate with other RFMOs in this regard.**
- 4. Contracting Parties may consider further potential improvements of NAFO trade or market related provisions in accordance with requirements of international law to prevent, deter and eliminate IUU fishing in the NAFO Regulatory Area.**
- 5. To the extent possible, NAFO mechanisms related to the use of trade related measures should take into consideration similar measures being implemented elsewhere.**



6. International Cooperation

6.1. Transparency

1. One of the most important tools to enhance NAFO transparency is its website. This not only gives access to NAFO publications and databases, but also provides comprehensive overviews of the Organization's activities. The NAFO public website was developed, and is supported by, the Secretariat to provide researchers, journalists and other interested public/ individuals with a comprehensive overview of the Organization's activities. The success of these efforts is reflected in the high number of visits ('hits') to the website. Among the top ranking pages are the IUU-List, the NAFO Symposium, the Conservation and Enforcement Measures, the Media Kit and the Convention Area Map. All NAFO meeting reports and scientific publications are made publicly available on the website shortly after adoption and approval by the respective Committees (generally up to thirty days after a meeting ends).
2. To enhance NAFO transparency to the general public, the Secretariat has been engaged in recent years in publishing fisheries related information and scientific material. NAFO now regularly publishes several reports and scientific periodicals, such as the *Annual Report*, *Meeting Proceedings*, *Scientific Council Reports*, *Journal of Northwest Atlantic Fishery Science* and the *NAFO Scientific Council Studies*.
3. Large amounts of archived material and fisheries-related (science and fisheries activity⁸⁷) information has been held in non-digitized, paper format by the Secretariat. On recommendation from the Scientific Council, the Secretariat has begun to digitize such material, starting with the 2005 observer reports ([SC Rep., 2005](#), p. 210 (NAFO, 2006b)), and extending to several kinds of fishery-related information held by the Secretariat. In 2011 the digitization of the document series will be complete and it is planned to complete scanning of meeting reports back to 1979. All *Journal of Northwest Atlantic Fishery Science* (JNAFS) articles and *Scientific Council Studies* papers have now been scanned and work continues on completing the metadata tags required for search functions.
4. NAFO established a comprehensive media policy in 2004. Immediately following the Annual Meeting a Press Release (prepared by the Executive Secretary, in conjunction with the Chairs of the Constituent Bodies), outlines the major decisions agreed at the meeting. At the discretion of the President and Executive Secretary, a Press Conference may also be held immediately following the close of the meeting. The media may attend public sessions of the General Council, Scientific Council and Fisheries Commission, as well as other sessions so designated. The Executive Secretary remains accessible to journalists for interviews and provision of background materials.
5. NAFO has a comprehensive set of rules for the participation of observers in its meetings, and so NAFO Non-Contracting Parties, Intergovernmental Organizations and Non-Governmental Organizations may apply to participate at NAFO meetings. NAFO is also a partner with FIRMS, ASFA, CWP and RSN. Over the Past several years, posters, brochures and booklets have been used to disseminate basic information on the Organization to the media and public alike.
6. The Secretariat continues to improve its public relations by increasing its involvement with the media and other institutions. The goal is to create a transparent and cooperative image of the Organization. Among main such public relations activities are:
 - The post- annual meeting press release. This has been made more attractive and has been given a professional look. It is circulated to a wide media contact list;
 - Media inquiries are followed-up throughout the year in a timely and efficient manner

⁸⁷ Including fishery survey results and statistics.



- The Executive Secretary remains accessible to journalists for interviews and provision of background materials;
- The News Web-pages contain information pertaining to NAFO and the Northwest Atlantic from various world-wide news sources. These are continually updated and uploaded onto the Website.
- Student interns are welcome at the Secretariat, where they are provided an opportunity to participate in various aspects of NAFO work;
- Cooperation is promoted with local organizations interested in NAFO's work;
- Press media kits are provided and circulated as required;
- A NAFO brochure has been produced for public use. The NAFO Poster has also been revised and updated;
- In 2007, the Secretariat broadened its contacts with international journalists by purchasing an extensive contact list from Cision, by joining the 'Media Link' contact database and by subscribing to the web-based FIS Newsletter (part of the web-based "Fish Information and Services" information company);
- The Executive Secretary has enhanced NAFO's visibility by delivering lectures at local events (conferences, university programs etc.), and
- The Secretariat has provided training opportunities to improve public relations-related skills and knowledge for staff involved in drafting information materials for the public.

Performance Review Panel Assessment and Recommendations:

1. **The PRP considers NAFO's publicity and information-dissemination efforts to be of a high standard. The Secretariat's role in these efforts is commended.**
2. **Recent, and notable efforts, by the Secretariat to enhance the Organization's international cooperation and transparency are also commended.**
3. **The Scientific Council, however, should give careful consideration to improving its explanation of both the scientific processes it follows and the results/advice it provides. The resultant information should be intelligible to other scientists outside NAFO. This would not only promote the Council's work, but would also facilitate broadened scientific debate and understanding of how the Council goes about its work.**

6.2. Relationship to Non-Contracting Parties cooperating with NAFO

7. Article XVI of the NAFO Amended Convention is specifically devoted to co-operation with non-Contracting Parties. The *Commission* is required to request the full cooperation of Non-Contracting Parties with the Organization, either by them becoming a Contracting Party or by agreeing to apply NAFO conservation and management measures. It also request Contracting Parties to, *inter alia*, exchange information and to take measures to deter the undermining of conservation and management measures adopted by the Commission by the fishing activities of vessels entitled to fly the flag of any Non-Contracting Party. NAFO Contracting Parties alone, or through the Commission, are to seek cooperation with any non-Contracting Party that has been identified as importing, exporting or re-exporting fishery products derived from fishing activities in the Convention Area.
8. Given the high level of non-compliance by Non-Contracting Parties with NAFO conservation and regulatory measures in the late-1990s, the NAFO "Scheme to Promote Compliance by Non-Contracting Party Vessels with the Conservation and Enforcement Measures Established by NAFO was adopted" (NCP Scheme) (See Section 5.6, above). The purpose of this Scheme is to promote compliance by NCP vessels in line with recommendations established by NAFO to prevent, deter and eliminate fishing activities by NCP vessels that undermine the effectiveness of the Conservation and



- Enforcement Measures established by the Organization (Article 51). It is particularly noteworthy that nothing in the Scheme affects the sovereign rights of Contracting Parties to impose additional measures aimed at promoting compliance by NCP vessels in accordance with international law. The presumption of NCP vessels undermining NAFO Conservation and Enforcement Measures (Article 52.1) is an important provision of the Scheme.
9. The NCEM dedicates a whole chapter (Chapter VI) to the Scheme and this includes the *notification of presumed IUU Activities and the Establishment of an IUU vessel list*. Vessels listed in the NEAFC IUU List are also incorporated in the NAFO IUU List.
 10. In respect to NEAFC, it should be noted that Article 52.2 of the Convention, recognizes - (a) the adjacent boundary of the NAFO Regulatory Area with the NEAFC Area, (b) the existence of stocks that straddle the boundary between these Areas and, (c) the global nature of IUU vessel activities. Therefore, a Non-Contracting Party vessel that has been placed on the NEAFC IUU list is presumed to be engaging in fishing activities in the NRA and thereby undermining the effectiveness of NAFO Conservation and Enforcement Measures.
 11. The main provisions of the NAFO NCP Scheme identify particular obligations, terms and rights attached to the duties of NAFO Contracting Party port States. These are the:
 - Right to allow a NCP vessel to entry into its ports for the purpose of conducting an investigation or taking appropriate enforcement action against the vessel;
 - Interpretation of the Scheme in a manner consistent with international law, including the rights of port access in case of force majeure or distress in accordance with the United Nations Law of the Sea, and the principles, rights and obligations in WTO, agreements, and its implementation in a fair and transparent manner;
 - Right to require port-entry authorization;
 - Right to inspect a NCP vessel in a port of any Contracting Party;
 - Transmittal of results of all NCP vessel inspections, conducted in the ports of Contracting Parties, and any subsequent action, to the secured part of the NAFO Website, the flag State, relevant RFMOs and other Contracting Parties;
 - Prohibition of landings and transshipments of all fish from a NCP vessel in all Contracting Party ports, unless the vessel establishes that the fish subject to the NAFO convention were caught outside the NAFO Regulatory Area or that it has applied all relevant Conservation and Enforcement Measures, and
 - Obligation of NAFO Contracting Parties to prohibit vessels on the IUU list in their ports from: (a) being supplied with provisions, fuel or other services; (b) being granted entry into such ports, except in the case of *force majeure*; (c) crew exchanges, except for *force majeure*, and the landing of fish from such vessels.
 12. As already noted in Section 5.2.6, between 1991 and 2006 several diplomatic demarches were delivered by NAFO to flag States whose vessels were sighted in the NAFO Regulatory Area (e.g. Cayman Islands, Malta, Panama, Belize, Sierra Leona, etc.). Since 2007, there have been no sightings of Non-CP vessels engaged in fishing activities in the Area. Since there have been no records of new IUU vessels in the Northwest Atlantic since 2006, there is no Provisional NAFO IUU List at present. Similarly, no non-compliance by NAFO Contracting Parties with the Scheme has been recently recorded.

Performance Review Panel Assessment and Recommendations

1. **Recognizing that at present there is no Non-Contracting Party operating in NAFO Regulatory Area, either cooperating or not, the PRP commends NAFO for its past action as this appears to have resulted in the disappearance of IUU fishing activities in the Area.**



6.3. Cooperation with other RFMOs

13. Article XVII of NAFO Amended Convention specifically addresses co-operation with other international organizations. It directs NAFO to develop cooperative working relationships with the FAO and other specialized agency of the United Nations, with intergovernmental organizations that can contribute to NAFO's work and ⁸⁸ and with other relevant RFMO/As, taking note of their conservation and management measures.
14. To this aim, NAFO has developed several cooperative activities with the UN (e.g. providing relevant NAFO information, participating in meetings, such as the Rounds of Informal Consultations of States Parties to the United Nations Fish Stocks Agreement, the UNFSA Resumed Review Conference, Meetings of the UN Open-ended Informal Consultative Process on Oceans and Law of the Sea, etc), with FAO (participating in meetings, such as COFI, technical consultation to develop Deep Sea Guidelines, International Guidelines on Bycatch Management and Reduction of Discards; as a partner/participant in ASFA, FIRMS, CWP, RSN, etc), with NEAFC (including joint management of a shared stock), ICES, PICES, SEAFO, NAMMCO, NPAFC, etc. Several NGOs also participate regularly in NAFO Meetings, including the Ecology Action Centre (EAC), the International Coalition of Fisheries Association (ICFA), the World Wildlife Fund (WWF), etc.
15. In 2003, a Memorandum of Understanding (MoU) was signed between NAFO and ICES to address cooperation on matters of common interest in marine research in the North Atlantic Ocean and in adjacent seas as well as on related aspects. Also, cooperation with ICES is exercised through joint working groups such as those on Northern Shrimp assessment (NIPAG), on Harp and Hooded seals (WGHP) and WG on Deep Water Ecology (WGDEC).
16. NAFO also works with NEAFC on managing the transboundary Pelagic Redfish stock in Subarea 2 and Div.1F + 3K.
17. NAFO has co-sponsored, or acted as organizers of a number of joint scientific symposia. Most recently such symposia have been held in conjunction with ICES and PICES on reproductive and recruitment processes (*Reproductive and Recruitment Processes of Exploited Marine Fish Stocks, 2007*), with ICES and NAMMCO on marine mammals (*The Role of Marine Mammals in the Ecosystem in the 21st Century, 2008*), as well as on the rebuilding of depleted fish stocks (*Rebuilding Depleted Fish Stocks- Biology, Ecology, Social Science and Management, 2009*).

Performance Review Panel Assessment and Recommendations

- 1. NAFO is encouraged to continue developing cooperative relationships with other RFMO/As and International Organizations, as appropriate, to achieve its objectives and facilitate its work.**

6.4. Special requirements of developing States

18. As noted in Section 3, neither the 1978 NAFO Convention nor the Amended NAFO Convention includes any provisions to address the special requirements, or needs, of developing States. Such needs and requirements are foreseen in various international instruments, particular including Part VII of the UNFSA. On the other hand, there is no developing coastal State in NAFO Convention Area and no developing State has applied to become a NAFO Contracting Party. Presently, Cuba is the only NAFO Contracting Party which may be considered a developing State, but it is not a coastal State within the NAFO Convention Area. Furthermore, there have been no conflicting interests between coastal developing States and distant water fishing countries in the North-West Atlantic with respect

⁸⁸ Including those having competence for ensuring the long-term conservation and sustainable use of living resources and their ecosystems.



to the exploitation of straddling and highly migratory fish stocks on the high seas. These can be considered one of the reasons why the NAFO Basic Texts do not differentiate between the needs of developing and developed States with regards to the Organization. Although, a reference in the Basic Texts does align them with “relevant principles of international law” (preamble to the Convention) which would imply that the needs of developing States would need to be addressed as they became relevant.

19. In terms of NAFO cooperation with Non Contracting Parties, including developing States, Rule 2 of the Rules of Procedure for the General Council, Fisheries Commission and Scientific Council indicates that observers, experts and advisers may address plenary or subsidiary body meetings, but are not entitled to vote (i.e. are excluded from decision-making).

Performance Review Panel Assessment and Recommendations

- 1. With regard to the special requirements of developing States, the main PRP comments have been provided in Section 3.2.14. The PRP notes that no specific program has been developed by NAFO to directly address the special requirements of developing States, However, some NAFO initiatives, such as the Professional Development Internship (PDI) Program, may provide assistance in this regard. This Program not only provides NAFO staff with international training but also facilitates cooperation and exchange with other fisheries organizations, and educational activities (e.g. students internship in the Secretariat, including from Philippines, Ghana; International Ocean Institute and Marine Affairs program at Dalhousie University, Halifax (for developing countries) etc.).**



7. Financial and administrative issues

7.1. Availability of resources

1. The financial affairs of NAFO are governed by the Convention, Rules of Procedure (for the General Council, for the Scientific Council and for the Fisheries Commission) and Financial Regulations. These have been adopted, and can be amended if required, under the Convention. In accordance with Article XV.1 of the Convention, the Secretariat is required to provide various services to the Organization in exercising its duties and functions. Under Article XV.2, the Executive Secretary is established as the Secretariat's Chief Administrative Officer. The main principles of the Organization's financial policy are outlined in Article XVI of the Convention and in the 2009 [NAFO Financial Regulations](#) (NAFO, 2009a).
2. Proper books of account are established under *Financial Regulations* Rules 4 and 5 for the Organization's receipts and expenditure. In establishing and implementing detailed financial procedures, the Executive Secretary is duty bound to ensure proper financial administration and the exercise of economy (*Financial Regulations* Rule 5.1). The Executive Secretary also provides a *Financial Statement Projection* to the annual NAFO meeting for the current fiscal year. The financial year of the Organization is the period 1 January to 31 December (*Financial Regulations*, Rule 1).
3. The Executive Secretary prepares and submits a budget estimate to the Annual Meeting. This estimate covers the General Council, the Fisheries Commission, the Scientific Council, and the Secretariat. It sets out projected income and expenditure for the following financial year (*Financial Regulations* Rule 2). The estimate also covers Secretariat Staff needs necessary to undertake the various support functions and services required by the Organization. The Executive Secretary provides a *Financial Statement Projection* to the annual NAFO meeting for the current fiscal year.
4. The *Standing Committee on Finance and Administration* (STAFCAD) examines the budget estimate during the General Council's annual meeting. STAFCAD then reports to the General Council which adopts the budget, after any necessary adjustments or revisions have been made (*Financial Regulations* Rule 2.4). STAFCAD advises the General Council on matters relating to the Secretariat, the budget and financial affairs of the Organization and on other matters of an administrative and financial nature.
5. Appropriations adopted by the General Council in the budget constitute an authorization to the Executive Secretary to incur obligations and make payments for the purposes, and up to the amounts, endorsed by the Council.
6. The Executive Secretary has the authority to transfer appropriations between budget items adopted by the General Council, provided that the items do not vary by more than 10% of the originally adopted amounts (*Financial Regulations* Rule 3.1). Any appropriations not disbursed are returned to the accumulated surplus account at the end of the fiscal period⁸⁹. They are then used to reduce the following year's Contracting Party contributions.
7. The *Annual Financial Statements* are prepared no later than 30 days after the end of the financial year and are submitted to the Auditors (*Financial Regulations* Rule 5.3) appointed by the General Council (Article XVI.10 of the Convention). The issues related to the principles and procedures of conduct of the external audit are regulated by Rule 7 of *Financial Regulations*. This establishes, amongst other things, that the Auditors serve for a maximum period of three years. The Auditors submit their report to the General Council, no later than 90 days after having received the year's financial statements from the Executive Secretary (*Financial Regulations* Rule 7.8).

⁸⁹ The NAFO financial year is the period from 1 January to 31 December (*Financial Regulations* Rule 1).



8. Taking into account the audit procedures, the NAFO Contracting Parties are normally informed by the Secretariat of their annual contributions during the first week of March. To allow for timely issuance of the annual billing contributions to the Contracting Parties the Auditors are requested by the Secretariat to complete their work in February of the appropriate year.
9. As per the Convention and Rule 4.8 of the Financial Regulations, annual contributions are due and payable by the Contracting Parties in full, and in Canadian dollars, within 30 days of receipt of the information from the Executive Secretary, or unless otherwise authorized by the General Council. Any unpaid contribution balance is considered to be in arrears.
10. Under Rule 4 of the *Financial Regulations*, and within the books of account of the Organization, an accumulated surplus account is established. With the consent of the General Council, money from the accumulated surplus account may be used temporarily to finance appropriations, pending receipt of annual contributions by Contracting Parties, and in the case of unforeseen and extraordinary expenses.
11. Currently the majority of annual contributions payments are received within 60 days after billing by the Secretariat. However, this has been not always the case. In September 2005 (at the 27th Annual Meeting) it was noted that the NAFO Secretariat would face cash flow difficulties in 2006 due to outstanding contributions being owed by some Contracting Parties. These arrears in Contracting Party contributions stood at CA\$ 150,000.00. The arrears in contribution payments had increased about threefold compared with the previous average levels. In fact, the 2006 outstanding payments by a few Contracting Parties would reach an unprecedented level of about 20% of the annual budget, even though the total budget for that year was not scheduled to grow above the 2005 level. Together, the situation meant that concerns were raised that the Secretariat might not be able to meet its financial obligations in early 2006 without having to borrow funds.
12. Between 2005 and 2009, NAFO continued to experience shortfalls in contributions. In particular, the 2006 budget contribution shortfall was significant to the extent that some programs and activities could not be carried out (e.g. the hiring of staff was deferred for a year, travel to non NAFO meetings was cancelled or reduced, meeting support was reduced and equipment and supplies purchases was either cancelled or delayed until the following year) (Figure 51 and Figure 52).). This was noted in the 2006 Administrative Report and Financial Statements ([Meet. Proc. 1996](#), Section II (NAFO, 1997b)) (Table 18).



Table 18. Contracting Parties fulfillment of their financial obligations to NAFO (amounts as stated in relevant GC docs).

Year	Adopted NAFO budget		Contributions Due from Contracting Parties at Year End (31 December)		
	amount, CAD	increase to previous year, %	amount, CAD	% to budget	Contracting Parties
1995	964,000	-	78,933		Bulgaria, Romania, Cuba, Lithuania, USA
1996	996,000	3.3	53,382	5.4	Bulgaria, Romania, Cuba, France (SPM)
1997	1,006,500	1.1	59,315	5.9	Bulgaria, Romania, Cuba, Lithuania
1998	1,077,000	7	62,980	5.8	Bulgaria, Romania, Cuba, USA
1999	1,092,000	1.4	54,127	5.0	Bulgaria, Romania, Cuba, Ukraine
2000	1,157,000	5.6	69,763	6.0	Bulgaria, Romania, Cuba, Russia
2001	1,389,000	20.1	60,979	4.4	Bulgaria, Romania, Cuba, Lithuania
2002	1,369,000	-1.4	63,892	4.7	Cuba, Romania, Ukraine
2003	1,385,400	1.2	132,820	9.6	Bulgaria, Cuba, USA
2004	1,500,000	8.3	160,594	10.7	Bulgaria, Cuba, Russian Federation, USA
2005	1,524,000	1.6	291,496	19.1	Bulgaria, Cuba, Republic of Korea, Ukraine, USA
2006	1,519,000	-0.3	448,582	29.5	Bulgaria, Cuba, Republic of Korea, Ukraine, USA
2007	1,459,000	-3.9	339,536	23.3	Cuba, France (SPM), Republic of Korea, Ukraine, USA
2008	1,529,000	4.8	231,756	15.2	Cuba, France (SPM), Ukraine, USA
2009	1,618,000	5.8	66,928	4.1	Cuba
2010	1,782,000	10.1	0	0.0	

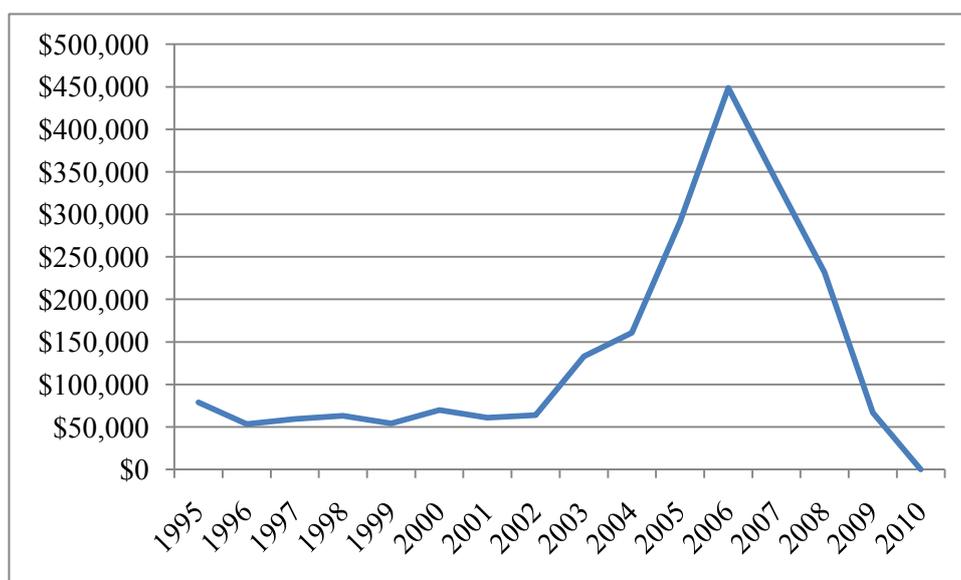


Figure 51. Contributions due from Contracting Parties at Financial Year End, since 1995.



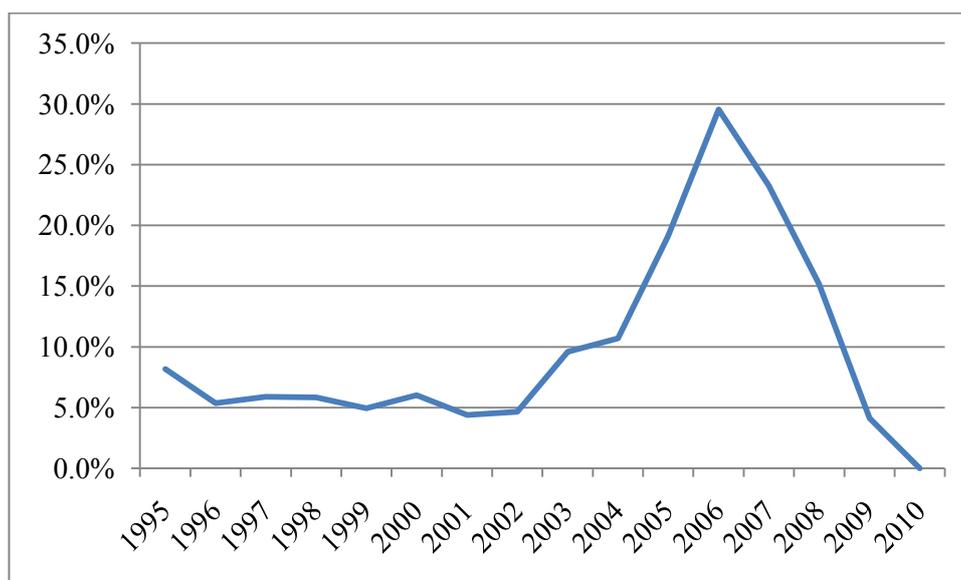


Figure 52. Percentage of Contributions due from Contracting Parties at Financial Year End compared to the approved budget, since 1995.

13. In response to the significant levels of outstanding contributions between 2007 and 2009, it was decided to set the accumulated surplus account at its maximum level (as stated in *Financial Regulation* Rule 4) of 20% of the annual budget for the current financial year.
14. In 2009, STACFAD noted that the NAFO cash flow situation had returned to normal and that the Organization was no longer considered to be in an emergency funding situation. At the 2009 annual meeting it was decided that an alternative to setting up a separate contingency fund, while still achieving the same results, would be to simply amend the current *Financial Regulations*, Rules 4.4 and 4.5 regarding the accumulated surplus account of as follows:
 - 4.4 The Chair of the General Council in consultation with the Chair of STACFAD and the members of the General Council may authorize expenditures from the accumulated surplus account for unforeseen and extraordinary expenses to the good conduct of the business of the Organization.
 - 4.5 The Standing Committee on Finance and Administration and the General Council shall review the amount available in the accumulated surplus account during each annual meeting. Insofar as possible, the General Council shall anticipate unforeseen expenditures during the succeeding three years and shall attempt to maintain the accumulated surplus account at a level sufficient to finance operations during the first three months of the year plus an amount up to a maximum of 10% of the annual budget for the current financial year for use in an emergency in accordance with Rule 4.4.
15. The major purpose of the *Accumulated Surplus Account* is to provide NAFO (particularly the Secretariat) with sufficient funds to execute its functions during the early part (January to March) of the financial year. For example, in 2010 a total of \$285,000 was allocated to the *Account*. This was divided into allocations of \$200,000 support operations in the first three months of 2011 and \$85,000 to be used for contingencies. These allocated *Accumulated Surplus Account* amounts took into account an improved situation in respect to the timely provision of Contracting Part contributions.
16. Taking the improved situation with Contracting Parties payments at the 2010 Annual meeting, it was agreed that the amount maintained in the accumulated surplus account would be set at \$285,000.00, of which \$200,000.00 would be sufficient to finance operations of the Organization in the first three months of 2011, and \$ 85,000.00 would be available for use in emergency situations. It should be noted that the basis for calculating the contributions due from each Contracting Party will change under the provisions of the Amended Convention because of:



- Adoption of new paragraph 2 d), Article IX of the Amended Convention stating that the annual contribution of any Contracting Party which has a population of less than 300,000 inhabitants shall be limited to a maximum of 12% of the total budget. When this contribution is so limited, the remaining part of the budget shall be divided among the other Contracting Parties in accordance with subparagraphs (a), (b) and (c);
 - Revision of species list to be used for the purposes of establishing of contributions.
17. Since 2000, average annual increases of the Canadian Consumer Price Index (CPI) have ranged from 0.3% to 2.8%. The percentage annual increase of the NAFO budget during the same period ranged from -3.9% to 20.1% (Figure 53).

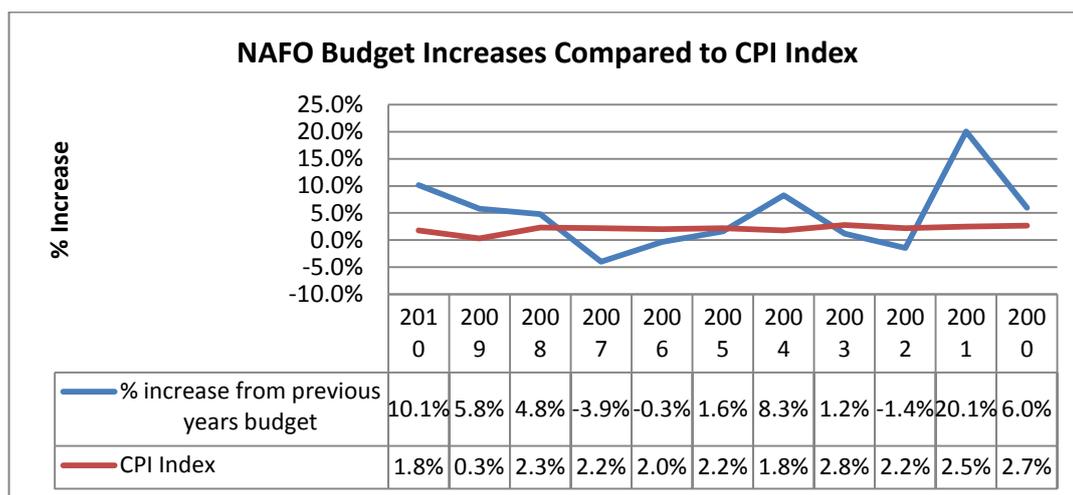


Figure 53. The trend in annual percentage NAFO budget increase since 2000 compared to the Canadian CPI.

18. The relatively small size of the NAFO budget (<CDN \$2 million) means that new projects/activities impact heavily on the any percentage increase in the annual budget from one year to next. For example, notable activities since 2000 and their attached costs⁹⁰ include:
- 2001* – Installation Vessel Monitoring System (VMS) at Secretariat (\$200,000 plus annual maintenance and programming charges);
 - 2002 – Recruitment and relocation of new Executive Secretary (\$73,000);
 - 2004# – Salary increases/retroactive salary payments for Secretariat clerical staff (\$27,700 over three years);
 - 2005*# – Reclassification of several staff members, including Executive Secretary (\$30,000);
 - 2006*# – Retirement of several staff members, commencement of human resources restructuring from 12 staff members to 10 (-\$99,000);
 - 2006 – Scientific Council Coordinator recruitment costs (\$28,000);
 - 2006* – Introduction of Annual Meeting reception payment by Secretariat (\$20,000/yr);
 - 2007 – Increase of budget (from \$15,000 to \$30,000) for additional assistance to digitize fisheries reports⁹¹;
 - 2007*# – VMS provider changeover (\$280,000 setup, license and maintenance fees paid over 6 years - \$70,000 paid in 2007);
 - 2008*# – Termination benefits for prior service obligations spread over four years (Total cost of \$140,000 and on-going costs of approx \$35,000/yr);

⁹⁰ The PRP noted that payments for such activities could be in the form of ‘one-off’ payments and/or ongoing payments. The impacts related to the items listed are indicated in terms of *‘On Going’ or #‘One-Off’ payments.

⁹¹ Additional help budget to digitize fisheries reports of \$15,000 per year was established in 2006. The 2006 budget was not expended due to cash flow concerns and the budget amount in 2007 was doubled to catch up for lost time.



- 2009* – Incurrence of Pension Plan liability (\$100,800/yr for required for 15 years plus normal contributions [of \$78,200/yr] to fund Plan⁹²);
 - 2010 – Executive Secretary recruitment and relocation costs (\$51,000);
 - 2011 – Scientific Council Coordinator recruitment and relocation expenses (\$52,000);
 - 2011 – Performance Review costs (\$75,000).
19. It is noted that if the annual budget changes relative to CPI associated with financing these activities are removed, the relative impost on the budget ranged from -2.2 to 7.6% (Figure 54).

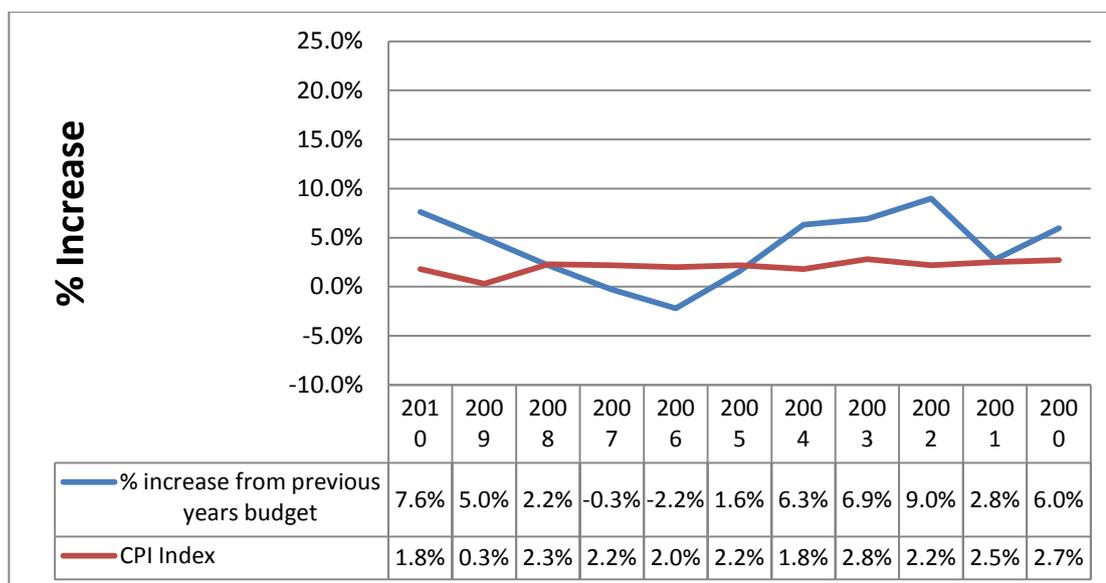


Figure 54. NAFO Budget Increases (irregular items removed) Compared to Consumer Prices Index.

Performance Review Panel Assessment and Recommendations:

1. **Financial arrangements in the Organization appear to be adequate and in keeping with best practice.**
2. **At present, Contracting Parties are providing the financial resources needed to achieve the aims of NAFO and to implement NAFO decisions. However, budgetary instability arising from late contributions or failure to contribute may compromise this situation.**
3. **Taking into account that not long ago the Organization was considered to be in an emergency funding situation, the Contracting Parties are urged to continue their efforts in exploring possibilities of securing NAFO financial stability in future, noting existing best practices in this regard.**
4. **The PRP notes that the timely payment by Contracting Parties of their budget contributions is crucial to ensuring that NAFO's budget remains cash-stable and that the financial responsibilities for its functions are equitable. Therefore, the timely payment of annual contributions remains a high priority for the Organization.**
5. **The PRP also noted that, according to Article XVI of the 1978 Convention, a Contracting Party which has not paid its contributions for two consecutive years shall not enjoy any right of casting votes and presenting objections until it has**

⁹² The normal employer contributions of \$78,200 per year were not an increase to the budget for 2009.



fulfilled its obligations, unless the General Council decides otherwise. The PRP urges NAFO to apply this provision.

6. The PFP noted that NAFO has provided for an additional allocation of funds in its budget to ensure that specific activities are adequately financed. This has allowed for flexibility to address budgetary needs on a needs basis, while it also serves to constrain budgetary growth within reasonable limits commensurate with NAFO's needs.
7. The PRP suggested that the extent to which international accounting standards are applied by the Organization be made expressly clear in future audits.
8. In this regard, and in order to provide a more accurate and contemporary picture of the Organization's financial standing, the PRP suggests that consideration could be given to the application of accrual accounting principles to manage the budget. It noted that accrual-based accounting is largely the international norm.
9. Reimbursement of the budget surplus in one year to the following year's contributions is in keeping with many other international organizations. However, the PRP advises that consideration should be given to withholding any reimbursement of budget surplus amounts to Contracting Parties in arrears (see below) of their full contributions.
10. The PRP suggests that application of cost-recovery measures could be considered as a way of alleviating potential financial stress on NAFO Contracting Parties.

7.2. Efficiency and cost-effectiveness: extent to which NAFO is efficiently and effectively managing its human and financial resources, including those of the Secretariat

20. According to Article II of Convention the Secretariat is one of the 4 Constituent Bodies of the Organization (Section 2.4; Appendix V).

Human Resources

21. The *NAFO Staff Rules* (NAFO, 2010a) detail the management and administration of the Secretariat's human resources. Originally adopted in 1991, the *Rules* were revised by the General Council at its 1998, 2005, 2006, 2007, 2008, 2009 and 2010⁹³ meetings. A number of the *Staff Rules* were modernized and new rules were adopted to take better account of the fact that NAFO is an international organization and to improve the Secretariat's efficiency.
22. The last amendment of the Organization's *Staff Rules* was made at the 2010 Annual Meeting. Rule 5.3 was adopted allowing for a Secretariat Coordinator, or the Senior Finance and Staff Administrator, to be appointed as Deputy Executive Secretary for the term of one or two years. The Deputy Executive Secretary assumes administrative responsibilities to assist the Executive Secretary and can represent the Executive Secretary on official occasions.
23. The *Staff Rules* outline Secretariat Staff service conditions, employment principles, duties, rights and responsibilities (*Staff Rules* Section 2). All Secretariat Staff are international civil servants (*Rule 2.1*) and enjoy the privileges and immunities to which they are entitled under the *Northwest Atlantic Fisheries Organization Privileges and Immunities Order* (Order-in-Council P.C. 1980-132, 11 January 1980).

⁹³ The 2010 amendment of *Staff Rule 5.3* allows the Senior Staff Administrator to be appointed as Deputy Executive Secretary to support the latter in his/her administrative duties. The Deputy Executive Secretary may also formally represent the Executive Secretary.



24. Secretariat Staff salaries, allowances and employment conditions largely reflect those pertaining to similar levels of employment in the public sector of the host country, Canada (*Staff Rule 5.1*). Consequently, most of the NAFO *Staff Rules* are closely aligned with Canadian Federal Government provisions. However, a number of *Rules* reflect the Organization's international character and are based on similar considerations to those found in the UN system, and/or other international organizations [*e.g. Staff Rules 3.3 (Recruitment), 8.6.(e) (Installation Allowance), 8.7 (Home Leave) and 9.6.(d) (Repatriation Grant)*]. As per Rule 3.3 staff members of the Secretariat are recruited as:
- Coordinators - positions of managerial or scientific nature, filled by appropriately qualified professionals recruited internationally among citizens of Contracting Parties and
 - General services - positions of general administrative and technical nature, filled by personnel recruited locally or otherwise nationally from the host country.
25. Unlike many other similar organizations, the NAFO *Staff Rules* (Annex 1) formally provide for a Staff Association and the election of a Staff Representative. The Staff Representative is elected as a spokesperson by the Staff Association with the obligation to ensure that staff interests are adequately presented in relevant decision-making processes. This dispensation allows for Staff to be adequately represented in such processes where relevant, and provides a forum for Staff to discuss personnel matters and employment conditions.
26. Annex 2 of the *Staff Rules* mandate the setting up of a NAFO *Staff Committee* and its associated purpose/functions. Representation on the *Committee* is nominated by NAFO Staff and approved by the General Council. The Committee advises on, and mediates, potential conflicts when Secretariat issues cannot be resolved internally or when resolution is essential (*i.e.* for a perceived unjust dismissal).
27. The previous long-established human resources structure of the NAFO Secretariat of 12 employees had been in place since at least 1979. In 2003, and in anticipation of a number of expected early retirements, as well as to meet the new requirements of the Organization,⁹⁴ the Secretariat proposed a new human resources strategy, based on transparency, a teamwork approach and enhanced cross-function, staff participation.
28. In 2004, the staff implemented a functionally-defined 'team' approach to ensure that the Secretariat and Organization's day-to-day functions are efficiently carried out. The adopted teamwork approach ([Meet. Proc., 2004-05](#), Section I (NAFO, 2005a)) commenced with a restructuring of tasks and responsibilities among the Secretariat staff along with new job titles. For the first time in NAFO history, detailed job descriptions were elaborated. Flexible work time was implemented, as well as a number of measures to increase transparency and accountability of individual employees. The Secretariat's overall strategy is to meet the Organization's needs and undertake its designated tasks in a cost-effective manner.
29. Three recent developments are notable in terms of their intent to enhance internal specialization within the Secretariat and improve institutional cross-function. These include a 2005 human resource strategy to meet new requirements⁹⁵, a 2007 initiative to enhance the teamwork approach and a Staff professional development program, also initiated in 2007.
30. The current Secretariat's human resources strategy is aimed at strengthening internal specialization, while many of the remaining general tasks are shared among the staff. The present human resources

⁹⁴ These requirements included - (a) broader application of MCS of fisheries, (b) improved collection and dissemination of information on vessels engaged in IUU fishing, (c) development of common data formats and data sharing (which above all demanded significant strengthening of the technical capacity of the Secretariat), and (d) implementation of new communication and information technologies,

⁹⁵ Notably in fisheries monitoring control and surveillance (MCS), improved monitoring of IUU fishing and the development of common data/data-sharing formats. Such developments have necessitated implementation of new communication and information technologies.



structure of 10 employees (including the Executive Secretary), as shown below (Fig. 51), was adopted in 2004 to increase efficiency in meeting the Organization's needs. Five positions in the previous structure were made redundant by this approach and three new positions were created in response to the identified requirements. These comprised the posts of Information Officer, Fisheries Commission Coordinator and IT Manager.

31. Three NAFO Secretariat staff posts are recruited internationally among citizens of the Contracting Parties. The "international postings" are the:
1. Executive Secretary (recruited January 2010),
 2. FC Coordinator (recruited January 2004) and
 3. SC Coordinator (recruited March 2011).

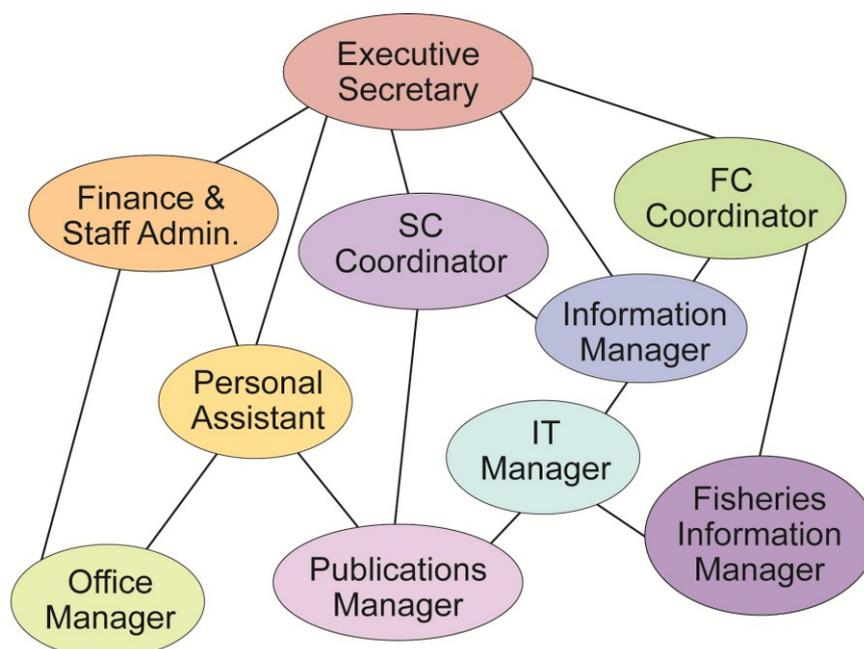


Figure 55. NAFO Secretariat human resources team structure.

32. As approved by the General Council, the following Secretariat employees are in place:

1. Executive Secretary: Vladimir Shibanov
2. Fisheries Commission Coordinator: Ricardo Federizon
3. Scientific Council Coordinator: Neil Campbell
4. Senior Finance and Staff Administrator: Stan Goodick
5. Senior Personal Assistant to the Executive Secretary: Beverly McLoon
6. Information Officer: Barbara Marshall
7. Fisheries Information Manager: Cindy Kerr
8. Publications Manager: Alexis Pacey
9. IT Manager: George Campanis
10. Office Manager: Lisa Pelzmann

33. The Executive Secretary provides an *Administrative Report* to the annual NAFO meeting on the Secretariat's activities. Presumably, this provides an opportunity for Contracting Parties to appraise the Secretariat's and Executive Secretary's performance as well as identify areas of concern.



Communications

34. In terms of advancing external relations, the Secretariat as a whole is actively engaged in widely-disseminating information relevant to NAFO's overall remit. The Executive Secretary is a key attribute in achieving this through his/her accessibility to the media and his/her representation of the General Council.
35. In accordance with General Council decisions, the Secretariat regularly takes part in a number of international meetings. Such activities are reported to the General Council and the Scientific Council meetings under relevant agenda items.

Other Resources

36. The potential issue of scientific load-sharing by Contracting Parties has already been noted (Section 1.4.1). Currently the contribution of scientific expertise to the work of the Scientific Council is relatively evenly spread amongst the Parties. Should this change, or should the work of the Scientific Council require additional scientific expertise, the administrative and financial requirements to support the Council's work may also change.

Performance Review Panel Assessment and Recommendations

1. **The various administrative arrangements attached to the Secretariat's responsibilities and functioning are of a high standard. The Secretariat seems to function well and the organization of meetings, the production of necessary documentation and attached communication are good.**
2. **To give more formal standing to the various Staff position descriptions, working conditions and appraisal procedures outlined in NAFO [Secretariat Staff Structure](#) document (Fischer & Goodick, 2009), the PRP suggests that development of a *NAFO Staff Contract* may be worth considering. In particular, a *Contract* would provide an opportunity to formally outline procedures for dealing with Staff grievances and dismissal specifically.**
3. **Taking into account the relevant existing best practices, there is a need to amend certain provisions of the NAFO Staff Rules pertaining to the rights and obligations of NAFO Secretariat Staff, particularly dismissal or termination of appointment. In so doing, and given the Organization's intergovernmental nature, special attention should be given the relevant provisions of the prevailing Canadian legislation as well as international law in terms of Secretariat staff employment rights, obligations and conditions.**
4. **The increasing task list for the Secretariat appears to have been efficiently handled up to this point. Nevertheless, the PRP feels that there is a need to ensure that a 'critical mass' of essential skills is sustained and that functional continuity should be maintained whenever senior staff leave. To this end, the professional development of Staff and the sharing of essential task skills must continue to be encouraged.**
5. **The Secretariat is close to a critical point in terms of its workload and the availability of personnel to meet daily work needs. The recent addition of new tasks (e.g. daily VMS reporting and archiving) has augmented such pressure. Therefore, the PFP feels that failure to provide additional Secretariat staff capacity will compromise service delivery in the not-too-distant future and should be addressed as a matter of urgency.**



6. **The structure of the Secretariat has recently been reorganized. Any future reorganization or expansion of NAFO's work is likely to be profoundly significant for how the Secretariat organizes its work to sustain a high-level of service delivery. Under such circumstances, the PRP urges that clear guidance should be given by the General Council to ensure that work priorities can be identified and that the need for any additional resources (human or fiscal) are adequately addressed sooner rather than later.**
7. **The Executive Secretary's role in disseminating high-quality information about NAFO should be recognized, along with that of other senior Staff. Consideration of an Organizational communications strategy and media policy may also be of merit. The PRP further suggests that it is worth considering clarification of the Executive Secretary's responsibilities, along with those of other office bearers, for the communication of such information.**
8. **To better determine the efficiency of Secretariat service delivery in particular, the Panel suggests that metrics be developed for Secretariat various duties/tasks. These could be based on a schedule of tasks/activities to be undertaken, the completion of tasks against identified guidelines/deadlines, and the final service outputs delivered in terms of delivery efficiency/standards.**

7.3. Efficiency and effectiveness of NAFO Secretariat support to the work of the Scientific Council and the Fisheries Commission

37. Under Rule 6 of the Rules of Procedure for the Fisheries Commission and Rule 6 of the Rules of Procedure of the Scientific Council, the Fisheries Commission and the Scientific Council (and their subsidiary bodies) are reliant on the services of the NAFO Secretariat in exercising of duties and functions. Staff Rule 3.3 stipulates that Secretariat staff is recruited as:
 - Coordinators- positions of managerial or scientific nature, filled by appropriately qualified professionals recruited internationally among citizens of Contracting Parties and
 - General services- positions of general administrative and technical nature, filled by personnel recruited locally or otherwise nationally from the host country.
38. NAFO is an RFMO characterized by notable scientific activities. Such activities require appropriate support from the Secretariat. With time, the Secretariat has increased and improved the services provided to the Scientific Council, notably including:
 - From 2003, annual publication of the NAFO SC meeting proceedings, Scientific Council Studies, Scientific Council Documents, Statistical Bulletin, Sampling Yearbook and Scientific Council Reports (Redbook). These are all later circulated to Contracting Party delegates ;
 - Enhancing visibility of The Journal of Northwest Atlantic Fisheries Science (further - NAFO Journal);
 - After a long interruption, again providing a General Editor for the NAFO Journal in 2005, instead of a Technical Editor as previously;
 - Validating, archiving and processing vast amounts of scientific information in the Secretariat. This has not only required staff scientific expertise, but also expertise in compliance, VMS systems, IT, fisheries etc. The Secretariat science team is now more actively involved in NAFO's diverse range of science activities, which include the hosting of special session for discussion of particular issues, application of Ecosystem and Precautionary Approaches, management of STATLANT databases, managing science publications (such as NAFO Journal, NAFO Scientific Council Studies, updating of ASFA (Aquatic Sciences and Fisheries Abstracts) and database etc.



- Providing additional, predominantly operational and administrative, support for NAFO constituent body needs. New forms of Scientific Council support has also recently emerged. Over the past few years, the SC has commissioned the NAFO Secretariat to provide several scientific research documents, based upon specific requests from the Scientific Council Chair. These include::
 - Analysis of Shrimp Fishing Effort Using VMS data ([SCR Doc. 07-090](#) (Campanis & Thompson, 2007));
 - Information on Fishing Effort in the NRA for 2006 ([SCR Doc. 07-048](#) (Campanis, 2007));
 - Information on Fishing On and Around the Four Closed Seamount Areas in the NRA ([SCR Doc. 07-006](#) (Thompson & Campanis, 2007));
 - The Geographical Distribution of the High-Seas Commercial Greenland Halibut Fishery in the Northwest Atlantic ([SCR Doc. 08-001](#) (Campanis *et al.*, 2008)), and
 - Requirements to estimate fishing effort from VMS transmissions ([SCR Doc. 08-030](#) (Thompson, 2008)).
 - Most recently, provision of assistance, and collaboration with experts of the Working Group on Ecosystem Approach to Fisheries Management (WGEAFM) in their work on assessing VME-bottom trawling impacts. The Secretariat contribution is evidenced by the document “Evaluating Sponge Encounter Thresholds through GIS Simulation of the Commercial Groundfish Fishery in the NAFO Regulatory Area” ([SCR Doc. 10-071](#), Cogswell *et al.*, 2010).
 - Enhancing data dissemination by improving access to the STATLANT Database. The Secretariat has developed a more dynamic and interactive data extraction tool to allow fisheries managers, scientists and the general public to query NAFO’s STATLANT 21 database directly to retrieve catch data. The tool is accessible at <http://www.nafo.int/fisheries/frames/fishery-21.html> (NAFO, 2011x).
 - Development of an online [search tool](#) for the NAFO Journal website (JNAFS, 2011b). This allows scientists to search journal articles based on author, title or document content.
 - In 2011 the online document search facility will be extended to include the ability to search all NAFO documents (1979-present), including: General Council (GC), Fisheries Commission (FC), and Scientific Council (SCR, SCS) documents.
39. Under Section 4.10 of “[The Structure of the NAFO Secretariat. Positions, Teams and Classification System](#)” (Fischer & Goodick, 2009) the Fisheries Commission Coordinator (FC Coordinator) is tasked with addressing Secretariat services for the NAFO Fisheries Commission and its subsidiary bodies, as well as the NAFO Conservation and Enforcement Measures (NCEM) .
40. The FC Coordinator position is recruited internationally and requires advanced academic qualifications. The skills required contribute to a better Secretariat understanding of fishery-related topics and global/regional fishery management developments within, and beyond, NAFO.
41. In recent years there has been a greater emphasis on addressing the broader needs of a number of international instruments in a more proactive way. This not only implicated on how RFMOs go about their business, it has also brought focus on their performance. A notable development in this regard, has been the recent demands attached to the role of RFMOs in dealing with IUU fishing.
42. For example, there are currently requirements for RFMOs, through the establishment of specific databases to provide hubs for the improved collection and dissemination of information on vessels engaged, in or supporting, IUU fishing. In line, with the relevant international instruments and NAFO decisions, common data formats, data sharing arrangements and standards are being developed for the Organization. In turn, this requires periodic review and the strengthening of Secretariat technical capacity through the involvement of adequately qualified staff.
43. Apart from IUU considerations, the Secretariat has recently expanded its services to the Fisheries Commission with the Fisheries, Science and IT teams leading the Secretariat’s efforts in respect to:



- Since 2003, in particular, the introduction of the Observer Scheme, VMS and the NAFO Compliance Report have contributed to a multiplication of data to be handled. Therefore, the accessibility of fishery information, electronic databases have been improved, and these are maintained and updated on a daily basis by the NAFO Fisheries Information Manager. Electronic reports for STACTIC have also been developed;
- Fisheries information is not only stored, but is also compiled and analyzed according to detailed specifications by STACTIC to allow the generation of a NAFO Compliance Report. This job requires considerable skills and experience with data processing and statistical analysis to ensure that the fisheries information received by the Secretariat is analyzed and compiled by the Fisheries Team for compliance determination by STACTIC;
- The provision of visual, GIS-based analysis of fishing effort in Northwest Atlantic waters to the Scientific Council and Fisheries Commission has been a noticeable step forward. The Secretariat has thus developed its capacity to visualize, summarize and analyze geo-referenced VMS information. Similar maps of fishing effort from Contracting Party submissions have been produced by the Secretariat IT Team to determine the NAFO fishery footprint;
- Assist the Commission with its work in addressing UNGA Res. 61/105 (paragraph 83) requirements attached to the request for RFMOS to regulate bottom fisheries when this causes significant adverse VME impacts. Using Contracting Party submitted data, the Secretariat has mapped and delineated NAFO's bottom fishing grounds (footprint) between for 20 years, between 1987 and 2007; and
- Over the past few years the Fisheries Commission has commissioned the NAFO Secretariat with several analyses of fishing effort using VMS data. In respect to VMS analyses, the Secretariat role is expected to continue in the context of continually improving the quality of NAFO's VMS catch and effort data.

Performance Review Panel Assessment and Recommendations

1. **The PRP noted that, despite an increasing workload and the increased complexity of NAFO's scientific advice and fisheries management activities, the Secretariat continues to support the Organizations' work in a highly professional and effective manner. This is largely attributable to the recent development of a human-relations focus to Secretariat staff as well considerable efforts to ensure, and broaden, expertise available within the Secretariat.**
2. **The PRP commended the Secretariat for its work in support of NAFO.**

7.4. Secretariat staff and other resources needed to effectively carry out its work.

44. Traditionally, the work of the Secretariat has concentrated on finance and administration, organization and support of NAFO meetings, circulation of communications, production and distribution of reports and publications, and compilation of statistics. In 2004, the human resources strategy adopted by NAFO strengthened internal specialization within the Secretariat, while many of the remaining generalized tasks were shared among all staff ([Meet. Proc. 2004-05](#), Section I (NAFO, 2005a)). This strategy entailed:
 - Raising individual competency through training and hiring to enhance the Secretariat's efficiency; and
 - Implementing a teamwork approach to increase the flexibility of the Secretariat as well as its ability to respond to the Organization's future requirements.
45. The teamwork approach has meant that more than one staff member is up-to-date in each work area and it also encourages task sharing. The strategy's implementation resulted in a new structure of the Secretariat. Five positions in the traditional areas of services were made redundant through the new approach and the use of new technologies and equipment (two graphic/arts and printing technicians,



administrative assistant and two statistical clerks). Today there are four key departments in the Secretariat to support the work of the Organization, each department has strong working links with the other departments and promotes teamwork:

1. Finance and Administration:

Finance and Staff Administrator;
Personal Assistant;
Office Manager;

2. Information Dissemination:

Information Officer;
IT Manager;
Publications Manager;

3. Science Support and Scientific Publications:

SC Coordinator;
Publications Manager;

4. Fishery Management Support and Monitoring:

FC Coordinator;
Fisheries Information Manager.

46. A Professional Development Internship (PDI) program initiated in 2006, provides Secretariat staff with meaningful international training opportunities. It also facilitates cooperation and the exchange of ideas/practices with other fisheries organizations.
47. Resources required (human, financial or other) for the functioning of the Secretariat are requested through STACFAD and approved by the Organization. Such requests include furniture and supplies for the Secretariat as well as equipment to properly service a meeting (*i.e.* photocopiers, microphones, wireless networks, etc).
48. The 2009 Headquarters Agreement is still to be signed between NAFO and Canada, following the eventual ratification of the 2007 Amended NAFO Convention.

Performance Review Panel Assessment and Recommendations:

1. **The Performance Review Panel noted that the Secretariat is fully utilizing the available space in the current NAFO Headquarters premises. This could constitute a point of concern in respect to any potential to future Secretariat growth or expansion.**
2. **The PRP recommended that the Secretariat be requested to undertake some scoping and some projection of its future accommodation needs.**
3. **The anticipated expansion of NAFO activities, especially those connected with data collection and sharing, indicates that new communication and information technologies may be required. This will necessitate an elaboration of rigorous professional training programs, and/or opportunities for Secretariat staff. The PRP therefore recommends timely, and adequate, planning for providing the Secretariat with appropriate human, financial and other resources for its future work.**



7.5. Meeting schedule and organization: extent to which the schedule and organization of the meetings could be improved

49. A number of NAFO Convention provisions (Articles IV, V, XIII and XIV) and Rules of Procedure (GC/FC/SC Rules 1, 4, 6 and 8) address the timing and guidelines of NAFO meetings. Forthcoming NAFO meeting schedules and calendars are usually discussed annually and adopted by the relevant NAFO body. Meeting schedules and budgets are also discussed by STACFAD during the Annual Meeting.
50. The smooth conclusion of some meetings has been impaired in the past by proceedings running beyond the scheduled meeting end-time. This has required long overnight sessions and has placed an added burden on both Secretariat and Contracting Party resources, particularly in the production, as well as adoption, of timely/comprehensive meeting reports.

Performance Review Panel Assessment and Recommendations:

1. **To promote institutional efficiency, the work of the General Council should draw on outcomes from the deliberations of the NAFO subsidiary bodies, but it should not duplicate the work already undertaken by these bodies. In this regard, the PRP noted that the entry into force of the Amended Convention will certainly positively impact on the Organization's structure.**
2. **To improve documentation of meeting outcomes, reports should be as succinct as possible and confined to matters of substance only. Technical details can be provided in appendices and as far as possible reports should represent a distillation of collective views, unless otherwise decided for controversial/high priority subjects. Executive summaries of key conclusions and decisions should be provided if possible.**



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Appendix I - Terms of Reference of the Performance Review

NAFO Performance Review

(NAFO/GC Doc. 10/4 (NAFO, 2010b))

I. Objective

The objective of the work to be carried out by the Review Panel shall be:

To assess the performance of NAFO since 1979 against the objectives set out in the NAFO Convention and other relevant international instruments addressing the conservation and management of marine living resources, with special emphasis on the period since 1995, duly noting the objectives reflected in the amendments to the Convention adopted by NAFO in 2007.

Consideration should be given to the developments in fisheries and ocean management that have taken place during the period covered by the review.

The review shall be performed on the basis of the criteria provided in the Annex and point to achievements as well as identify areas which could be improved.

II. Panel Composition

The Review Panel shall be composed as follows:

- External experts: Three external experts in fisheries management, fisheries science, and Law of the Sea matters, as proposed by FAO/ICES/UNDOALOS respectively, one of whom shall be the Chair of the Panel to be decided by the Panel. These experts shall not have participated in the work of NAFO, and shall not be a national of any NAFO Contracting Party.
- Internal experts: Canada, Denmark (in respect of Faroe Islands and Greenland), the European Union and the Russian Federation shall each nominate one panel member with experience and knowledge of NAFO. The names of experts should be forwarded to NAFO Secretariat by Contracting Parties selected as soon as possible and not later than 3 weeks after the NAFO Annual Meeting.

In addition the Chair of STACTIC shall act as a resource person to the Panel.

III. Administration

NAFO Executive Secretary shall contact ICES, FAO and UNDOALOS immediately after the Annual Meeting requesting nominees for the NAFO Performance Review Panel.

Meeting(s) of the Review Panel shall be held at the NAFO Headquarters in Dartmouth, NS, Canada.

The Secretariat shall provide administrative assistance to the Panel.

Contracting Parties shall pay for the participation of their respective representatives to meeting(s) of the Panel.

The travel costs of the external experts shall be reimbursed and they shall receive a per diem to cover their accommodation and subsistence costs. In addition the experts may receive a fee for the work undertaken.

IV. Report of the Review Panel

The report shall be provided to the NAFO Secretariat for distribution to its Contracting Parties at least 45 days before the 2011 Annual Meeting and subsequently made public on the NAFO website. The report shall be presented by the Chair of the Panel to that meeting.



Appendix II - Criteria for Reviewing the Performance of NAFO

Criteria for Reviewing the Performance of NAFO

Area	General criteria	Detailed criteria
<i>1. Conservation and management</i>	Status of living marine resources	<ul style="list-style-type: none"> • Status of marine living resources under the purview of NAFO. • Trends in the status of those resources. • Status of species that belong to the same ecosystems as, or are associated with or dependent upon, targeted marine living resources. • Trends in the status of those species.
	Ecosystem approach	<ul style="list-style-type: none"> • Extent to which NAFO decisions take account of and incorporate an ecosystem approach to fisheries management.
	Data collection and sharing	<ul style="list-style-type: none"> • Extent to which NAFO has agreed formats, specifications and timeframes for data submissions, taking into account Annex 1 of the 1995 UN Fish Stocks Agreement. • Extent to which NAFO Contracting Parties, individually or through NAFO, collect and share complete and accurate data concerning marine living resources and other relevant data in a timely manner, including analysis of trends in fishing activities over time. • Extent to which fishing and research data and fishing vessel and research vessel data are gathered by NAFO and shared among Contracting Parties. • Extent to which NAFO is addressing any gaps in the collection and sharing of data as required.
	Quality and provision of scientific advice	<ul style="list-style-type: none"> • Extent to which NAFO produces the best scientific advice relevant to the marine living resources under its purview, as well as to the effects of harvesting, research, conservation and associated activities, on the marine ecosystem.
	Adoption of conservation and management measures	<ul style="list-style-type: none"> • Extent to which NAFO has adopted measures based on the best scientific advice available to ensure the long-term conservation and sustainable use of marine living resources in the Convention Area. • Extent to which NAFO has applied a precautionary approach as set forth in Article 6 of the 1995 UN Fish Stocks Agreement, including the application of precautionary reference points. • Extent to which consistent/compatible management measures have been adopted as set out in Article 7 of the 1995 UN Fish Stocks Agreement. • Extent to which NAFO successfully allocates fishing opportunities consistent with the NAFO Convention and Article 11 of the 1995 UN Fish Stocks Agreement. • Extent to which NAFO has moved toward the adoption of conservation and management measures for previously unregulated fisheries, including new and exploratory fisheries. • Extent to which NAFO has taken due account of the need to conserve marine biological diversity and minimize harmful impacts of fishing activities and research on living marine resources and marine ecosystems. • Extent to which NAFO has adopted measures to minimise pollution, waste, discards, catch by lost or abandoned gear, catch of non-target marine living resources, and impacts on associated or dependent species through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing



		<p>gear and techniques.</p> <ul style="list-style-type: none"> • Extent to which NAFO has adopted and is implementing effective rebuilding plans for depleted or overfished stocks including guidance for stocks under moratoria.
	Capacity management	<ul style="list-style-type: none"> • Extent to which NAFO has identified fishing capacity levels commensurate with the conservation objectives of the NAFO Convention. • Extent to which NAFO has taken actions to prevent or eliminate excess fishing capacity and effort. • Extent to which NAFO monitors the levels of fishing effort, including taking into account annual notifications of participation by Contracting Parties.
<i>2. Compliance and enforcement</i>	Flag State duties	<ul style="list-style-type: none"> • Extent to which NAFO Contracting Parties are fulfilling their duties as flag States under the NAFO Convention, pursuant to measures adopted by NAFO, and under other international instruments, including, inter alia, the 1982 Law of the Sea Convention, 1995 UN Fish Stocks Agreement and the 1993 FAO Compliance Agreement, as applicable.
	Port State measures	<ul style="list-style-type: none"> • Extent to which NAFO has adopted measures relating to the exercise of the rights and duties of its Contracting Parties as port States, as reflected in Article 23 of the 1995 UN Fish Stocks Agreement, as well as the minimum standards set out in the 2009 FAO Agreement on Port State Measures to Combat IUU Fishing. • Extent to which these measures are effectively implemented.
	Monitoring, control and surveillance (MCS)	<ul style="list-style-type: none"> • Extent to which NAFO has adopted integrated MCS measures (e.g. required use of boarding and inspection schemes, VMS, observers, catch documentation and/or trade tracking schemes, and restrictions on transshipment). • Extent to which these measures are effectively implemented.
	Follow-up on infringements	<ul style="list-style-type: none"> • Extent to which NAFO and its Contracting Parties follow up on infringements to conservation and management measures.
	Cooperative mechanisms to detect and deter non-compliance	<ul style="list-style-type: none"> • Extent to which NAFO has established adequate cooperative mechanisms to both monitor compliance and detect and deter non-compliance (e.g. compliance committees, vessel lists, sharing of information about non-compliance). • Extent to which these mechanisms are being effectively utilised.
	Market-related measures	<ul style="list-style-type: none"> • Extent to which NAFO has adopted measures relating to the exercise of the rights and duties of NAFO Contracting Parties as market States for marine living resources under the purview of NAFO. • Extent to which these measures are being effectively utilized.
<i>3. Decision-making and dispute settlement</i>	Decision-making	<ul style="list-style-type: none"> • Efficiency of NAFO meetings in addressing critical issues in a timely and effective manner. • Extent to which NAFO has transparent, consistent and adequate decision-making procedures that facilitate the adoption of conservation and management measures in a timely and effective manner.
	Dispute settlement	<ul style="list-style-type: none"> • Extent to which NAFO has established adequate mechanisms for resolving disputes.



<i>4. International cooperation</i>	Transparency	<ul style="list-style-type: none"> • Extent to which NAFO is operating in a transparent manner, taking into account Article 12 of the 1995 UN Fish Stocks Agreement. • Extent to which NAFO decisions, meeting reports, scientific advice upon which decisions are made, and other relevant materials are made publicly available in a timely fashion.
	Relationship with non-Contracting Parties	<ul style="list-style-type: none"> • Extent to which non-Contracting Parties have undertaken fishing activities in the NAFO Regulatory Area. • Extent to which NAFO facilitates cooperation with non-Contracting Parties, including encouraging non-Contracting Parties to become Contracting Parties or to implement NAFO conservation and management measures voluntarily. • Extent to which NAFO provides for action in accordance with international law against non-Contracting Parties undermining the objective of the Convention, as well as measures to deter such activities.
	Cooperation with other international organisations	<ul style="list-style-type: none"> • Extent to which NAFO cooperates with Regional Fisheries Management Organizations and other international organisations.
	Special requirements of developing States	<ul style="list-style-type: none"> • Extent to which NAFO recognises the special needs of developing States and cooperates with developing States, taking into account Part VII of the 1995 UN Fish Stocks Agreement. • Extent to which NAFO Contracting Parties, individually or through the Commission, provide relevant assistance to developing States as reflected in Article 26 of UN Fish Stocks Agreement.
<i>5. Financial and administrative issues</i>	Availability of resources for activities	<ul style="list-style-type: none"> • Extent to which financial and other resources are made available to achieve the aims of NAFO and to implement NAFO's decisions.
	Efficiency and cost-effectiveness	<ul style="list-style-type: none"> • Extent to which NAFO is efficiently and effectively managing its human and financial resources, including those of the Secretariat. • Extent to which the schedule and organization of the meetings could be improved.



Appendix III - CVs of the Panel Experts

EXTERNAL EXPERTS

FABIO HAZIN

Prof. Fabio Hazin was born in Recife, Brazil, in June 04, 1964. He graduated as a fisheries engineer, from Universidade Federal Rural de Pernambuco, in 1987, and got his Master and D.Sc. Degree in Fisheries Oceanography, from the Tokyo University of Marine Science and Technology, in Japan, in 1991 and 1994, respectively. He also did a course on the Law of the Sea, in the Rhodes Academy. He has an academic background on fisheries biology of highly migratory fish species and fisheries management. He Chaired the FAO Technical Consultation to draft a legally binding instrument on Port State Measures, in 2008- 2009. Presently he is the head of the Fisheries and Aquaculture Department of Universidade Federal Rural de Pernambuco, Brazil; Chair of the International Commission for the Conservation of Atlantic Tunas; President of the Brazilian Society of Fisheries Engineering; Scientific Coordinator of the Saint Peter and Saint Paul Archipelago Research Station; and President of the State Committee for the prevention of Shark Attacks. He has participated in more than 150 international Meetings, in the past 15 years, including the past 7 FAO/ COFI Meetings, FAO Conferences, several FAO Expert and Technical Consultations, the past 15 ICCAT SCRS Meetings and Commission Meetings, Meetings of the UNICPOLOS, of the UN Sustainable Development Commission, UNFSA Review Conference, etc. He has over 100 scientific papers published in several International Journals, 22 book chapters and has edited 5 books. His main field of activities includes fisheries policy and management, fisheries science, and fisheries oceanography.

MILTON O. HAUGHTON

Milton Haughton (B.Sc, M.Sc, PgD.Man., CPE/PgDL, LPC) is an expert in fisheries policy, law and management with approximately 30 years national, regional and international experience. He is currently the Deputy Executive Director of the Caribbean Regional Fisheries Mechanism which is headquartered in Belize City, Belize. Mr. Haughton has over the past 22 years been the chief advisor to CARICOM Governments on fisheries governance and related issues, and has written and published widely on various aspects of fisheries and marine policy, law, conservation, management and development. He has extensive experience advising Caribbean Governments and regional organizations on fisheries related issues in multilateral and bilateral negotiations such as ACP-EU Relations, WTO, CARICOM/Japan, CARICOM/Canada, as well as leading multi-disciplinary teams in analyzing, negotiating, drafting and implementing fisheries and marine sector policies, agreements and legislation at the regional and national levels. In particular, he coordinated the negotiations and provided advice to Caribbean governments leading to the establishment of the Caribbean Regional Fisheries Mechanism in 2003. And more recently, the negotiations and drafting of the St Lucia Declaration on IUU Fishing (2010), the Caribbean Community Common Fisheries Policy (2011), and Belize's new fisheries legislation. In addition, he has represented CARICOM countries at numerous regional and international conferences and meetings including, inter alia, UN, FAO, WECAFC, CITES, UNEP, IOC/UNESCO, ICCAT, ACP-EU, WTO, GEF. Mr. Haughton did his undergraduate studies at the University of the West Indies (UWI), Jamaica, and postgraduate studies at UWI, University of Buckingham, London Metropolitan University and the College of Law, London.

DENZIL G.M. MILLER

Denzil Miller has a PhD in marine biology from the University of Cape Town and is currently an Honorary Research Professor at the University of Tasmania and Professorial fellow at the University of Wollongong. He received the South African Antarctic Medal in 1995 and the prestigious Duke of Edinburgh Conservation Medal in 2007 for his contribution to Antarctic conservation and management. Denzil has published widely on marine and resource biology, policy, management and conservation issues. He has lead 15 research cruises to the Antarctic and Sub-Antarctic, been involved in the negotiation of a number of marine fisheries agreements internationally, convened the SCAR Group of Specialists on Southern Ocean Ecology and chaired the CCAMLR Scientific Committee between 1997 and 2000. He served as the Executive Secretary of the 25-nation Commission for the Conservation of Antarctic Marine Living Resources (2002) from 2002 to 2010, and chaired the United Nations Food and Agriculture Organisation's (FAO) Regional Fisheries Bodies Secretariat Network from 2003 to 2009. Denzil has served as an expert advisor to the FAO on a number of subjects and as a reviewer of more than 10 national Antarctic marine science programmes. He is currently Director: Antarctic Tasmania, Science and Research.



INTERNAL EXPERTS

JAMES W. BAIRD

James W. Baird was born and raised in St. John's, Newfoundland and Labrador. He holds a Bachelor of Science (Mathematics) degree from Memorial University of Newfoundland and Labrador.

Mr. Baird began his career with Department of Fisheries and Oceans, Government of Canada in 1978 as a Research Technician and progressed to more senior Science positions as a Bio-Mathematician, Stock Assessment Biologist, and Senior Stock Assessment Biologist.

In 1993, Mr. Baird moved to the Fisheries Management Branch as Staff Officer, Groundfish, followed by promotions to Chief, Allocations and Licencing, Director, Resource Management, and Regional Director, Fisheries Management Branch.

In 2004, Mr. Baird was appointed as Associate Regional Director General for the NL Region and, in 2008, was appointed Regional Director General, Newfoundland and Labrador Region, the most senior departmental position in the Province.

Mr. Baird is responsible for the management of Canada's regulatory and public policy interests in domestic and international fisheries in the Region and, since 2010, has been the Canadian delegation head to the Northwest Atlantic Fisheries Organization.

EINAR LEMCHE

Einar Lemche was born in 1939 in Denmark. He was a graduate in law in 1963 and was employed by the Danish Ministry for Greenland from 1964, and by the Greenland Government 1983- 2007. He was Head of Greenland's representation in Denmark 1998-2007. He served as Head of delegation in most of Greenland's bilateral and multilateral negotiations on fisheries. He chaired various Working Groups in NAFO, NEAFC, NASCO, NAMMCO and IWC. He served as President of NAFO 1993-95, of NASCO 1996-2000, and of NEAFC 2000-06.

OLGA M. SEDYKH

Olga M. Sedykh graduated from the Moscow State Institute of International Relations and holds a Bachelor of Science degree in International Economic Relations.

Mrs. Sedykh started her career with Sovrybflot – Foreign Economic Corporation, which dealt with overseas fishing operations of the Russian vessels, as well as export and import of fish products. Mrs. Sedykh was in charge of matters related to fishing operations of national vessels in overseas waters, including the provision of agent services in foreign ports, and their supplies and repair. She later dealt with issues related to international trade with fish and fish products.

In 1997, Mrs. Sedykh moved to the All-Russian Association of Fisheries Exporters and Entrepreneurs, which is a non-commercial union acting in the interests of representatives of fisheries enterprises, organizations and companies, including regional associations of fishermen. She was responsible for the implementation of fisheries related programs, coordination of the Association members' activities and international cooperation.

In 2008, Mrs. Sedykh joined the International Cooperation Department of the Federal Agency for Fisheries. She holds the position of Deputy Head of International Law Division and is responsible for the organization and coordination of activities to ensure the fulfilment of obligations of the Russian Federation under international agreements, with focusing on legal frameworks of this work.

JOHN SPENCER

John Spencer was born in Dublin, and raised in Cork, Ireland. He graduated from University College Cork (UCC) with a Bachelor of Arts Degree (Economics, Sociology) in 1971. He is married with three children.

Having started his career in the Irish Department of Finance in 1971, he transferred to the European Commission in Brussels in 1973. His initial work dealt with the development and financial monitoring of vocational training projects financed under the EC budget. Later work entailed the monitoring of development projects throughout Africa. In a brief period with the European Court of Auditors, he drew up a Special Report for the Council of Ministers and European Parliament on the European Union's financial instruments (Loan Facilities and Interest Rate Subsidies)

From autumn 1982 to this day, John has been involved in international fisheries management in all its facets. Initially, he worked as assistant to the EU negotiator on our main bilateral fisheries agreements with the Nordic Countries and Canada. After that period, he became EU negotiator for Fisheries Agreements with Morocco, other countries in Western Africa and Argentina.



John then took over responsibility as EU Head of Delegation, leading the EU negotiation teams to over 15 Regional Fisheries Management Organisations in the period 2001 to 2008, including NAFO, ICCAT, WCPFC, SEAFO etc. In that time, he was Chairman of the Indian Ocean Tuna Organisation and South East Atlantic Fisheries Organisation (SEAFO), and Vice Chairman of both NAFO and ICCAT.

From 2008 to date, he returned to his first love, this time as EU negotiator with the Nordic Countries and EU Head of Delegation to NEAFC.



Appendix IV - NAFO Performance Review Work Plan

1. The task.

According to [GC Doc. 10/4](#) (NAFO, 2010b), the task of the Performance Review Panel is to **assess the performance of NAFO, since 1979, with a special emphasis on the period since 1995, on the basis of the 45 criteria provided in the Annex of that document, against the objectives set out in the NAFO Convention and other relevant international instruments addressing the conservation and management of marine living resources, while duly noting the objectives reflected in the amendments to the Convention adopted by NAFO in 2007.** The 45 criteria listed in the referred document were grouped in 5 Major Areas: (i) Conservation and management, (ii) Compliance and enforcement, (iii) Decision-making and dispute settlement, (iv) International cooperation, and (v) Financial and Administrative Issues. From the Performance Review guidelines, therefore, the objective of the assessment can be understood as to identify the achievements and lessons for future reform of NAFO to strengthen its effectiveness and thereby to improve the management and conservation of the resource systems and the profitability of the fleets operating within the convention area. The performance review, therefore, while focusing on NAFO improvements in recent years, should also properly capture the history of NAFO in the earlier period. With this view, the following issues should be considered, inter alia:

- The mandate and historical development of NAFO;
- Current state of the fisheries and ecosystems under NAFO's jurisdiction;
- The nature and scope of the decisions made regarding research, management and conservation of the resources under NAFO's jurisdiction;
- Compliance with decisions made and their enforcement by Contracting Parties; and
- The current and ongoing challenges facing the organization

Considering, however, the logic flow of events, from the establishment of the Convention to the actual results, at sea, the issues to be covered can be divided as follows:

- A) The legal and institutional framework: the basic texts, NAFO Conventions, old and new, and relevant international instruments such as UNCLOS, UNFSA, FAO Code of Conduct; plus the institutional arrangements established to undertake the work of the organization. (addressed in sections 3 and 6 of the Performance Review Report)
- B) The work of the Scientific Council: the quantity and quality of the data received, processed and analyzed (including whether there are data and/ or information that Contracting Parties should or could have provided but have failed to do so in a timely manner); the frequency and quality of the stock assessments done, and the consequent management recommendations presented to the Commission, etc. (addressed in section 4 of the Performance Review Report)
- C) The work of the General Council/ Fisheries Commission: all conservation and management measures adopted by NAFO, since 1979; how the implementation of these measures has been verified and ensured, including follow-up on infringements; how are rules for the decision-making process and dispute settlement, etc. (addressed in sections 3, 4 and 6 of the Performance Review Report)
- D) The work of Contracting Parties: how the conservation and management measures adopted by NAFO have been implemented by its Contracting Parties, including data provision, MCS, etc. (addressed in section 5 of the Performance Review Report)
- E) The work of the Secretariat: adequacy of the resources provided to the Secretariat in relation to its mandate and how the Secretariat is managing its human and financial resources; how efficiently and effectively it is supporting the work of the Scientific Council and of the Commission. (addressed in section 7 of the Performance Review Report)
- F) The final results of NAFO work: the present situation and the historical evolution of the organization and the condition of the marine living resources, managed by NAFO, since 1979.

The 45 listed criteria can be easily changed into questions and then grouped under each of the above items (A through F), noting that some criteria will imply similar questions to more than one item. In order to do



the performance review, therefore, the panel should seek the answers to the questions listed below. Two other issues, however, which the panel considered to be very important but were not included in the criteria are the possible effects of climate change and communication and public relations. In order to include these aspects into the assessment, the following 2 questions were included in the list, in items B (13) and C (26), respectively:

- Has the climate change been factored in the work of NAFO to date and how will it be incorporated in the future?
 - Does NAFO actively seek to disseminate and communicate with stakeholders and the public to ensure they get accurate information and a good understanding of the issues and challenges associated with its work?
 - Another question, of a more general nature, which has been added to the list, in items B (14), D (9) and E (4) was:
 - Are there any other important current or ongoing issues that in your opinion should be considered in the Performance Review?
- A) The legal and institutional framework: the basic texts, NAFO Conventions, old and new, and relevant international instruments such as UNCLOS, FSA, Code of Conduct; plus the institutional arrangements established to undertake the work of the organization.
1. To what extent has NAFO incorporated in its basic texts the ecosystem approach to fisheries management?
 2. To what extent has NAFO incorporated in its basic texts, the precautionary approach as set forth in Article 6 of the 1995 UN Fish Stocks Agreement, including the application of precautionary reference points?
 3. To what extent has NAFO incorporated in its basic texts transparent, consistent and adequate decision-making procedures that facilitate the adoption of conservation and management measures in a timely and effective manner?
 4. To what extent has NAFO incorporated in its basic texts adequate mechanisms for resolving disputes?
 5. To what extent has NAFO recognized in its basic texts the special needs of developing States, taking into account Part VII of the 1995 UN Fish Stocks Agreement?
 6. To what extent has NAFO incorporated the principle of conservation and sustainable use of the fisheries resources? If the above principles are not incorporated in the basic texts, are they incorporated in other policy documents and used to guide the work of NAFO?
 7. Are there other relevant sustainability principles that have been incorporated in the basic texts or other policy documents?
 8. To what extent are the above principles and approaches applied or followed in the decision-making process by the organs of NAFO and the Contracting Parties?
- B) The work of the Scientific Council: the quantity and quality of the data received, processed and analyzed (including whether there are data and/ or information that Contracting Parties should or could have provided but have failed to do so in a timely manner); the frequency and quality of the stock assessments done, and the consequent management recommendations presented to the Commission, etc.
1. To what extent do the scientific recommendations of the Scientific Council take account of and incorporate an ecosystem approach to fisheries management?
 2. To what extent has the Scientific Council taken due account of the need to conserve marine biological diversity and minimize harmful impacts of fishing activities and to carry out research on living marine resources and marine ecosystems?
 3. To what extent has the Scientific Council proposed measures to minimize pollution, waste, discards, catch by lost or abandoned gear, catch of non-target marine living resources, and impacts on associated or dependent species through measures including, to the extent



practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques?

4. To what extent has the Scientific Council agreed formats, specifications and timeframes for data submissions, taking into account Annex 1 of the 1995 UN Fish Stocks Agreement?
 5. To what extent does the Scientific Council collect and analyze complete and accurate data concerning marine living resources and other relevant data in a timely manner, including analysis of trends in fishing activities overtime?
 6. To what extent are fishing and research data and fishing vessel and research vessel data gathered and analyzed by the Scientific Council?
 7. To what extent has the Scientific Council addressed any gaps in the collection and sharing of data as required?
 8. To what extent has the Scientific Council produced the best scientific advice relevant to the marine living resources under its purview, as well as to the effects of harvesting, research, conservation and associated activities, on the marine ecosystem?
 9. To what extent has the Scientific Council applied a precautionary approach as set forth in Article 6 of the 1995 UN Fish Stocks Agreement, including the application of precautionary reference points, in its recommendations to the Commission?
 10. To what extent has the Scientific Council examined and identified fishing capacity levels commensurate with the conservation objectives of the NAFO Convention?
 11. To what extent has the Scientific Council operated in a transparent manner, taking into account Article 12 of the 1995 UN Fish Stocks Agreement?
 12. To what extent have the decisions, meeting reports, scientific advice upon which decisions are made, and other relevant materials generated by the Scientific Council made publicly available in a timely fashion?
 13. Has the climate change been factored in the work of NAFO to date and how will it be incorporated in the future?
 14. Are there any other important current or ongoing issues that in your opinion should be considered in the Performance Review?
- C) The work of the General Council/ Fisheries Commission: all conservation and management measures adopted by NAFO, since 1979; how the implementation of these measures has been verified and ensured, including follow-up on infringements; how are rules for the decision-making process and dispute settlement, etc.
1. To what extent have NAFO decisions taken account of and incorporated an ecosystem approach to fisheries management?
 2. To what extent has NAFO taken due account of the need to conserve marine biological diversity and minimize harmful impacts of fishing activities and research on living marine resources and marine ecosystems?
 3. To what extent has NAFO adopted measures to minimize pollution, waste, discards, catch by lost or abandoned gear, catch of non-target marine living resources, and impacts on associated or dependent species through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques?
 4. To what extent has NAFO agreed formats, specifications and timeframes for data submissions, taking into account Annex 1 of the 1995 UN Fish Stocks Agreement?
 5. To what extent is NAFO addressing any gaps in the collection and sharing of data as required?



6. To what extent has NAFO adopted measures based on the best scientific advice available to ensure the long term conservation and sustainable use of marine living resources in the Convention Area?
7. To what extent has NAFO applied a precautionary approach as set forth in Article 6 of the 1995 UN Fish Stocks Agreement, including the application of precautionary reference points?
8. To what extent has NAFO adopted consistent/compatible management measures as set out in Article 7 of the 1995 UN Fish Stocks Agreement?
9. To what extent has NAFO successfully allocated fishing opportunities consistently with the NAFO Convention and Article 11 of the 1995 UN Fish Stocks Agreement?
10. To what extent has NAFO moved toward the adoption of conservation and management measures for previously unregulated fisheries, including new and exploratory fisheries?
11. To what extent has NAFO adopted and implemented effective rebuilding plans for depleted or overfished stocks including guidance for stocks under moratoria?
12. To what extent has NAFO identified fishing capacity levels commensurate with the conservation objectives of the NAFO Convention?
13. To what extent has NAFO taken actions to prevent or eliminate excess fishing capacity and effort?
14. To what extent has NAFO monitored the levels of fishing effort, including taking into account annual notifications of participation by Contracting Parties?
15. To what extent has NAFO adopted measures relating to the exercise of the rights and duties of its Contracting Parties as port States, as reflected in Article 23 of the 1995 UN Fish Stocks Agreement, as well as the minimum standards set out in the 2009 FAO Agreement on Port State Measures to Combat IUU Fishing?
16. To what extent has NAFO adopted integrated MCS measures (e.g. required use of boarding and inspection schemes, VMS, observers, catch documentation and/ or trade tracking schemes, and restrictions on transshipment)?
17. To what extent has NAFO followed up on infringements to conservation and management measures?
18. To what extent has NAFO established adequate cooperative mechanisms to both monitor compliance and detect and deter non-compliance (e.g. compliance committees, vessel lists, sharing of information about non-compliance)?
19. To what extent has NAFO effectively utilized the cooperative mechanisms established to monitor compliance and to detect and deter non-compliance?
20. To what extent has NAFO adopted measures relating to the exercise of the rights and duties of NAFO Contracting Parties as market States for marine living resources under its purview?
21. How efficient have NAFO meetings been in addressing critical issues in a timely and effective manner?
22. To what extent has NAFO established transparent, consistent and adequate decision-making procedures that facilitate the adoption of conservation and management measures in a timely and effective manner?
23. To what extent has NAFO established adequate mechanisms for resolving disputes?
24. To what extent has NAFO operated in a transparent manner, taking into account Article 12 of the 1995 UN Fish Stocks Agreement?
25. To what extent have NAFO decisions, meeting reports, scientific advice upon which decisions are made, and other relevant materials made publicly available in a timely fashion?



26. Has NAFO actively sought to disseminate and communicate with stakeholders and the public to ensure they get accurate information and a good understanding of the issues and challenges associated with its work?
 27. To what extent has NAFO facilitated cooperation with non-Contracting Parties, including encouraging non-Contracting Parties to become Contracting Parties or to implement NAFO conservation and management measures voluntarily?
 28. To what extent has NAFO provided for action in accordance with international law against non-Contracting Parties undermining the objective of the Convention, as well as measures to deter such activities?
 29. To what extent has NAFO cooperated with Regional Fisheries Management Organizations and other international organizations?
 30. To what extent to has NAFO recognized the special needs of developing States and has cooperated with them, taking into account Part VII of the 1995 UN Fish Stocks Agreement?
 31. To what extent to has NAFO provided relevant assistance to developing States as reflected in Article 26 of UN Fish Stocks Agreement?
 32. To what extent is NAFO efficiently and effectively managing its human and financial resources, including those of the Secretariat?
 33. To what extent could the schedule and organization of NAFO meetings be improved?
- D) The work of Contracting Parties: how the conservation and management measures adopted by NAFO have been implemented by its Contracting Parties, including data provision, MCS, etc.
1. To what extent have NAFO Contracting Parties collected and shared complete and accurate data concerning marine living resources and other relevant data in a timely manner?
 2. To what extent have NAFO Contracting Parties fulfilled their duties as flag States under the NAFO Convention, pursuant to measures adopted by NAFO, and under other international instruments, including, inter alia, the 1982 Law of the Sea Convention, 1995 UN Fish Stocks Agreement and the 1993 FAO Compliance Agreement, as applicable?
 3. In case NAFO has adopted measures relating to the exercise of the rights and duties of its Contracting Parties as port States, as reflected in Article 23 of the 1995 UN Fish Stocks Agreement, as well as the minimum standards set out in the 2009 FAO Agreement on Port State Measures to Combat IUU Fishing, to what extent have NAFO Contracting Parties effectively implemented these measures?
 4. To what extent have NAFO Contracting Parties effectively implemented integrated MCS measures (e.g. required use of boarding and inspection schemes, VMS, observers, catch documentation and/ or trade tracking schemes, and restrictions on transshipment) adopted by the Commission?
 5. To what extent have NAFO Contracting Parties followed up on infringements to conservation and management measures?
 6. To what extent have NAFO Contracting Parties effectively utilized NAFO adopted measures relating to the exercise of their rights and duties as market States for marine living resources under the purview of NAFO?
 7. To what extent have NAFO Contracting Parties provided relevant assistance to developing States as reflected in Article 26 of UN Fish Stocks Agreement?
 8. To what extent have financial and other resources been made available by the Contracting Parties to achieve the aims of NAFO and to implement NAFO's decisions?
 9. Are there any other important current or ongoing issues that in your opinion should be considered in the Performance Review?



- E) The work of the Secretariat: how the Secretariat is managing its human and financial resources; how efficiently and effectively it is supporting the work of the Scientific Council and the Commission.
1. To what extent has NAFO Secretariat efficiently and effectively managed its human and financial resources?
 2. How efficiently and effectively has the NAFO Secretariat supported the work of the Scientific Council and the Commission?
 3. Is the NAFO Secretariat adequately staffed and provided with other resources needed to effectively carry out its work?
 4. Are there any other important current or ongoing issues that in your opinion should be considered in the Performance Review?
- F) The final results of NAFO work: the present situation and the historical evolution of the condition of the marine living resources, managed by NAFO, since 1979.
1. What have been the major historical developments in fisheries within the NAFO area?
 2. What is the present status of marine living resources under the purview of NAFO?
 3. What are the trends in the status of those resources?
 4. What is the present status of those species that belong to the same ecosystems as, or are associated with or are dependent upon, targeted marine living resources under the purview of NAFO?
 5. What are the trends in the status of those species?
 6. To what extent have non-Contracting Parties undertaken fishing activities in the NAFO Regulatory Area?

2. Task distribution.

In order to answer the 74 questions listed above, the workload has been distributed among Panel members, as follows:

- A: Milton Houghton (the legal external expert) + Edward John Spencer
 B & F: Denzil Miller (the fisheries science external expert) + James Baird
 C: Fabio Hazin (the fisheries management external expert) + Einar Lemche
 D & E: Fabio Hazin (the fisheries management external expert) + Olga Sedykh

In order to carry out their tasks, the respective teams will base their work on the following material, inter alia:

- A: (i) the basic texts of NAFO, vis a vis the relevant international instruments addressing the conservation and management of marine living resources;
- B & F: (i) meeting reports and scientific recommendations of the Scientific Council;
 (ii) questionnaires B and F to be submitted to the Scientific Council, including its subsidiary bodies (STACFIS, STACREC, STACPUB and STACFEN);
 (iii) composite plots of the catches for the species managed by NAFO, by year, compared with the allocated allowed catch;
- C: (i) meeting reports and the conservation and management measures adopted by the Fisheries Commission;
 (ii) questionnaire C, to be submitted to the Fisheries Commission, including its subsidiary body (STACTIC);
- D & E: (i) questionnaires D and E, to be submitted to Contracting Parties and to the Fisheries Commission, including its subsidiary body (STACTIC);



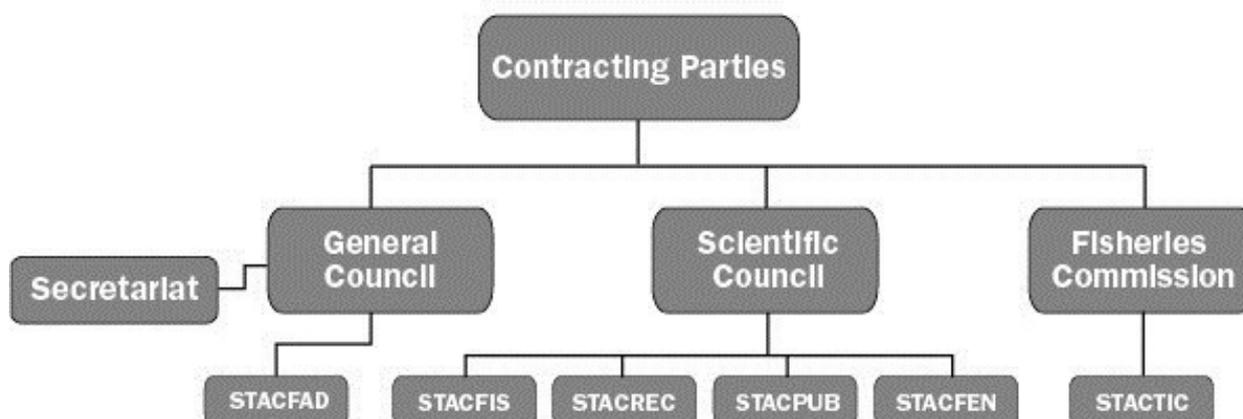
Both the Scientific Council and the Secretariat are also expected to provide relevant background material relating to each of the criteria listed above. All questionnaires should be distributed to the respective bodies by January 3rd, with the expectation that the answers can be provided by February 14th, so that the respondents will have a month and a half (6 weeks) to answer them and the Performance Review Panel a couple of weeks to process the replies, before the meeting scheduled to happen from February 28th to March 4th (ending by noon). The majority of the Panel members were of the view that the opinion of Non-Contracting Parties and NGOs **should not be sought**, at least at this stage of the Performance Review.

Considering the significant overlap among the different sections, and hence the work of the panelists, which are connected to each other, the analyses and findings within each section (A to F) are likely to raise issues that will require further review and analysis by the persons reviewing the other sections. Therefore, during the first meeting of the Performance Review Panel, the draft evaluation of each section (A, B & F, C and D & F) will be reviewed collectively, to reach consensus on the assessment, as well as on the recommendations stemming from them. The first draft of each section shall be seen, thus, as preliminary drafts only, which may need to (and quite probably will) be revised and refined after the first meeting, at which each panelist will be able to consider and review the preliminary findings of the others, clarify the factual issues, receive comments on their work, and, more importantly, develop an appreciation of the entire picture not just the section they are working on.

The Panel also agreed that, besides items A through F, the Report should also contain an introductory section, and a closing one, with Conclusions and Recommendations, as well as an 'Executive summary' to facilitate the reading by the Commissioners.



Appendix V- NAFO Structure



1. The General Council

The General Council is responsible to supervise and coordinate the organizational, administrative, financial and other internal affairs of the Organization, including the relations among its constituent bodies and external relations of the Organization. It also reviews the membership of the Fisheries Commission and any other authority conferred upon it by the NAFO Convention. Each Contracting Party is a member and appoints to the Council up to three representatives.

The chairperson of General Council also serves as President for NAFO. As of September 2006 General Council has 1 Standing Committee: STACFAD- Standing Committee on Finance and Administration. At the Annual Meeting it was agreed to incorporate STACFAC (Standing Committee on Non-Contracting Party Fishing Activity) into STACTIC. This merger is reflected in the amended Rules of Procedure and the Conservation and Enforcement Measures.

a) STACFAD- Standing Committee on Finance and Administration

The STACFAD consists of representatives from each of at least five Contracting Parties. These representatives are assisted by experts and advisers. STACFAD advises the General Council on:

- a. matters relating to the Secretariat
- b. the budget of the Organization
- c. the time and place of meetings of the Organization; and
- d. publications of the Organization.

2. The Scientific Council

The Scientific Council provides a forum for consultation and cooperation among the Contracting Parties with respect to the study, appraisal and exchange of scientific information and views relating to the fisheries of the Convention Area, including environmental and ecological factors affecting these fisheries, and encourages and promotes cooperation among the Contracting Parties in scientific research designed to fill gaps in knowledge pertaining to these matters. The Scientific Council compiles and maintains statistics and records and publishes or disseminates reports, information and materials pertaining to the fisheries of the Convention Area, including environmental and ecological factors affecting these fisheries. The functions of the Scientific Council may, where appropriate, be carried out in cooperation with other public or private organizations having related objectives.



Advice to Coastal States:

Upon request by a coastal State, the Scientific Council considers and reports on any question pertaining to the scientific basis for the management and conservation of fishery resources in waters under the fisheries jurisdiction of that coastal State within the Convention Area.

Advice to Fisheries Commission:

The Scientific Council considers and reports on any question referred to it by the Fisheries Commission pertaining to the scientific basis for the management and conservation of fishery resources within the Regulatory Area and takes into account the terms of reference specified by the Fisheries Commission in respect of that question.

Scientific Information:

The Contracting Parties furnish to the Scientific Council any available statistical and scientific information requested by the Council. Each Contracting Party shall be a member of the Council and shall appoint its own representatives.

Membership:

Each Contracting Party is a member of the Scientific Council.

The Scientific Council has established four Standing Committees: STACFIS- fisheries science, STACPUB- publications, STACFEN- fisheries environment and STACREC- research coordination. Each of these Committees consists of scientists, one from each Contracting Party, who are assisted by experts and advisers. Chair and Vice-Chair of the Scientific Council and the Chairs of the Standing Committees form the "Executive Committee" that keeps planning and execution of the Scientific Council's program under general review. The Executive Committee ensures that the Scientific Council's organization effectively and efficiently meets the needs of the scientific program and facilitates coordination with other organizations, and provides advice to the Chairman of the Scientific Council on:

- the timetable for the work of the Committees and Working Groups; and
- input by the Scientific Council to the work of the General Council.

a) STACFIS- Standing Committee on Fisheries Science

The responsibilities of STACFIS are to:

- i. assess the status of fish stocks upon the request of the Scientific Council;
- ii. assess the effects on fish stocks of fishing strategies and management upon request of the Scientific Council; and
- iii. evaluate new methods for fish stock assessment.

b) STACREC- Standing Committee on Research Coordination

STACREC activities include:

develop and recommend to the Scientific Council policies and procedures for the collection, compilation, and dissemination of statistical and sampling information on the living resources and fisheries in the Convention Area;

coordinate the compilation and maintenance of statistics and records and their dissemination, including liaison with Coastal States in the Convention Area;

coordinate the planning and execution of international cooperative research in cooperation with Coastal States in the Convention Area;

encourage and promote cooperation among the Contracting Parties in scientific research designed to fill gaps in knowledge pertaining to fisheries matters identified by the Scientific Council; and



review and evaluate data and information and advise the Scientific Council on advances in knowledge of biology relevant to the Convention Area.

c) STACPUB- Standing Committee on Publications

STACPUB responsibilities include:

develop, coordinate and keep under review the publication and editorial policy and procedures of the Scientific Council and make recommendations thereto on these matters.

d) STACFEN- Standing Committee on Fisheries Environment

The tasks of STACFEN are to:

develop and recommend to the Scientific Council policies and procedures for the collection, compilation and dissemination of environmental information from oceanographic investigations;

provide reviews of environmental conditions and advise the Scientific Council on the effects of the environment on fish stocks and fisheries in the Convention Area; and

encourage and promote cooperation among Contracting Parties in scientific research designed to fill the gaps in knowledge pertaining to the effects of the environment on fish stocks and fisheries as identified by the Scientific Council.

3. The Fisheries Commission

The Fisheries Commission adopts proposals for joint action by the Contracting Parties designed to achieve optimum utilization of the fishery resources of the Regulatory Area. In considering such proposals, the Commission takes into account any relevant information or advice provided to it by the Scientific Council. The Commission seeks to ensure consistency between:

- a. any proposal that applies to a stock or group of stocks occurring both within the Regulatory Area and within an area under the fisheries jurisdiction of a coastal State, or any proposal that would have an effect through species interrelationships on a stock or group of stocks occurring in whole or in part within an area under the fisheries jurisdiction of a coastal State; and
- b. any measures or decision taken by the coastal State for the management and conservation of that stock or group of stocks with respect to fishing activities conducted within the area under its fisheries jurisdiction.

Allocation of Catches:

Proposals adopted by the Commission for the allocation of catches in the Regulatory Area take into account the interests of Commission members whose vessels have traditionally fished within that Area, and, in the allocation of catches from the Grand Bank and Flemish Cap, Commission members give special consideration to the Contracting Party whose coastal communities are primarily dependent on fishing for stocks related to these fishing banks and which has undertaken extensive efforts to ensure the conservation of such stocks through international action, in particular, by providing surveillance and inspection of international fisheries on these banks under an international scheme of joint enforcement.

Proposals on International Measures:

The Commission also adopts proposals for international measures of control and enforcement within the Regulatory Area for the purpose of ensuring within the Area the application of this Convention and the measures in force there under. Proposals adopted by the Commission are transmitted by the Executive Secretary to all Contracting Parties and each proposal adopted by the Commission becomes a measure binding on all Contracting Parties (unless a Commission Member presents an objection).

Membership:

The membership of the Commission is reviewed and determined by the General Council at its Annual Meeting and consists of:

- a. each Contracting Party which participates in the fisheries of the Regulatory Area; and



- b. each Contracting Party which has provided evidence satisfactory to the General Council that it expects to participate in the fisheries of the Regulatory Area during the year of that Annual Meeting or during the following calendar year.

The Fisheries Commission has set up one Standing Committee: STACTIC- Standing Committee on International Control. STACTIC consists of one representative from each Commission member who is assisted by experts and advisers.

a) STACTIC- Standing Committee on International Control.

Activities of STACTIC involve:

- a. review and evaluate the effectiveness of the Conservation and Enforcement Measures (CEM) established by the Fisheries Commission;
- b. review and evaluate the compliance by Contracting Parties with the Conservation and Enforcement Measures established by the Fisheries Commission;
- c. review and evaluate reports on the inspection and surveillance activities carried out by the Contracting Parties;
- d. review and evaluate reports on infringements, including serious infringements, and the follow-up thereto by the Contracting Party;
- e. produce an annual report on compliance by all Contracting Parties for the preceding calendar year. The report shall be based on a comprehensive provisional compilation by the Executive Secretary of relevant reports submitted by Contracting Parties and any other information available to the Executive Secretary. This compilation shall be dispatched to all Contracting Parties together with the draft provisional agenda pursuant to Rule 4.1;
- f. promote the co-ordination of inspection and surveillance activities carried out by the Contracting Parties;
- g. develop inspection methodologies;
- h. consider the practical problems of international measures of control;
- i. consider such other technical matters as may be referred to it by the Fisheries Commission;
- j. obtain and compile all available information on the fishing activities of non-Contracting Parties in the Regulatory Area, including details on the type, flag and name of vessels and reported or estimated catches by species and area;
- k. obtain and compile all available information on landings, and transshipments of fish caught in the Regulatory Area by non-Contracting Parties, including details on the name and flag of the vessels; the quantities by species landed, transshipped; and the countries and ports through which the product was shipped;
- l. examine and assess all options open to NAFO Contracting Parties including measures to control imports of fish caught by non-Contracting Party vessels in the Regulatory Area and to prevent the reflagging of fishing vessels to fish under the flags of non-Contracting Parties; and
- m. make appropriate recommendations to the Fisheries Commission.

4. The Secretariat

The Secretariat provides administrative services to the Organization. Its chief administrative officer is the Executive Secretary who is appointed by the General Council. The duties of the Secretariat comprise:

- make all arrangements necessary for the General Council, Scientific Council, and Fisheries Commission meetings;
- prepare and transmit draft provisional and provisional agendas;
- address communications to the Depositary Government;
- receive the credentials of the representatives and of observers at annual and special meetings and report thereon to the General Council as required; and



- perform such other functions as may be assigned by the General Council, its' Chair, or the Chair of a Committee



APPENDIX VI- Summary of Applicable International Legal Regime

Global Treaties and International Instruments Concerning Fisheries

NAFO is an intergovernmental organization established in 1979, as a successor to the International Commission of the Northwest Atlantic Fisheries, to ensure rational conservation, management and optimum sustainable utilization of the high seas fisheries within the Convention Area. The NAFO Performance Review Guidelines of September 2010 ([GC Doc. 10/4](#) (NAFO, 2010b)) mandates the Performance Review Panel to “assess the performance of NAFO since 1979 against the objectives set out in the NAFO Convention and other relevant international instruments addressing the conservation and management of marine living resources, with special emphasis on the period since 1995”. The relevant international instruments would include the 1982 United Nations Convention on the Law of the Sea (UNCLOS), the 1995 UN Fish Stocks Agreement (UNFSA), the 1993 FAO Compliance Agreement (Compliance Agreement), the 2009 FAO Agreement on Port State Measures to Combat IUU Fishing, the FAO Code of Conduct for Responsible Fisheries, and associated International Plans of Action, among others. The Performance Review Guidelines also identifies some of the specific principles and standards in specific international fisheries instruments as the benchmark against which NAFO’s performance should be evaluated.

This appendix starts by providing an overview of relevant features of the principal international treaties concerning fisheries, namely UNCLOS, UNFSA, Compliance Agreement, and the Port State Measures Agreement, each of which imposes important rights and obligations on the Contracting Parties and on NAFO as a Regional Fisheries Management Organization (RFMO). It also provides a synopsis of other treaties and non-binding international instruments that address protection, conservation and management of marine living resources, ecosystems and biodiversity, and are relevant to the work of NAFO.

UN Convention on the Law of the Sea, 1982 (UNCLOS)

Current fisheries governance is based primarily on the rights and duties of States laid down in [UNCLOS](#) (UN, 1982), which entered into force in 1994. UNCLOS provides the basic framework for the conservation, management and sustainable utilization of marine fishery resources in the exclusive economic zone (EEZ) and on the high seas.

The coastal State is given ‘sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living’ within the EEZ (Article 56(1)). But these rights are not absolute. They are subjected to a number of important duties, concerning, *inter alia*, conservation and optimum utilization of the living marine resources. Firstly, the coastal State must give ‘due regard’ to the rights and duties of other states (Article 56(2)). Secondly, it must take into account the best scientific evidence available in developing conservation and management measures (Article 61(2)). Thirdly, such measures must ensure that the ‘maintenance of the living resources ... is not endangered by over-exploitation’, and furthermore, that ‘stocks are maintained at or restored to levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors, ... and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether sub-regional, regional or global’ (Article 61(3)). Fourthly, the coastal state must ‘take into consideration the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened’ (Article 61(4)). It is clear from the foregoing, that for the most part, these conservation duties operate at a high level of generality.

The coastal State has a duty to promote the objective of optimum utilization of the living marine resources without prejudice to the conservation duties set out in Article 61 (article 62(1)). It is required to determine its capacity to harvest the living resources within the EEZ, and where it does not have the capacity to harvest the entire allowable catch, it should give other States access to the surplus, through agreements or other arrangements (Article 62(2)).



Governance of shared, straddling and highly migratory fish stocks are addressed in Articles 63 and 64. They impose a duty on States to cooperate either directly, or through sub-regional or regional organizations, in order to achieve the conservation and development of these stocks. Article 63(1) is concerned with shared stocks, that is, stocks occurring within the EEZ of two or more coastal States. These States are to seek to agree upon measures necessary to coordinate and ensure the conservation and development of such stocks. Article 63(2) addresses straddling stocks, that is, stocks occurring both within the EEZ and in an area beyond and adjacent to the EEZ. It calls upon the coastal State and ‘the States fishing for such stocks in adjacent area to seek to agree upon the measures necessary for the conservation of these stocks in the adjacent area.’ Although coastal States and other fishing States are called upon to cooperate in good faith, there is no obligation on such States to reach an agreement (Churchill and Lowe, 1999). Article 64 deals with highly migratory species using slightly stronger language than Article 63. Here the coastal State and other fishing States are required to cooperate, through appropriate international organizations, with the objective of ensuring the conservation and optimum utilization of these stocks both within and beyond the EEZ.

On the high seas no State has sovereignty over the marine living resources, but all States have the freedom to fish (Article 87), subject to various duties and with due regard for the interests of other States. In Article 116 the right to fish is stated to be subject to the State’s other treaty obligations, the rights and duties as well as the interests of coastal States as provided for, *inter alia*, in Article 63, paragraph 2, Articles 64–67, and Articles 117–120. Articles 117 and 119 provide that States are to cooperate in taking measures necessary for the conservation and management of the living resources of the high seas, whether through direct cooperation or through regional fisheries organizations such as RFMOs. The conservation obligations are broadly similar to those mentioned above concerning the EEZ and straddling and highly migratory species.

Fishing States are required to adopt conservation measures for fishery resources in respect of vessels flying their flag on the basis of the best scientific evidence available to them and to co-operate with each other in the conservation and management of such resources (Article 117). In particular, States whose nationals exploit identical living resources, or different living resources in the same area, are required to enter into negotiations with a view to taking the measures which are necessary for the conservation of the living resources concerned. To this end they are required to co-operate, as appropriate and to establish sub-regional or regional fisheries organizations (Article 118). In areas within and beyond national jurisdiction, the conservation measures adopted must be aimed at maintaining or restoring populations of harvested species at levels which can produce the maximum sustainable yield, while taking into consideration the relevant environmental and economic factors. States are also required to take into consideration the effects on associated or dependent species (Article 119). Article 119(3) establishes a duty to ensure that conservation measures and their implementation do not discriminate in form or in fact against the fishermen of any State.

The coastal State is given significant enforcement powers in the EEZ including power to board, inspect, arrest and institute judicial proceedings to ensure compliance with its fisheries laws and regulations. Two important restraints are imposed on the power of the coastal State. Firstly, Article 73(2) provides that ‘arrested vessels and their crews shall be promptly released upon the posting of reasonable bond or other security’. Secondly, Article 73(3) states that ‘coastal State penalties for violations of fisheries laws and regulations in the exclusive economic zone may not include imprisonment, in the absence of agreements to the contrary by the States concerned, or any other form of corporal punishment’.

Because the high seas falls outside the area of jurisdiction of any State, the effectiveness of conservation or management measures adopted for fisheries there is dependent on the willingness and capacity of the flag State to regulate the activities of their vessels. This is so because a fishing vessel, except in special cases expressly provided for in international treaties, is subject to the exclusive jurisdiction of its flag State (Article 92(1)). Thus boarding, inspection or arrest of a vessel by a third State for non-compliance with conservation or management measures is prohibited without the consent of the flag State. Such consent may, however, be expressed in the constitution of a competent RFMO to which the flag State is party. Article 94 lays down the general duty of the flag State to effectively exercise jurisdiction and control in administrative, technical and social matter over ships flying its flag. More specifically, the flag State must



maintain a register of its fishing vessels, and assume jurisdiction over such vessels and their masters, officers and crew.

Part XIII of UNCLOS deals with marine scientific research. Within the EEZ the coastal State has sovereign rights to explore, exploit, conserve and manage the living marine resources, and has the power to withhold consent to scientific research by third countries in the EEZ (Article 246).

UNCLOS also addresses the issue of protection and preservation of the marine environment. Article 192 establishes the general duty of all States to adopt measures to protect and preserve the marine environment. The measures must include whatever is seen as necessary to protect and preserve rare or fragile ecosystems, as well as the habitat of depleted, threatened or endangered species and other forms of marine life (Article 194 (5)). States are required to take all measures that are necessary to prevent, reduce and control pollution of the marine environment from any source (Article 194(1)). States must also take all measures necessary to ensure that activities are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights (Article 194(2)).

UNCLOS reiterates the general obligation on States to settle disputes by peaceful means in accordance with Article 2, paragraph 3, of the Charter of the United Nations (Article 279). Part XV of UNCLOS requires disputes concerning the interpretation or application of the Convention fisheries provisions, with the exception of domestic fisheries, to be settled in accordance with the compulsory procedures leading to binding decisions when no settlement has been reached by recourse to other alternative mechanisms of dispute resolution such as negotiation or conciliation (Article 297(3)). The exception provided for in Article 297(3)(a) relates to any dispute relating to the coastal State's sovereign rights with respect to the living resources in the exclusive economic zone or their exercise. This effectively excludes domestic fisheries from the compulsory provisions but would not preclude a coastal State from relying on these procedures against, for example, a flag State whose vessel was fishing in its EEZ in breach of the fisheries provisions of UNCLOS.

The following NAFO Contracting Parties are parties to UNCLOS: Canada, Cuba, Denmark, European Union, France, Iceland, Japan, Republic of Korea, Norway, Russian Federation, and Ukraine. The United States of America is the only NAFO Contracting party that is not a party to UNCLOS.

The UN Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 1995 (UNFSA)

The [UNFSA](#) (UN, 1995) is undoubtedly one of the most important and influential legally binding international instruments for the conservation and management of fishery resources adopted since UNCLOS. It is particularly relevant for present purposes in that it sets out the basic functions and characteristics of an RFMO in legally binding language. According to Article 2, the objective of the Agreement is 'to ensure the long term conservation and sustainable use of the straddling fish stocks and highly migratory fish stocks through effective implementation of the relevant provisions of the Convention.' The Agreement in reality supplements and strengthens Articles 63(2) and 64 of UNCLOS, by establishing a comprehensive regime with detailed principles, and specific rules and standards aimed at achieving effective and compatible conservation and management measures, and optimum sustainable use of fisheries on the high seas and within areas under national jurisdiction.

The basic principles and standards concerning conservation and management of the stocks within the purview of the Agreement are set out in Article 5, 6 and 7. These are clearly inspired and informed by the outcome of the UN Conference on Environment and Development held in Rio de Janeiro in 1992, in particular the call for new approaches to fisheries conservation. The principles include, *inter alia*,: ensuring long-term sustainability; promoting optimum utilization of stocks; using the best available scientific evidence in decision-making; applying the precautionary approach and the ecosystem approach; minimizing pollution, waste, discards, catch by lost or abandoned gear, catch of non-target species (both fish and non-fish species), and impacts on associated or dependent species, in particular endangered species; and protecting biodiversity in the marine environment.



The precautionary approach is developed in Article 6 and Annex II. States have a duty to be more cautious when information is uncertain, unreliable or inadequate; and the absence of scientific information must not be used as a reason for failing to take conservation and management measures (Article 6(2)). Article 7 sets out criteria to ensure compatibility between measures adopted on the high seas and those adopted within the EEZ in respect of straddling fish stocks and highly migratory fish stocks. Article 7(2) establishes a duty of States to cooperate to ensure that the measures established for the high seas and those adopted for areas under national jurisdiction are compatible in order to ensure conservation and management of straddling fish and highly migratory fish stocks in their entirety. In addition to Article 7, the precautionary approach and the general principles set out in Article 5 are also given application in areas under national jurisdiction as well as on the high seas by virtue of Article 3.

The UNFSA sets out detailed provisions for international cooperation concerning straddling and highly migratory stocks, and identifies RFMOs or arrangements as the mechanism through which States can discharge their obligations to manage and conserve such stocks (Article 8(1)). States having a real interest in the fisheries concerned must not be precluded from becoming members or participating in such RFMOs. Where a competent RFMO has been established, a State wishing to fish on the high Seas for stocks under the purview of the organization must either be a member of the RFMO or agree to comply with the conservation and management measures adopted by the RFMO (Article 8(3)).

Part V of the UNFSA deals with the duties of the flag State. Article 18 imposes on the flag State whose vessels fish on the high seas the duty to 'take such measures as may be necessary to ensure that vessels flying its flag comply with sub-regional and regional conservation and management measures and that such vessels do not engage in any activity which undermines the effectiveness of such measures'. A State may 'authorize the use of vessels flying its flag for fishing on the high seas only where it is able to exercise effectively its responsibilities in respect of such vessels under' UNCLOS and the UNFSA.

This is followed by a number of specific measures that the flag State is required to take, including: (a) control of vessels by means of fishing licenses, authorizations or permits; (b) establishment of regulations regarding licenses and prohibition of unauthorized fishing within areas under the national jurisdiction of other States; (c) establishment of a national record of fishing vessels authorized to fish on the high seas; (d) requirements for marking of fishing vessels and fishing gear; (e) requirements for recording and timely reporting of vessel position, catch, fishing effort and other data; (f) requirements for verifying the catch; (g) monitoring, control and surveillance of vessels and their operations by inspection schemes, observer programs and vessel monitoring systems; (h) regulation of transshipment on the high seas; and (i) regulation of fishing activities to ensure compliance with regional or global measures.

Part VI deals with compliance and enforcement mechanisms. Where non-compliance is suspected the flag State must fully investigate the matter immediately and institute legal proceedings if there is sufficient evidence of an alleged violation (Article 19). Where violations are proved, States must impose sanctions that are adequate in severity to be effective in securing compliance and to discourage violations (Article 19(2)). Articles 20 and 21 contain very elaborate provisions concerning international, regional and sub-regional cooperation in enforcement, which include the boarding in certain circumstance of vessels on the high seas of States Parties to the Agreement. According to Article 23, a port State has the right and duty to take measures in accordance with international law to promote the effectiveness of regional and global conservation and management measures.

The dispute settlement mechanism is another important and innovative feature of the UNFSA. Article 30 (1) applies the compulsory system of dispute settlement in Part XV of the UNCLOS to dispute between States Parties to UNFSA, whether or not they are parties to UNCLOS. Article 30(2) further applies these procedures to disputes concerning the interpretation or application of a regional or global agreement relating to straddling or highly migratory stocks, which could, therefore, include the constitution of a RFMO, providing the parties to the dispute are also parties to the UNFSA and the RFMO, regardless of whether they are parties to UNCLOS.

UNFSA takes into account the special requirements of developing countries in the development, conservation and management of straddling and highly migratory fish stocks. Part VII provides for the obligations of States and international organizations to take into account the special requirements of



developing States. It sets out the objectives of enhanced cooperation, as well as the ways in which specific forms of assistance might best be given to developing countries.

Transparency in decision-making is also addressed by the UNFSA. Article 12 establishes a requirement for RFMOs to be transparent in their decision-making and other activities, and in this regard, NGOs should be allowed to participate in their meetings as observers or otherwise.

The following NAFO Contracting Parties are parties to the UNFSA: Canada, Denmark, European Union, France, Iceland, Japan, Republic of Korea, Norway, Russian Federation, Ukraine, United States of America. Cuba is the only NAFO Contracting Party that is not a party to the UNFSA.

FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, 1993 (Compliance Agreement).

The [Compliance Agreement](#) (FAO, 1993) was finalized in 1993, entered into force in 2003, and applies to all fishing vessels that are used for fishing on the high seas (Article II). It focuses on the responsibilities of States in securing compliance with international conservation and management measures for high seas fisheries through authorization of vessels to fish, strengthening flag State responsibility, and promoting the free flow of information about high seas fishing.

The Compliance Agreement sets out specific obligations of flag States to ensure that fishing vessels flying their flags comply with international conservation and management measures. These duties are essentially the same as those found in the UNFSA although they are not as detailed. A flag State must not allow its vessels to fish on the high seas unless it has authorized them to do so (Article III(2)). Authorization must be granted only if the flag State can effectively exercise its responsibilities over such a vessel (Article III(3)). There are restrictions on the re-flagging of fishing vessels particularly those that have previously undermined international conservation and management measures (Article III(5)). States may, however, exempt vessels less than 24m in length from some of the obligations in the Compliance Agreement (Article II). The flag State is also required to ensure that its vessels are marked in accordance with generally accepted standards, and to provide it with necessary information on its operations.

Flag States must ensure that vessels flying their flags comply with the provisions of the Agreement and apply sanctions if there are breaches. The sanctions must be strong enough to secure compliance and deprive offenders of the benefits of their illegal activities. In cases of serious breach the sanction must include suspension or withdrawal of the authorization to fish (Article III(8)).

The Compliance Agreement also requires Flag States to maintain a record of fishing vessels authorized by them to fish on the high seas (Article IV). States are required to co-operate in the exchange of information on activities of fishing vessels reported to have engaged in activities undermining international conservation and management measures in order to assist the Flag States in fulfilling its responsibilities (Article V). In order to promote the free flow of information, States are obliged to provide FAO with information about its vessels authorized to fish on the high seas, as well as information on action taken against vessels for non-compliance with conservation and management measure on the high seas (Article VI). FAO is in turn required to circulate the information to other parties to the Compliance Agreement and to international fisheries organizations.

The following NAFO Contracting Parties are parties to the Compliance Agreement: Canada, European Union, Japan, Republic of Korea, Norway and the United States of America.

FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated (IUU) Fishing, 2009 (Port State Agreement)

This new international fisheries treaty on [Port State Measures](#) (FAO, 2009b) is currently open for signature, and will enter into force thirty days after the date of deposit of the twenty-fifth instrument of ratification, acceptance, approval or accession. Canada, the EU, Iceland, Norway, Russian Federation, and United States of America have already signed this treaty. The objective of the Port State Agreement as set out in Article 2 is to 'prevent, deter, and eliminate IUU fishing through the implementation of effective port State measures, and thereby to ensure the long term conservation and sustainable use of the living marine



resources and marine ecosystems.’ The treaty builds on the 2005 FAO Model Scheme on Port State Measures to Combat IUU Fishing and the practice of RFMOs, to establish minimum standards and procedures for port States, individually and through RFMOs, to exercise greater control over fishing vessels entering and using their ports.

The Port State Agreement addresses, *inter alia*: integration and coordination at the national level (Article 5); cooperation and exchange of information (Article 6), designation of ports (Article 7) advanced request for port entry (Article 8), port entry, authorization or denial (Article 9), force majeure or distress (Article 10), use of ports (Article 11), levels and priorities for inspection (Article 12), conduct of inspections (Article 13), result of inspections (Article 14), transmittal of inspection results (Article 15), electronic exchange of information (Article 16), training of inspectors (Article 17), port States actions following inspection (Article 18), information on recourse to the flag State (Article 19), role of flag States (Article 20), requirements of developing States (Article 21), and peaceful settlement of disputes (Article 22). The Agreement does not permit reservations or exceptions to be made (Article 30), but allows declarations and statements in limited circumstances. There is also the possibility of provisional application of the Agreement (Article 32).

The Port States Agreement contains five annexes dealing with: information to be provided in advance by vessels requesting port entry (annex A), port inspection procedures (annex B), report of the results of the inspection (annex C), information systems on port State measures (annex D), and guidelines for the training of inspectors (Annex E).

At the heart of the Port States Agreement is a scheme that requires vessels to request permission ahead of time to use designated ports, and provide advance notification and data on their activities, including the catch on board, to the port State (Article 8). Based on the notification and information received the port State will determine whether the vessel requesting entry into its port has engaged in IUU fishing, and decide whether to authorize or to deny entry into its port (Article 9(1)). A port State shall deny entry to its port if it has sufficient evidence that a vessel has engaged in IUU fishing, and in particular if the vessel is on an IUU vessel list established by an RFMO (Article 9(4)).

Article 11 provides that where a vessel has entered a port it shall not be permitted to use that port if any of the following conditions exist:

- the vessel does not have an authorization required by the flag State or a coastal State;
- there is clear evidence that the fish on board was taken in contravention of the requirements of the coastal State;
- the flag State, on request, fails to confirm that the fish onboard was taken in accordance with requirements of an RFMO; or
- the port State has reasonable grounds to believe that IUU fishing had taken place, unless the vessel can establish otherwise.

Part 4 sets out the obligations on States to submit to routine inspections to achieve the objectives of the treaty. Detailed rules and standards are established for use during the inspection process. Port States must publish reports when a vessel is denied access, and the national authorities of the country whose flag the vessel is flying must take retaliatory measures. The treaty also calls for the creation of information-sharing networks that allow countries access to data on vessels involved in IUU fishing.

Part 6 of the Port State Agreement addresses the special requirements of developing States, and calls upon States to provide assistance so that developing nations can comply with their treaty obligations.

Convention on Biological Diversity, 1992 (CBD)

The [CBD](#) (CBD, 1992) is an environmental treaty of growing importance to fisheries conservation and management. This is due to the growing emphasis being given to ecosystems based approaches and protection of habitat and biodiversity in the marine environment. The main objectives of the CBD are stated in Article 1 as ‘the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.’ Article 5 establishes a general obligation for States to co-operate for the conservation and sustainable use of



biodiversity in areas beyond national jurisdiction. States Parties to the CBD are mandated to develop national strategies, plans, or programs for the conservation and sustainable use of biodiversity, and integrate the conservation and sustainable use of biodiversity into relevant sectoral or cross-sectoral plans, programmes and policies (Article 6). States are also required to identify and monitor the status of components of biological diversity and develop and manage protected areas and other areas of importance for biodiversity (Article 7). Article 8 sets out measures for in situ conservation, including the establishment of protected areas where necessary.

The CDB addresses a range of issues, including: sustainable use, incentives, research and training, public education and awareness, impact assessment and mitigation, access to genetic resources, technology transfer, information exchange, technical and scientific co-operation, and biotechnology. It also establishes a funding mechanism, the Global Environment Facility (GEF).

The [1995 Jakarta Mandate on Marine and Coastal Biodiversity](#) (CBD, 1995) encourages the implementation of the provisions of the CBD as they relate to the marine environment, by *inter alia*, elaborating an ecosystem approach using integrated marine and coastal areas management as the best means for dealing with human impacts on marine and coastal biodiversity; and establishing and strengthening national and regional systems of marine and coastal protected areas for promoting the conservation and sustainable use of marine biodiversity.

There are widely held concerns regarding the limitations within the CBD. The problem is that the extent of the contracting parties' obligations is uncertain in many cases, owing to the vague and imprecise language used to qualify these obligations. These broad qualifications diminish and create difficulties in determining the limits of the parties' obligations and bring the commitments closer to being unenforceable soft law.

The following NAFO Contracting parties are parties to the CDB: Canada, Cuba, Denmark, European Union, France, Iceland, Japan, Republic of Korea, Norway, Russian Federation, and Ukraine.

Convention on International Trade in Endangered Species, 1973 (CITES)

[CITES](#) (CITES, 1973) is a multilateral environmental treaty designed to regulate trade in species of conservation concern that may be threatened or endangered by international trade. This treaty is of increasing relevance to internationally traded commercially exploited marine species that have shown steady decline in population abundance and are or may be threatened with extinction. CITES establishes a permit system comprised of three appendices on which species of concern may be listed depending on the assessed state of their populations (Article III to V). The extent to which a listed species is regulated depends upon the Appendix in which it is placed. Trade in species listed in Appendix III is permitted providing there is a valid certificate of origin. Trade in species listed in Appendix II is also permitted providing the State of origin can certify that the trade is not detrimental to the survival of the species, and can therefore issue an export permit for the shipment. Commercial trade in species listed in Appendix I, that is, species that are threatened with extinction and are or may be affected by trade, is generally prohibited. The following NAFO Contracting Parties are parties to CITES: Canada, Cuba, Denmark, France, Iceland, Japan, Republic of Korea, Norway, Russian Federation, Ukraine, and United States of America.

Non-Binding International Instruments

The current international framework for fisheries governance includes a number of important non-binding instruments such as: the FAO Code of Conduct for Responsible Fisheries along with four associated International Plans of Action (IPOA) and a number of Technical Guidelines adopted by FAO for the Implementation of the Code; the United Nations General Assembly Resolutions on Fisheries; and the International Plan of Action adopted by the 2002 World Summit on Sustainable Development (JPOI).

FAO Code of Conduct for Responsible Fisheries, 1995 (Code of Conduct)

The [Code of Conduct](#) (FAO, 1995), adopted by the FAO in 1995, is a comprehensive non-binding instrument, which sets out principles and international standards for responsible practices with a view to ensuring the effective conservation, management and development of living aquatic resources, with due respect to the ecosystem and biodiversity. Although the Code of Conduct is not legally binding, some parts



of it are based on the norms established in legally binding treaties such as UNCLOS, UNFSA, and the Compliance Agreement. Furthermore, it is to be interpreted and applied in accordance with these treaties and other relevant rules of international law. Thus, the Code of Conduct has been used to support the argument that the conservation principles set out in the UNFSA should be applied more generally than just to the conservation and management of straddling and highly migratory fish stocks.

The Code of Conduct contains general principles and detailed provisions elaborating on the application of those principles. In respect of fisheries conservation and management, the basic principle is ensuring long-term sustainable use through, *inter alia*: application of the precautionary and ecosystem-based approaches; use of the best available scientific information in decision-making; management of fishing capacity; effective monitoring and control of fishing vessels; and imposition of adequate sanctions for breach of the measures adopted. States are also required to promote awareness of responsible fisheries and strengthen or establish legal and administrative capability to give effect to these principles at the domestic level.

FAO International Plans of Action (IPOAs)

There are currently four legally non-binding International Plans of Action that have been adopted by FAO within the framework of the Code of Conduct:

- the [IPOA for Reducing the Incidental Catch of Seabirds in Longline Fisheries](#) (IPOA-Seabirds) (FAO, 1999);
- the [IPOA on the Management of Fishing Capacity](#) (IPOA-Fishing Capacity) (FAO, 1999);
- the [IPOA for the Conservation and Management of Sharks](#) (IPOA-Sharks) (FAO, 1999); and
- the [IPOA to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing](#) (IPOA-IUU Fishing) (FAO, 2001).

The first three were adopted by the 23rd Session of the FAO Committee on Fisheries (COFI) in February 1999, and endorsed by the FAO Council in November 2000, and the fourth was endorsed by the FAO Council in June 2001.

IPOA-Seabirds

The primary objective of the IPOA-Seabirds is to reduce catches of seabirds in longline fisheries. It sets out actions that implementing states should undertake to achieve this objective. States should, individually or through RFMOs, conduct assessments of longline fisheries to determine if a problem exists with respect to reducing the incidental catch of seabirds. If there is a problem, States should adopt international plans of action for reducing such catch. The plan should include the adoption of mitigation measures, plans for research and development in respect of mitigation measures, awareness campaigns among fishermen and others, and data collection programmes. The IPOA-Seabirds also contains an annex which summarises possible mitigation measures that States might consider for adoption in their national plans of action.

IPOA-Fishing Capacity

Excessive fishing capacity is a serious global problem that, *inter alia*, contributes substantially to IUU fishing and overfishing, the degradation of marine fisheries resources, and significant economic waste. The immediate objective of the IPOA-Fishing Capacity is for "States and regional fishery organizations, in the framework of their respective competencies and consistent with international law, to achieve worldwide, preferably by 2003 but no later than 2005, an efficient, equitable and transparent management of fishing capacity". The IPOA applies to States whose fishers engage in capture fisheries. States are exhorted to take immediate actions such as: identifying fleets requiring urgent measures, assessing and monitoring capacity, and adopting and implementing national plans for the management of fishing capacity. In respect for high seas fisheries, States should cooperate individually or through RFMOs to ensure the effective management of fishing capacity. For high seas fisheries that are significantly over-fished, States are urged to take immediate action to address any problem with over-capacity (Para. 27 and 29).

IPOA-Sharks

The objective of the IPOA-Sharks is to ensure the conservation, management and long-term sustainable use of sharks. The IPOA applies to all States whose fishers engage in shark fisheries, whether directly or



where sharks are regularly taken as by-catch. States are exhorted to assess whether a problem exists with respect to sharks, and adopt national plans of action for the conservation and management of sharks, as well as procedures for national review and reporting requirements. The national plans should, *inter alia*, assess the state of the shark populations on the basis of consistent data collection; ensure that catches are sustainable; identify and protect critical habitats; and minimize waste and discards from sharks taken. This presumably is intended to address the common practice whereby shark fins are removed and retained, and the rest of the carcass is dumped at sea. The IPOA-Sharks also calls on States to cooperate individually or through RFMOs to achieve the stated objective.

IPOA-IUU

Illegal, unreported and unregulated fishing is another major problem which is undermining conservation and management, and threatening the long-term sustainability of fisheries globally. The stated objective of the IPOA-IUU Fishing is “to prevent, deter and eliminate IUU fishing by providing all States with comprehensive, effective, and transparent measures by which to act, including through appropriate regional fisheries management organizations established in accordance with international law.”

Although it is a non-binding instrument, it is nevertheless prepared using more normative language than the other IPOAs or the Code of Conduct itself. It sets out in detail the measures that States should take to combat IUU fishing. States should develop national IPOAs and cooperate with other States including through RFMOs to combat IUU fishing. All States should, *inter alia*, identify vessels that are engaged in IUU fishing; take all possible measures to prevent their nationals and flagged vessels from engaging in IUU fishing; impose sanctions for IUU fishing that are severe enough to deter the practice and deprive those found liable of the benefits of their wrongful action; develop comprehensive and effective monitoring, control and surveillance systems, including boarding and inspection schemes, vessel monitoring systems (VMS) and observer programmes; regulate trans-shipment operations; adopt port inspection schemes; and adopt certification or trade documentation schemes and other market-related measures. States should also submit a biennial report to FAO on their national plans to combat IUU fishing.

The IPOA-IUU has undoubtedly been the most effective of the four IPOA to date. It has provided the basis for the development and adoption of legally binding conservation and management measures and the establishment of registers listing vessels that have been engaged in IUU fishing by several RFMOs. It has also been instrumental in the development of port States regime for vessels fishing on the high seas, including the FAO Model Scheme on Port State Measures to Combat IUU Fishing, which was adopted by FAO in 2005.

UN General Assembly Resolutions

The [UN General Assembly has adopted several resolutions](#) (UN, 2011) concerning sustainable fisheries, which although not legally binding, are significant to the conservation and management of fisheries and the work of RFMOs. They are also of importance from a legal perspective in that they may inspire the development of binding treaty rules in RFMOs and other international organizations and contribute to the development of customary international law. These resolutions, which are adopted annually, have addressed a wide range of fisheries issues including *inter alia*, achieving sustainable fisheries; implementation of the UNFSA and other global fisheries instruments; IUU fishing; monitoring, control, surveillance, compliance and enforcement; large-scale pelagic drift-net fishing; fisheries by-catch and discards; sub-regional and regional cooperation; responsible fisheries in the marine ecosystem; and capacity-building.

Resolutions 59/25 of 2004 and 61/105 of 2006 on Deep Sea Fisheries

Resolution 59/25 was adopted in November 2004 and called on States individually or through RFMOs to take urgent action to protect vulnerable marine ecosystems (VMEs) such as cold-water coral reefs and seamounts on the high seas. This was to be done, in the interim, by prohibiting the use of certain destructive fishing practices that were having a negative impact on VMEs. Resolution 61/105 of December 2006 repeated the call to protect VMEs by regulating bottom fishing. It called upon States to “take action immediately, individually and through regional fisheries management organizations and arrangements, and



consistent with the precautionary approach and ecosystem approaches, to sustainably manage fish stocks and protect vulnerable marine ecosystems, including seamounts, hydrothermal vents and cold water corals, from destructive fishing practices, recognizing the immense importance and value of deep sea ecosystems and the biodiversity they contain.” (para. 80).

If a flag State declines to implement the above measures for high seas areas where there is no competent RFMO or arrangement to regulate bottom fisheries, or where there are no interim measures adopted pending the establishment of a competent RFMO, such State should not authorize vessels flying its flag to conduct bottom fisheries in those areas (para 86). In addition, flag States are requested to make publicly available through the FAO a list of vessels flying their flag authorized to conduct bottom fisheries in areas beyond national jurisdiction and the measures they have adopted concerning the activities of such vessels (para. 87). Furthermore, States participating in negotiations to establish new RFMOs competent to regulate bottom fisheries are invited to complete their negotiations by 31 December 2007, and to adopt interim measures, which should be made publicly available (para 85).

More recent UN General Assembly Resolutions such as 64/72 of 4 December 2009, and 65/38 adopted on 7 December 2010, have urged States, either directly or through appropriate sub-regional, regional or global organizations or arrangements, to intensify efforts to assess and address, as appropriate, the impacts of global climate change on the sustainability of fish stocks and the habitats that support them.

Johannesburg Plan of Implementation

The [Plan of Implementation adopted at the World Summit on Sustainable Development](#) in Johannesburg in 2002 (JPOI) (WSSD, 2002) contains a number of recommendations to achieve sustainable fisheries. It encourages the application by 2010 of the ecosystem approach, noting the Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem, and decision V/6 of the Conference of Parties to the Convention on Biological Diversity (Paragraph 30(d)). To achieve sustainable fisheries, paragraph 31 also calls for action at all levels to:

- maintain or restore stocks to levels that can produce the maximum sustainable yield with the aim of achieving these goals for depleted stocks on an urgent basis and where possible not later than 2015;
- ratify or accede to and effectively implement the relevant United Nations and, where appropriate, associated regional fisheries agreements or arrangements, noting in particular the UNFSA and the Compliance Agreement;
- implement the FAO Code of Conduct for Responsible Fisheries;
- urgently develop and implement national and, where appropriate, regional plans of action, to put into effect the FAO IPOAs;
- encourage RFMOs and arrangements to give due consideration to the rights, duties and interests of coastal States and the special requirements of developing States when addressing the allocation of shares of fishery resources for straddling stocks and highly migratory fish stocks, mindful of the provisions of the United Nations Convention;
- eliminate subsidies that contribute to IUU fishing and to over-capacity while completing the efforts initiated at the World Trade Organization to clarify and improve its disciplines on fisheries subsidies, taking into account the importance of this sector to developing countries;
- strengthen donor co-ordination and partnerships between international financial institutions, bilateral agencies and other relevant stakeholders in order to enable developing countries, in particular the least developed countries and small island developing States and countries with economies in transition, in order to develop their national, regional and sub regional capacities for infrastructure and integrated management and the sustainable use of fisheries; and
- support the sustainable development of aquaculture, including small-scale aquaculture, given its growing importance for food security and economic development.

The JPOI further recommends the elimination of destructive fishing practices, and establishment of marine protected areas consistent with international law and based on scientific information (including



representative networks by 2012), with time/area closures for the protection of nursery grounds (Paragraph 32(c)).

Conclusion

UNCLOS establishes the basic legal framework for conservation and management of fisheries resources on the high seas and within areas under national jurisdiction. It has, however, been supplemented by a number of legally binding and non-binding global instruments that aim to address shortcomings in the Convention itself and strengthen the overall framework for more effective conservation, management and equitable allocation of fishing opportunities, particularly on the high seas. Whether or not the current framework will succeed depends, to a large extent, on the willingness of States, acting individually and through RFMOs or other arrangements as appropriate, to implement and apply relevant provisions within their jurisdiction.



Appendix VII- Summary of Objections in the Period 1979-95 by Year and Type

Year	Objection	Reference (see also FC Doc. 03/07 (NAFO 2003d))
1979	1980 Div. 3M and Div. 3NO Cod allocation	Letter 9 Aug 1979
1980	1981 Div. 3M Redfish allocation	GF-135 - 5 Dec 1980
1981	1981 Div. 3M Cod allocation	GF/1-206 - 1 June 1981
1983	1984 Div. 3M Cod; Div. 3M and Div. 3LN Redfish allocation	GF/3-329 - 8 Dec 1983
1984	1985 Div. 3LN Redfish allocation	GF/4-412 - 21 Nov 1984
	1985 Div. 3M and Div. 3NO Cod; Div. 3M and Div. 3LN Redfish allocation	GF/4-413 and 414-21 Nov 1984
1985	1986 Div. 3M and Div. 3LNO A. plaice; Div. 3M and Div. 3LN Redfish; Div. 3M and Div. 3NO Cod allocation	GF/5-319 - 30 Dec 1985
	Proposal for a moratorium on a directed fishery for Div. 3L cod outside 200 miles, during 1986	GF/5-316 - 24 Dec 1985
	1986 TACs with exception of the zero TAC for Capelin Div. 3NO	GF/5-317 - 24 Dec 1985
	1986 Div. 3M and Div. 3NO Cod; Div. 3M and Div. 3LN Redfish; Div. 3M and Div. 3LNO A plaice; Div. 3LNO Yel; Div. 3NO Witch allocation	GF/5-297 - 25 Nov 1985
	Proposal for a moratorium on a directed fishery for Div. 3L cod outside 200 miles, during 1986	GF/5-298 - 25 Nov 1985
1986	1987 Div. 3M and Div. 3NO Cod; Div. 3M and Div. 3LN Redfish; Div. 3M and Div. 3LNO A plaice; Div. 3LNO; Div. Yel; Div. 3NO Witch allocation; 3NO Capelin	GF/6-260 - 21 Nov 1986
	Proposal for a moratorium on a directed fishery for Div. 3L cod outside 200 miles, during 1987	GF/6-259 - 21 Nov 1986
	1987 TACs with exception of the TAC for Capelin Div. 3NO and Squid in SA 3+4	GF/6-264 - 27 Nov 1986
	Proposal for a moratorium on a directed fishery for Div. 3L cod outside 200 miles, during 1987	GF/6-265 - 27 Nov 1986
	Proposal for a moratorium on a directed fishery for Div. 3L cod outside 200 miles, during 1987	GF/6-273 - 16 Dec 1986
	1987 Div. 3M and Div. 3NO Cod; Div. 3M and Div. 3LN Redfish; Div. 3M and Div. 3LNO A plaice; Div. 3LNO Yel; Div. 3NO Witch allocation; Div. 3NO Capelin	GF/6-272 - 16 Dec 1986
1987	1988 Div. 3M and Div. 3NO Cod; Div. 3M and Div. 3LN Redfish; Div. 3M and Div. 3LNO A plaice; Div. 3LNO Yel; Div. 3NO Witch allocation	GF/7-241-25 Nov 1987 Obj 3M Cod withdrawn GF/7-252-31 Dec 87
	Proposal for a moratorium on a directed fishery for Div. 3L cod outside 200 miles, during 1988	GF/7-240 - 25 Nov 1987
1988	1989 Div. 3NO Cod; Div. 3M and Div. 3LN Redfish; Div. 3M and Div. 3LNO A plaice; Div. 3LNO Yel; Div. 3NO Witch allocation	GF/8-304 - 5 Dec 1988
	Proposal for a moratorium on a directed fishery for Div. 3L cod outside 200 miles, during 1989	
1989	1990 Div. 3NO Cod; Div. 3LN Redfish; Div. 3M and Div. 3LNO A plaice; Div. 3LNO Yel; Div. 3NO Witch allocation	GF/9-275 - 6 Dec 1989
	Proposal for a moratorium on a directed fishery for Div. 3L cod outside 200 miles, during 1990	GF/9-276 - 6 Dec 1989



1990	1991 Div. 3LN Redfish; Div. 3NO Witch allocation	GF/90-341 - 19 Nov 1990
	Proposal for a moratorium on a directed fishery for Div. 3L cod outside 200 miles, during 1991	GF/90-341 - 19 Nov 1990
1991	1992 Div. 3LN Redfish; Div. 3NO Witch allocation	GF/91-390 - 25 Nov 1991
	Closure during 1992 of the Div. 3L Cod Fishery in the Regulatory Area	GF/91/390 - 25 Nov 1991
1992	Quota Table 1993 re allocation of "block" quota to Latvia, Lithuania, Estonia and Russian Federation	GF/92-438 - 20 Nov 1992
1993	Quota Table 1994 re allocation of "block" quota to Latvia, Lithuania, Estonia and Russian Federation	GF/93-424 - 10 Nov 1993
	Quota Table 1994 re allocation of "block" quota to Latvia, Lithuania, Estonia and Russian Federation	GF/93-409 - 4 Nov 1993
1994	Quota Table 1995 re allocation of "block" quota to Latvia, Lithuania, Estonia and Russian Federation	GF/94-548 - 25 Oct 1994
	Quota Table 1995 re allocation of "block" quota to Latvia, Lithuania, Estonia and Russian Federation	GF/94-591 - 21 Nov 1994
1995	Management of Div. 3M shrimp fishery (1996)	GF/95-619 - 28 Nov 1995
	Management of Div. 3M shrimp fishery (1996)	GF/95-612 - 22 Nov 1995
	Quota Table 1996 re allocation of "block" quota to Latvia, Lithuania, Estonia and Russian Federation	GF/95-621 - 01 Dec 1995
	Quota Table 1996 re allocation of "block" quota to Latvia, Lithuania, Estonia and Russian Federation	GF/95-612 - 22 Nov 1995
	Allocation of Greenland halibut in SA 2 and 3 for 1995	GF/95-233 - 12 Apr 1995
	Allocation of Greenland halibut in SA 2 and 3 for 1995	GF/95-129 - 03 Mar 1995
	Allocation of Greenland halibut in SA 2 and 3 for 1995	GF/95-223 - 07 Apr 1995
	Allocation of Greenland halibut in SA 2 and 3 for 1995	GF/95-147 - 10 Mar 1995
	Allocation of Greenland halibut in SA 2 and 3 for 1995	GF/95-148 - 10 Mar 1995



APPENDIX VIII- NAFO Initiatives in Developing an Ecosystem Approach To Fisheries (EAF) Management

1. BACKGROUND

1. The following brief history outlines various actions and decisions taken by NAFO in developing EAF management.

2. NAFO ACTIONS & DECISIONS

2.1 Bycatch Regulations & Fishing Moratoria

2. **1980:** Div. 3NO Cod became the first stock to fall under a moratorium. Bycatch of this stock was restricted to 2 500 kg and 10% of all species caught in Div. 3NO on-board ([FC Doc. 03/7](#) (NAFO, 2003d)).
3. **1981:** The precursor of current bycatch provisions was first set out in the CEM in the NCEM (1981 CEM, Part II.(B).(3)). ([FC Doc 80/IX/15](#) (NAFO, 1980). This stated that:
 3. *In order to avoid impairment of fisheries conducted primarily for other species and which take small quantities of regulated species incidentally:*
 - (a) *a Contracting Party shall permit vessels of that Party fishing primarily for other species to take regulated species with nets having a mesh size less than specified in paragraph 2, in excess of 2, 500 kilograms for each or 10 percent by weight for each, of all fish on board, whichever is greater.*
4. **1994:** Fishing for four stocks (Div. 3M American Plaice, Div. 3LNO American Plaice, Div. 3NO Witch Flounder, and Div. 3LNO Yellowtail) was suspended. For the first time, bycatch provisions (limits) for species under moratorium appeared as a footnote in the 1994 *Quota Table* ([FC Doc. 94/1](#) (NAFO, 1994)). Since then, stocks under moratorium have been subject to the “Incidental Catch Limits” provision:

In cases where a ban on fishing is in force or an “Others” quota has been fully utilized, incidental catches of the species concerned may not exceed 1,250 kg or 5%, whichever is the greater.
5. **2004:** “Incidental Catch Limits” provisions became “Bycatch requirements” ([FC Doc. 04/1](#) (NAFO, 2004d)) (currently Article 12 in CEM).
6. **2007:** Update of bycatch regulations articles first appeared in CEM. These outlined conditions for bycatch retained on board, by-catch in any one haul, and bycatch during directed fishing ([FC Doc. 06/11](#) (NAFO, 2006e)).
7. **2009:** The *Fisheries Commission* adopted guiding principle for the taking of decisions concerning bycatch requirements in a mixed fishery. This provided for the development of a bycatch strategy on a case-by-case basis. In this regard, bycatch provisions for Div. 3M Cod, Div. 3LNO American Plaice (as a bycatch in the Yellowtail fishery), and Div. 3LN Redfish were modified ([Meet. Proc., 2008-09](#), Section III (NAFO, 2009b)).

2.2 Protection of Non-target Species

8. **1993:** Minimum fish size requirements were put in place for Atlantic Cod, Greenland Halibut, American Plaice and Yellowtail Flounder ([FC Doc. 92/21](#), p. 65 (NAFO, 1992)) (currently Article 14 of CEM Annex III).
9. **2006:** Measure were introduced to conserve and manage Sharks. Fishing for the sole purpose of fin collection was prohibited. ([FC Doc. 05/8](#) (NAFO, 2005d)) (currently CEM Article 17).



10. **2007:** Resolution passed to reduce sea-turtle mortality ([FC Doc. 06/7](#) (NAFO, 2006d)).

2.3 Area Closures & Protection Zones

11. **2008 - 2010:** A *Coral Protection Zone* declared in Division 3O in 2008 and 11 areas were closed in 2010 to bottom fishing to protect significant concentration of corals and sponges ([FC Doc. 07/18](#) (NAFO, 2007e) and [FC Doc. 09/11](#) (NAFO, 2009d) and [FC Doc. 09/12](#) (NAFO 2009e)) (currently CEM Article 16).
12. **2007 & 2009:** Four seamounts were closed to bottom fishing in 2007 with two more seamounts be closed in 2009 ([FC Doc. 06/5](#) (NAFO, 2006f) and [FC Doc. 08/16](#) (NAFO, 2008h)) (currently CEM Article 15.5).

2.4 Vulnerable Marine Ecosystems

13. The conservation and enforcement measures in NEM Chapter 1.(bis) encapsulate NAFO's response to *UNGA Resolution 61/105*. The measures cover, *inter alia*:
- Delineation of existing bottom-fishing areas ('Footprint');
 - Exploratory Fishing Protocol (Outside the Footprint);
 - Assessment Procedures, and
 - Thresholds and Encounter Provisions.
14. **2008:** Following *UNGA Resolution 61/105*, the *Fisheries Commission* established a *Coral Protection Zone* (see paragraph 11 above). This closed down all fishing activity involving bottom contact gear in a large area of Division 3O ([FC Doc. 07/18](#) (NAFO, 2007e)) (currently CEM Article 16).
15. NAFO noted it was already taking steps to address the impacts on seamounts found in the NAFO *Regulatory Area* ([FC Doc 06/5](#) (NAFO, 2006f)). It considered that further precautionary steps were important to addressing potential fishing impacts on VMEs.
16. The *Fisheries Commission* therefore decided to specifically address the *Protection of Vulnerable Marine Ecosystems from Significant Adverse Impacts* at an intersessional meeting in May 2008. This meeting was seen as providing a suitable forum for the comprehensive consideration of strategies and measures to address VMEs ([Meet. Proc. 2007-08](#), Section III, NAFO, 2008b).
17. The *Fisheries Commission* also requested the *Scientific Council* to develop initial methodologies for identifying VMEs to assess whether bottom fishing activities would have significant adverse impacts on such VMEs. The *Council* was also requested to develop appropriate scientific methods for the longer term monitoring of VME 'health' ([FC Doc. 08/2](#) (FC, 2008b)).
18. **2008:** The *Fisheries Commission* Intersessional Meeting was held and it reviewed *UNGA Resolution 61/105* to: (a) assess relevant fisheries processes to be addressed, (b) develop measures to mitigate significant adverse impacts on VMEs, and (c) develop an exploratory fishing protocol ([Meet. Proc., 2007-08](#), Section III (NAFO, 2008b)).
19. At this meeting, interim conservation and enforcement measures were formulated and adopted. These became CEM Chapter 1.(bis) – *Bottom Fisheries in the NAFO Regulatory Area*. The *Ad Hoc Working Group of Fishery Managers and Scientists* (WGFMS) was also formed with the main task of reviewing CEM Chapter 1.(bis) advise the Fisheries Commission on conservation, and other measures, to protect VMEs ([FC Doc. 08/3](#) (NAFO, 2008i)).
20. As requested⁹⁶, the *Scientific Council* provided advice on VME to the *Fisheries Commission*. The *Council Working Group on Ecosystem Approach to Fisheries Management* (WGEAFM) met in May 2008 ([SCS Doc 08/24](#) (NAFO, 2008j)) and its report provided information and

⁹⁶ See paragraph 17 above.



advice on VMEs. The attached advice was endorsed by the *Scientific Council* at its June 2008 meeting ([Sci. Rep. 2008](#), p. 35-47 (NAFO, 2009c)).

21. The WGFMS had its inaugural meeting in September 2008. Drawing on *Scientific Council* advice regarding VMEs generally, as well as on criteria identified in the *FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas*, WGFMS discussed risk assessments and mitigation measures to avoid significant adverse impacts on VMEs. The meeting concluded with recommendations refining the encounter provisions, coral and sponge threshold quantities, and the *Exploratory Protocol for New Fishing Areas* ([Meet. Proc. 08-09](#), Section I (NAFO, 2009b)).
22. The 2008 Fisheries Commission Annual Meeting adopted the Preliminary Assessment of the Risk of Significant Adverse Impact (SAI) of Fishing Activities in the NAFO Regulatory Area. This document was based on the WGFMS recommendations of the WGFMS and covers ([FC Doc. 08/16](#)) (NAFO, 2008h)).
 - Extension of current seamount measures including Fogo Seamounts;
 - Adoption of Interim Exploratory Fishery Protocol, and
 - Adoption of interim Encounter Provisions for Deep-sea VMEs in both fished and unfished areas of the NAFO Regulatory Area (NRA).
23. **2009:** The WGFMS held two meetings in March and September 2009. These reviewed scientific information on corals and sponges, bottom fishing footprints, mitigation measures, thresholds, the *Exploratory Fishery Protocol*, and impact assessment of bottom fishing processes ([Meet. Proc. 2008-09](#), Section IV (NAFO, 2009b) and [Meet. Proc. 2009-10](#), Section I (NAFO, 2010c)).
24. At its September 2009 Annual Meeting, the *Fisheries Commission* adopted updated conservation and enforcement measures for VMEs ([Meet. Proc. 2009-10](#), Section III (NAFO, 2010c)). These measures were based on recommendations from the two 2009 meetings of the WGFMS. They addressed:
 - Protection of significant coral concentrations ([FC Doc. 09/11](#) (NAFO, 2009d));
 - Protection of significant sponge concentrations ([FC Doc. 09/12](#) (NAFO, 2009e));
 - VME Encounter provisions ([FC Doc. 09/13](#) (NAFO, 2009f)) , and
 - Exploratory Data Collection Form ([FC Doc. 09/14](#) (NAFO, 2009g)).
25. **2010:** The WGFMS met in May 2010 to conclude updating of its recommendations concerning assessment of bottom fishing, the fishing footprint, and VME encounter provisions ([Meet. Proc. 2009-10](#), Section IX (NAFO, 2010c)).
26. At its September 2010 Annual Meeting, the *Fisheries Commission* adopted further, and updated, its VME conservation and enforcement measures ([FC Doc. 10/29](#) (NAFO, 2010d)). These measures drew on 2010 WGFMS recommendations ([FC Doc. 10/27](#) (NAFO, 2010p)) which provided:
 - A map ('footprint') of existing fisheries in NAFO Regulatory Area;
 - Revision on Article 4bis on Assessment of Bottom Fishing;
 - Revision of the Exploratory Fishery Data Collection Form, and
 - Revision of CEM Article 5.(bis) on encounter provisions .
27. In addition, the *Fisheries Commission* gave the WGFMS permanent status and renewed its terms of reference. The WG's main objective is to provide recommendations to the *Fisheries Commission* on effective implementation of measures to prevent significant adverse impacts on VMEs ([FC Doc. 10/29](#) (NAFO, 2010d)).



APPENDIX IX- STATLANT Catch Data & STACFIS Estimates of Catch

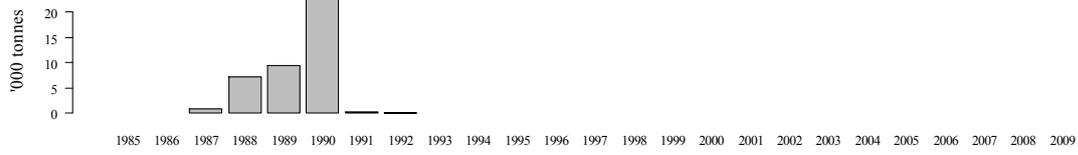
BACKGROUND

1. NAFO Contracting Parties annually submit compilations of national catch landings to the NAFO Secretariat. These data are used for statistical purposes by NAFO, and elsewhere (e.g. the FAO) in the form of the STATLANT 21 database. The data are revised periodically, as and when new information becomes available⁹⁷.
2. Less formal catch estimates are also prepared by STACFIS. These take into account information held by national fisheries institutions and expert knowledge of catches. The estimates may also be affected by information arising after the formal catch reports are first provided, and so may also be subject to revision.
3. In 2001, the *Scientific Council* prepared tables and graphs for STATLANT-reported catches by stock tabulated against STACFIS estimates for the period 1985-2000 ([SC Rep. 2001](#), p. 189-198)(NAFO, 2002b)). This information was reviewed by the NAFO Performance Assessment Panel and the Secretariat was requested to update the available tables and attached figures.
4. Reported STATLANT values were obtained by running the STATLANT 21A data extraction tool on the NAFO website. STACFIS estimates were taken from yearly stock assessment reports published annually as part of the NAFO *Scientific Council Reports* in the year when the data were reported.
5. The catch estimate figures for any year (n) and 2 subsequent years were included in order to assess whether the STATLANT and STACFIS estimates vary as reported information is updated.
6. The PRP compared the mean percentage differences between annual STATLANT-reported catches and the STACFIS catch estimates. For illustrative purposes, plots for various species are shown below to compare percentage differences between STACFIS estimates and STATLANT-reported catches. These plots provide a visual depiction of annual STATLANT-reported catches, STACFIS catch estimates and percentage differences between STACFIS catch estimates and STATLANT-reported catch data for selected species.

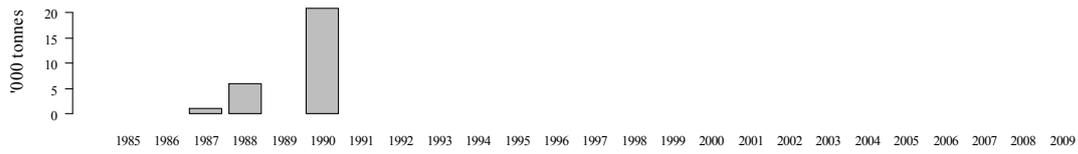
⁹⁷ Usually by the flag State Contracting Party authorities providing the information to NAFO.



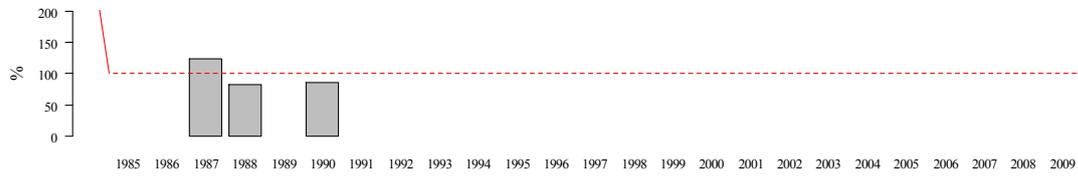
Capelin, 3NO



STATLANT

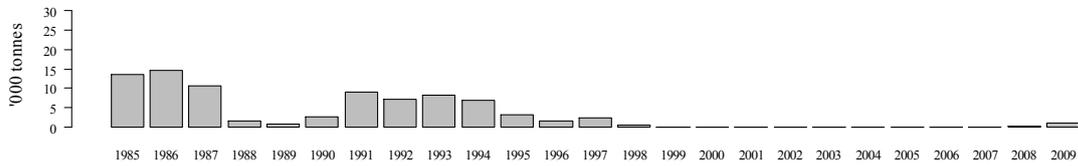


STACFIS

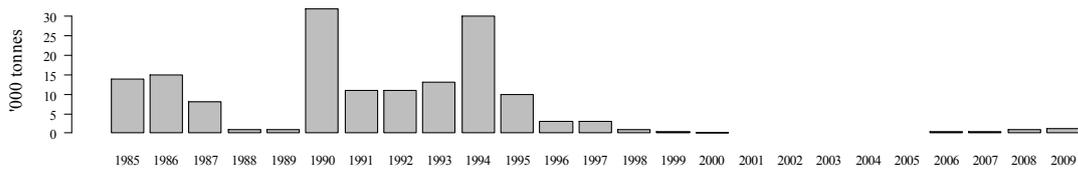


STACFIS as a percentage of STATLANT

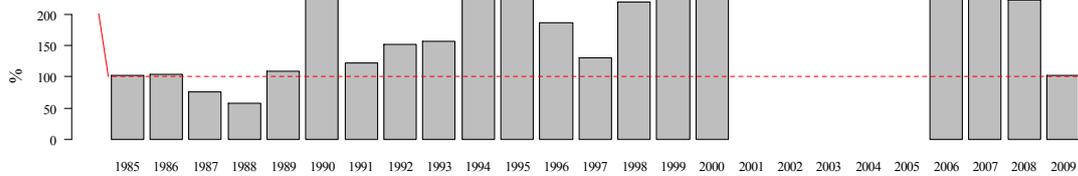
Cod, 3M



STATLANT



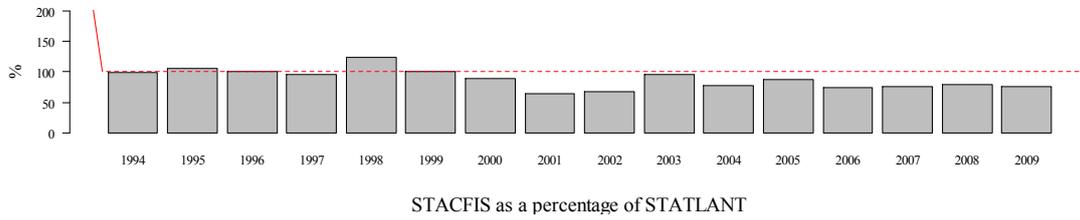
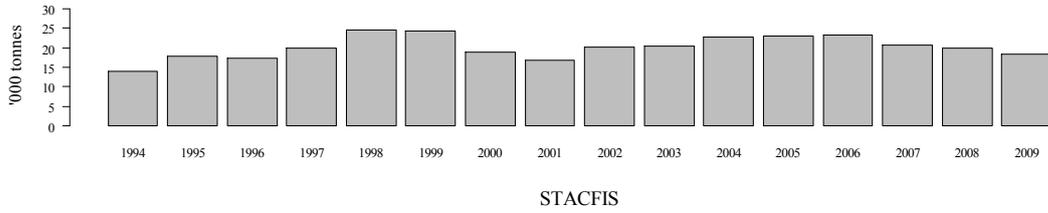
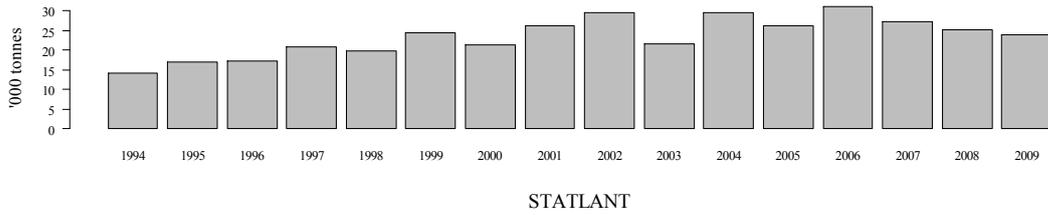
STACFIS



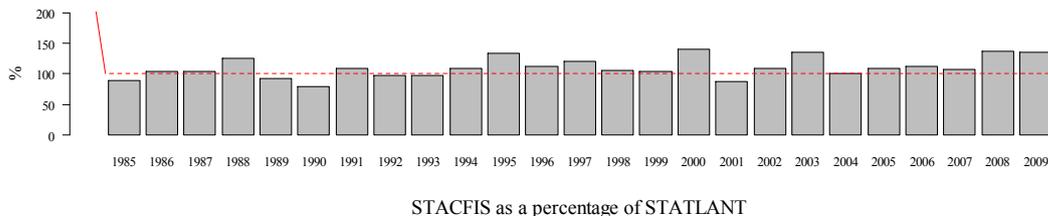
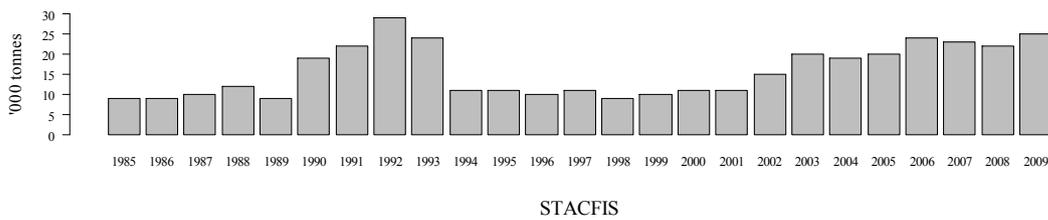
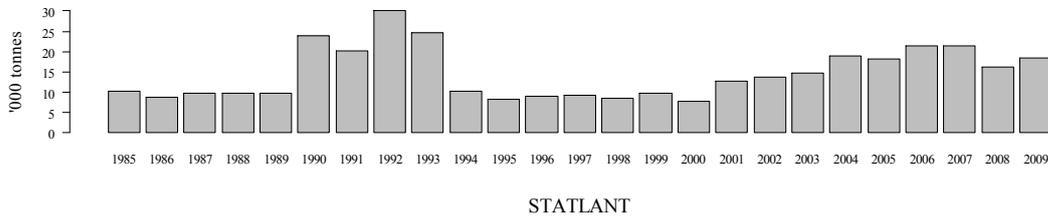
STACFIS as a percentage of STATLANT



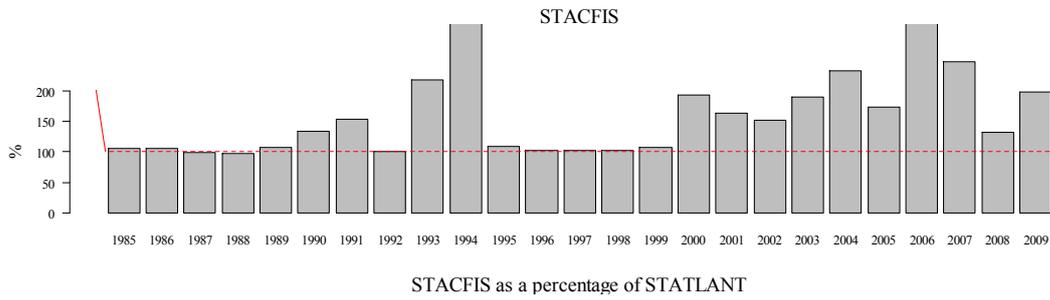
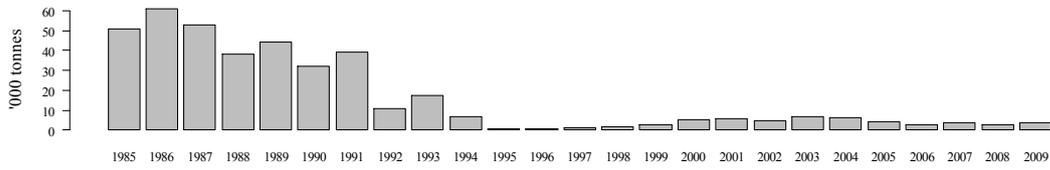
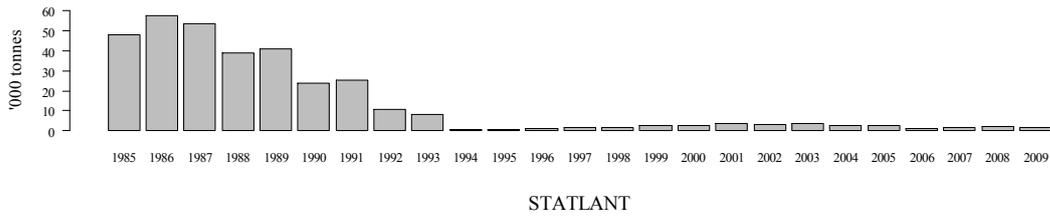
Greenland Halibut, 1A (Inshore)



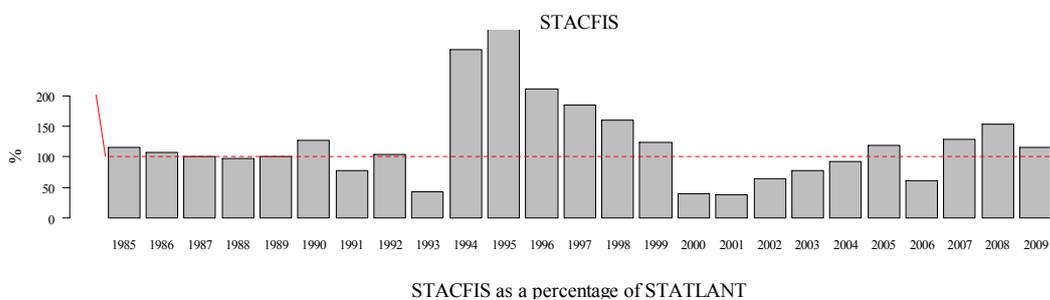
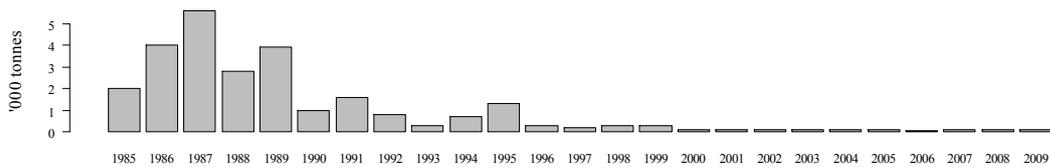
Greenland Halibut, 0, 1A (Offshore), 1B-F



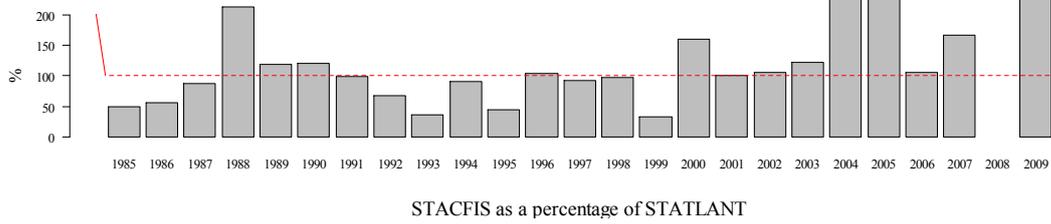
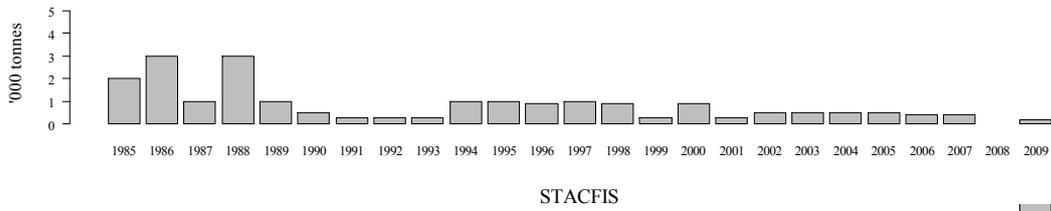
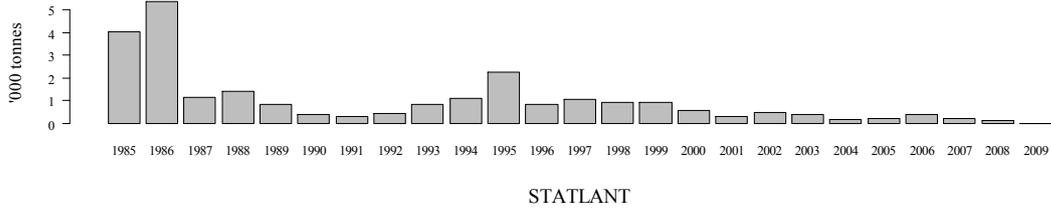
American Plaice, 3NLO



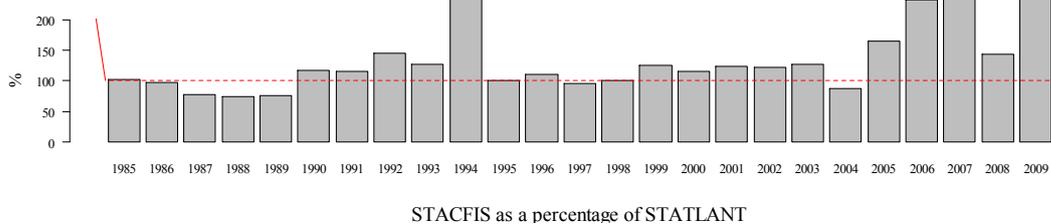
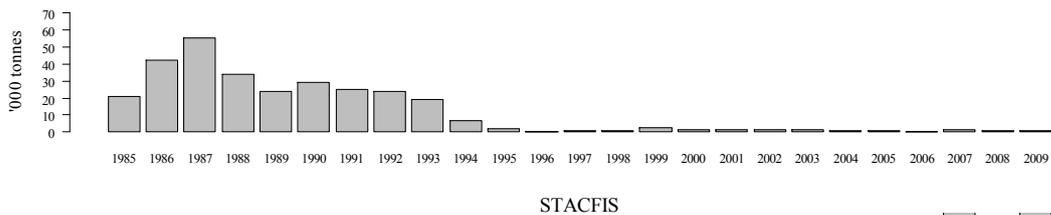
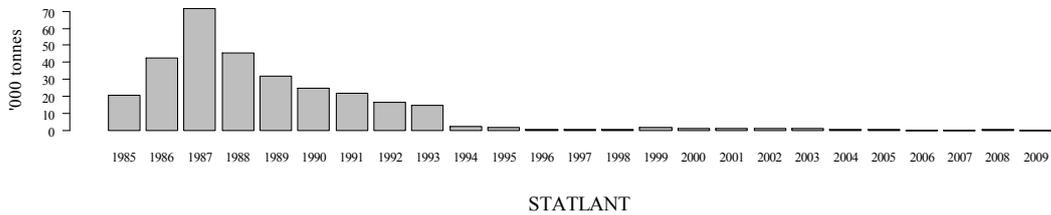
American Plaice, 3M



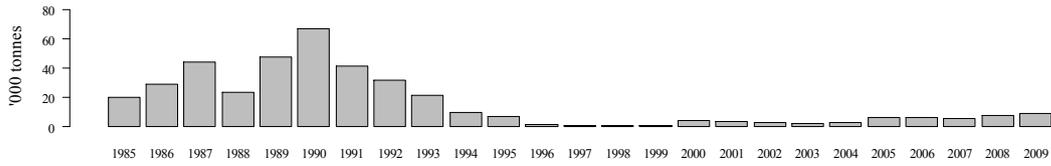
Redfish, 1



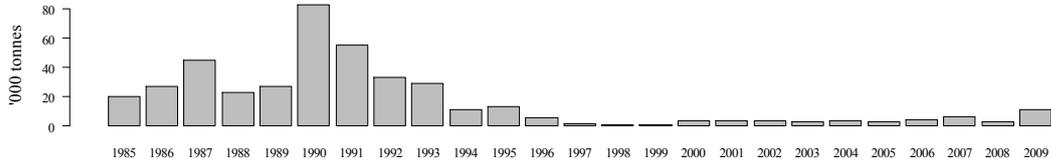
Redfish, 3LN



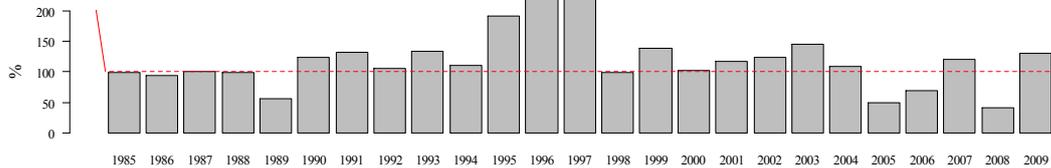
Redfish, 3M



STATLANT

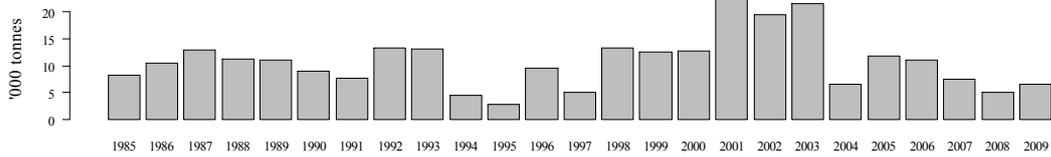


STACFIS



STACFIS as a percentage of STATLANT

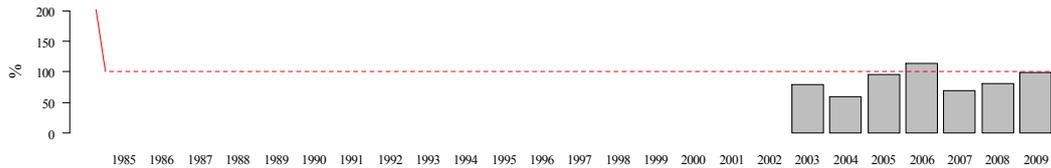
Redfish, 3O



STATLANT



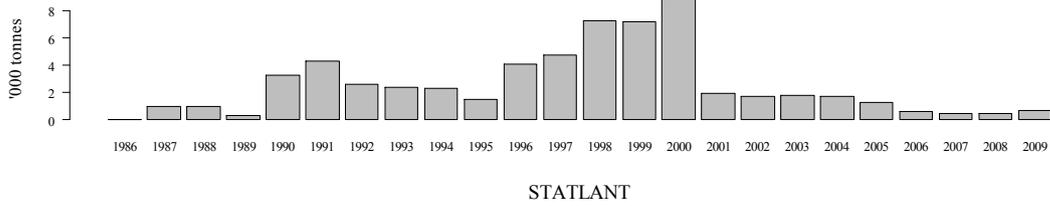
STACFIS



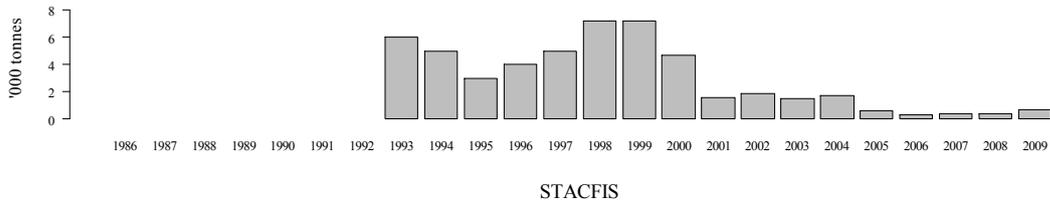
STACFIS as a percentage of STATLANT



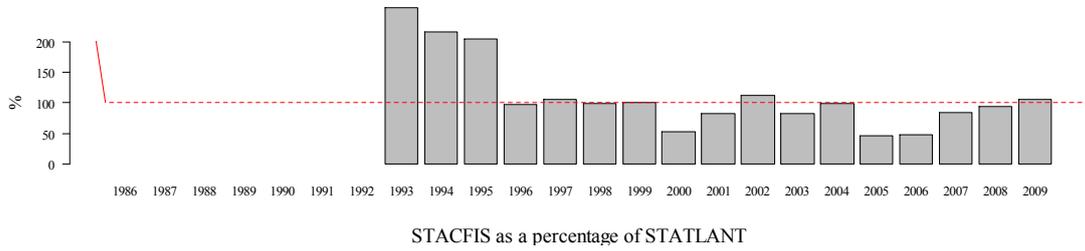
Roughead Grenadier, 2+3



STATLANT

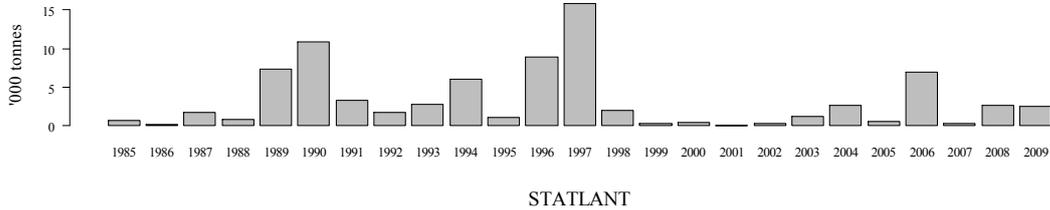


STACFIS

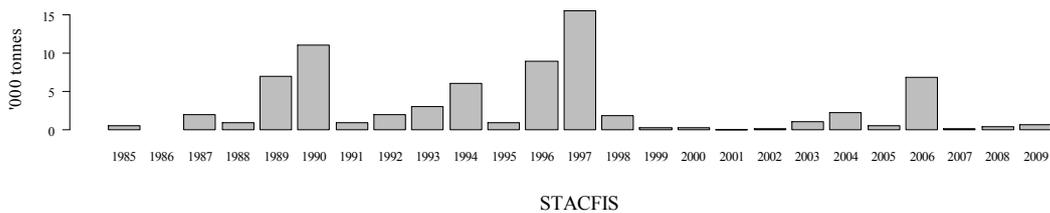


STACFIS as a percentage of STATLANT

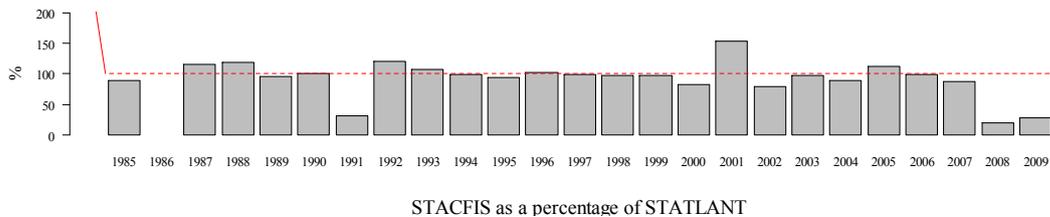
Squid, 2+3



STATLANT



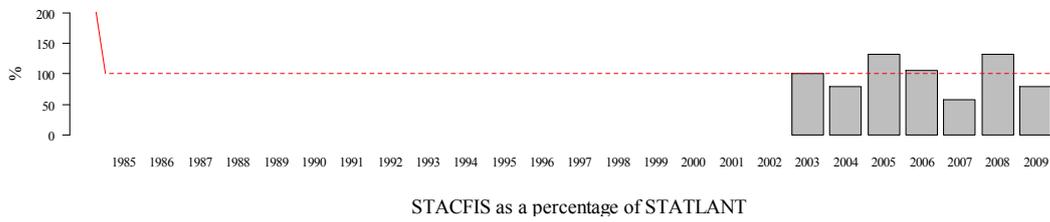
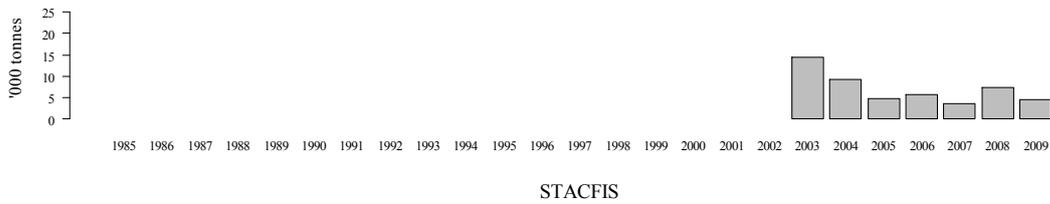
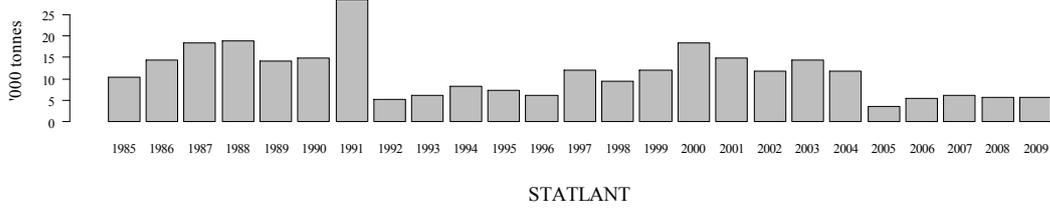
STACFIS



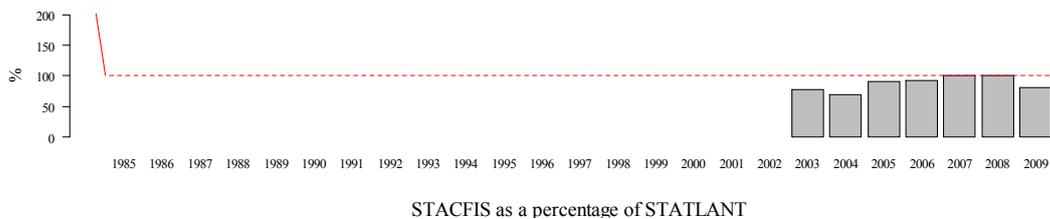
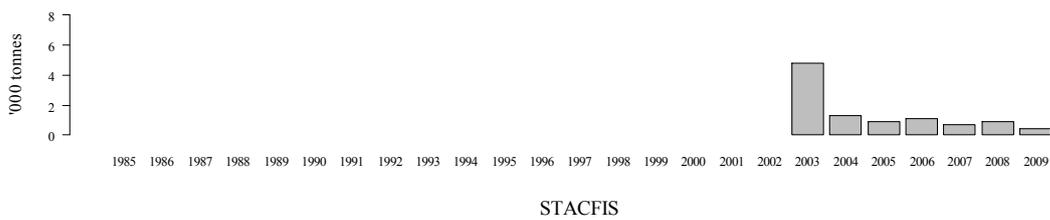
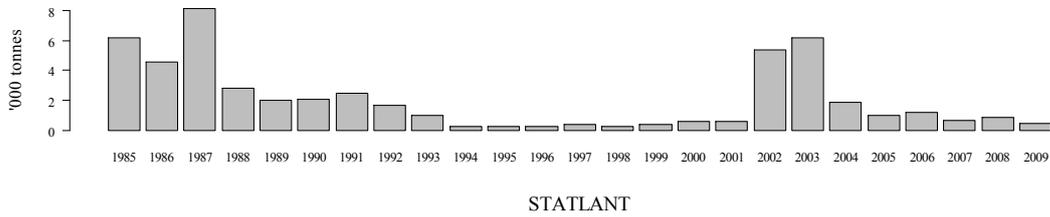
STACFIS as a percentage of STATLANT



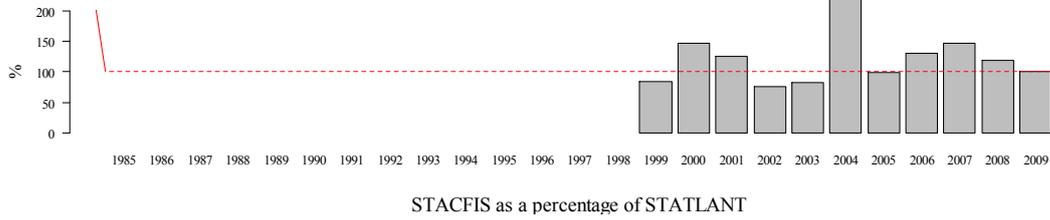
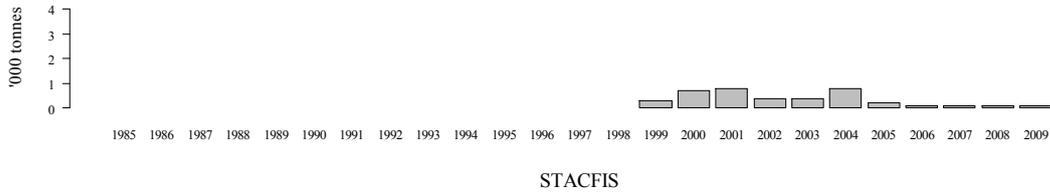
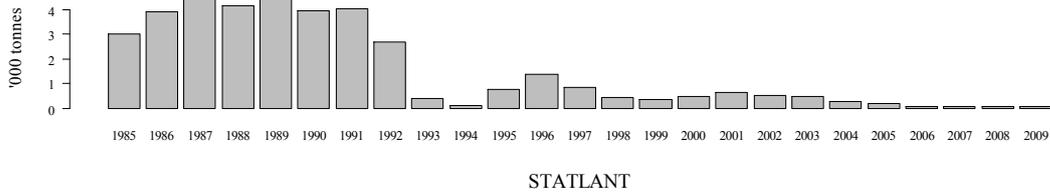
Thorny Skate, 3LNO



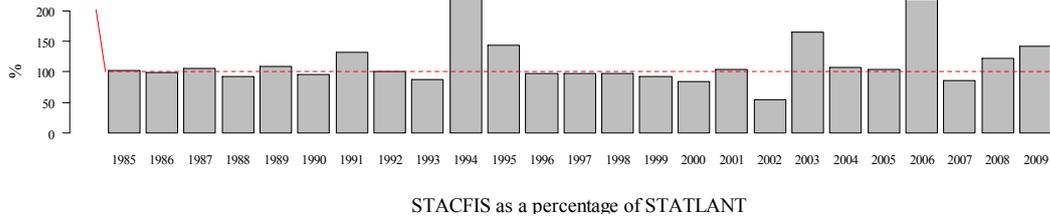
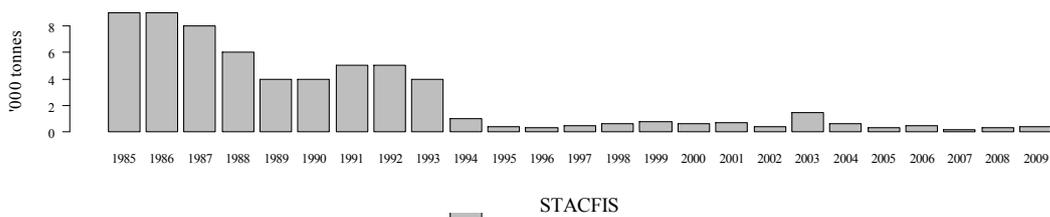
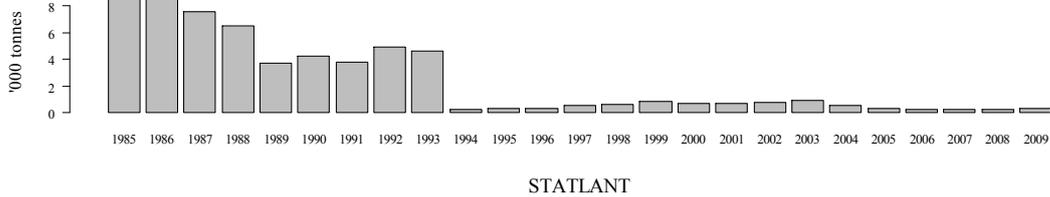
White Hake, 3NO



Witch Flounder, 2J, 3KL



Witch Flounder, 3N0



Yellowtail Flounder, 3LNO

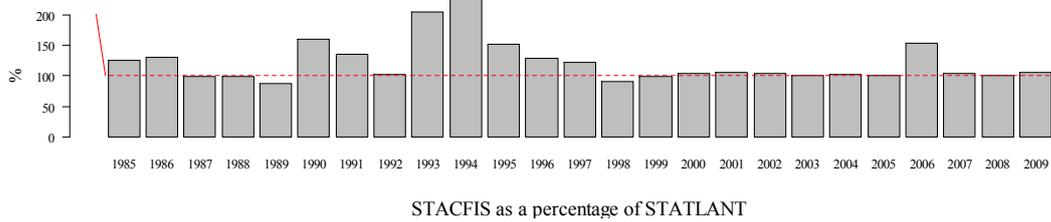
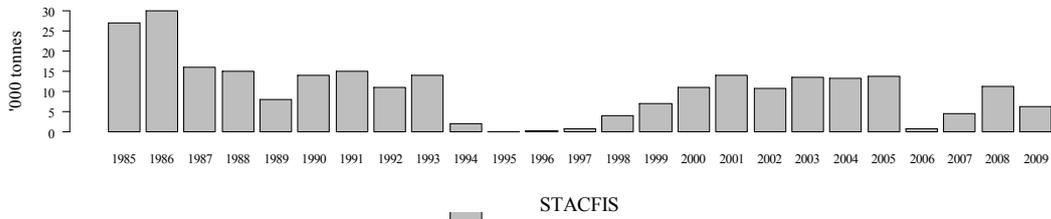
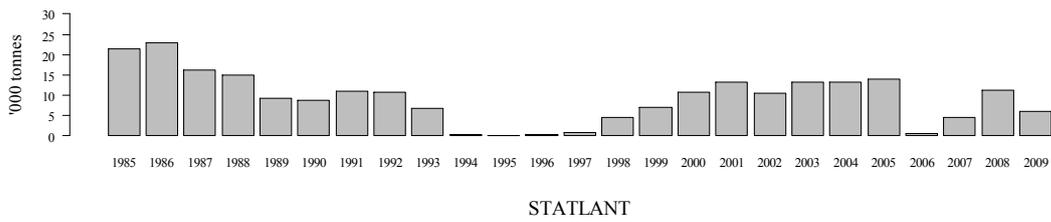


Table 1: STACFIS catch estimates as a mean percentage of STATLANT-reported catches and computed mean percentage difference for all NAFO-regulated fisheries. [* - Plots provided as per paragraph 6 above].

Species	Stock	Mean Percentage	Mean Percentage Difference
*Capelin	3NO	97.4	-23.0
*Cod	3M	1220.4	4426.6
Cod	3NO	137.3	37.3
*Yellowtail Flounder	3LNO	147.3	47.3
*Greenland Halibut	1A (Inshore)	88.3	--11.7
*Greenland Halibut	0,1A (Offshore) 1B-F	110.2	10.2
Greenland Halibut	2+3	114.9	14.9
*White Hake	3NO	86.8	-13.2
*American Plaice	3NLO	195.9	95.9
American Plaice	3M	130.0	30.0
*Redfish	1	160.6	60.6
*Redfish	3LN	165.7	65.7
*Redfish	3M	132.5	32.5
*Redfish	3O	84.9	-15.1
*Roughead Grenadier	2+3	111.2	11.2
Roundnosed Grenadier	0+1	75.8	-24.2
*Thorny Skate	3LNO	98.0	-12.0
*Squid	2+3	92.3	-7.7
*Witch Flounder	2J, 3K-L	125.9	25.9
*Witch Flounder	3NO	120.5	20.5

7. It is very noticeable that the mean percentage differences between STACFIS estimate estimated catches and STATLANT-reported catches vary widely. catches. (Table 1). Such a difference in most notable for Cod (Div. 3M) although this observation is strongly influenced by a small number of years where official catches were very low, and STACFIS estimates, although also low, were a high multiple of the official value.
8. The mean percentage difference between STACFIS catch estimates and STATLANT reported catch data is 19.4% - a noticeable but probably insignificant difference. Equally, the various plots in paragraph 6 suggest that, for the most part, STATLANT-reported catches and STACFIS catch estimates have tracked each other closely. However, major discrepancies are still evident. For example, these included American Plaice (Div. 3NO) and Redfish (SA1, Div. 3LN) as well as Cod (Div. 3NO) as highlighted in the previous paragraph. The effects that such discrepancies exerted on subsequent stock assessments cannot be determined.



APPENDIX X

Scientific Advice, TACs, Catch Statistics And Management Measures On NAFO Fish Stocks Under, & Not Under, Moratoria

Background

1. The information below outlines the advice provided by the Scientific Council on NAFO-regulated stocks (moratorium and non moratorium stocks). The corresponding measures adopted by the Fisheries Commission are also shown.
2. The 'moratoria stock' information is a compilation of historical information on each stock under a moratorium. This information includes scientific advice provided by *Scientific Council* on the TAC to be set, various catch statistics and the management measures finally agreed along with relevant references. The time period covered begins in 1979 (where applicable) and ends in 2011. Stocks addressed are: Div. 3L Cod, Div. 3NO Cod, Div. 3LNO American Plaice, Div. 3M American Plaice, Div. 3L Witch Flounder, Div. 3NO Witch Flounder, Div. 3NO Capelin, Div. 3NO Shrimp and Div. 3M Shrimp.
3. The 'non-moratoria stock' information is a compilation of historical information on each stock not under a moratorium. This information includes scientific advice provided by *Scientific Council* on the TAC to be set, various catch statistics and the management measures finally agreed along with relevant references. The time period covered begins in 1979 (where applicable) and ends in 2011. Stocks addressed are: Div. 3M Cod, Div. 3LN Redfish, Div. 3M Redfish, Div. 3O Redfish, SA 2+Div. 1F+3K Redfish, Div. 3LNO Yellowtail, Div. 3NO White Hake, Div. 3LNO Skates, Div. 3LMNO Greenland Halibut, SA 3+4 Squid, and SA 2 + Div. 1F + 3KJ Pelagic Redfish.



MORATORIA STOCK INFORMATION

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Cod in Division 3L							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to cod in 2J, 3K and 3L)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			77233				
1980			71782				
1981	no advice given	SC Rep. 1979-80, p.64 , 76-77	79651				
1982	no advice given	SC Rep. 1981, p. 24 , 35- 36	92942				
1983	no advice given	SC Rep. 1982, p. 73 , 78- 81	105042				
1984	<i>various management options</i>	SC Rep. 1983,p. 21 , 37-38	112992				
1985	no change (TAC 266 000 t)	SC Rep. 1984, p. 22 , 37- 40	107345				
1986	no change (TAC 266 000 t)	SC Rep. 1985, p. 34 , 49- 53	143953		Moratorium on a directed fishery for Div. 3L cod outside 200 miles, during 1986	FC Doc. 03/7, p. 4	
1987	no change (TAC 266 000 t)	SC Rep. 1986, p. 28-29 , 44-51	107271		Closing a directed fishery for Div. 3L Cod outside 200 miles during 1987.	FC Doc. 03/7, p. 4	

Cod in Division 3L							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to cod in 2J, 3K and 3L)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
	On the evidence for stock separation of cod in Div. 2J, 3K and 3L, if any: <i>From ... the evidence for incomplete mixing of these components, STACFIC advises that the concentration of fishing effort in any one division will generate differential fishing mortality between stock components and that this could result in local over-exploitation.</i>	SC Rep. 1986, p. 121-124					
1988	Is there further information available on stock separation in Div. 2J+3KL? <i>No new information on this topic is available, and conclusions from previous discussions remain unchanged.</i>	SC Rep. 1987, p. 76	135958		Closing a directed fishery for Div. 3L Cod outside 200 miles during 1988.	FC Doc. 03/7, p. 4	
1989			135864		Closing a directed fishery for Div. 3L Cod outside 200 miles during 1989.	FC Doc. 03/7, p. 6	
1990	On the information on stock separation in Div. 2J+3KL and the proportion of the biomass of the cod stock in Div. 3L in the Regulatory area: <i>... From the point of view of assessing the stock in Div. 2J+3KL, in spite of some evidence for genetic subdivisions, the cod of Div. 2J, 3K and 3L were intermingled to a significant degree, especially inshore during the feeding season.</i>	SC Rep. 1989, p. 15	131941		Closing a directed fishery for Div. 3L Cod outside 200 miles during 1990.	FC Doc. 03/7, p. 6	



Cod in Division 3L							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to cod in 2J, 3K and 3L)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1991			103354		Closing a directed fishery for Div. 3L Cod outside 200 miles during 1991.	FC Doc. 90/12	
1992	fishing mortality should be reduced in 1992 from the level of recent years and supports STACFIS comment that it would be wise to consider $F_{0.1}$ catch to be 50 000 tons, the lowest of the range of $F_{0.1}$ values.	SC Rep. 1992, p. 25-26 , 29-44	27416		Closure of the Div. 3L Cod fishery in the Regulatory Area during 1992	FC Doc. 91/14	
	Is there further information available on stock separation in Div. 2J+3KL? ...it was appropriate to asses con in 2J, 3K and 3L as a single stock complex. There is currently no additional information to change this conclusion.	SC Rep. 1992, p. 139-140					
1993	Is there further information available on stock separation in Div. 2J+3KL? ...it was appropriate to asses con in 2J, 3K and 3L as a single stock complex. There is currently no additional information to change this conclusion.	SC Rep. 1993, p. 24-25	3521		No directed fishery (in force November 1993)	FC Doc. 93/9	
1994	Long-term prospects: At present there are no indications that this stock will begin to recover until a number of at least average year-classes recruit. Because all year-classes from 1988 to 1992 are considered likely to be poor, significant recovery is not anticipated prior to the late-1990s.	SC Rep. 1993, p. 6 , 47-56	937		No directed fishery (in force November 1993)	FC Doc. 93/9	



Cod in Division 3L							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to cod in 2J, 3K and 3L)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
	The stock separation issue has been reviewed previously and it was then concluded that it was appropriate to assess cod in Div. 2J, 3K and 3L as a single stock complex. There is currently no additional information to change this conclusion.	SC Rep. 1993, p.24					
1995	Current data suggest further stock declines. No fisheries should be considered until there is evidence of adequate recovery.	SC Rep. 1994, p. 25 , 59-64	186		No directed fishery in 1995	FC Doc. 94/8 (Rev)	
	The stock separation issue has been reviewed previously and it was then concluded that it was appropriate to assess cod in Div. 2J, 3K and 3L as a single stock complex. There is currently no additional information to change this conclusion.	SC Rep. 1994, p.43					
1996	Stock rebuilding will only be possible if the moratorium is maintained	SC Rep. 1995, p. 31 , 57-64	253		No directed fishery for Cod Div. 2J+3KL in the Regulatory Area in 1996	FC Doc. 95/23	
1997	Stock rebuilding will only be possible if the moratorium is maintained	SC Rep. 1996, p. 30 , 51-56	374		No directed fishery for Cod Div. 2J+3KL in the Regulatory Area in 1997	FC Doc. 96/7	
					Measures, currently in Article 4 of the NCEM, introduced	FC Doc. 96/10	



Cod in Division 3L							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to cod in 2J, 3K and 3L)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1998	Stock rebuilding requires that the moratorium be maintained and that fishing-related mortality be kept to the lowest possible level.	SC Rep. 1997, p. 63 , 133-137	2064		No directed fishery for Cod Div. 2J+3KL in the Regulatory Area in 1998	FC Doc. 97/10	
	The stock separation issue has been reviewed previously and it was then concluded that it was appropriate to assess cod in Div. 2J, 3K and 3L as a single stock complex. There is currently no additional information to change this conclusion.	SC Rep. 1997, p. 31					
1999	no advice given	SC Rep. 1998, p. 55-56 , 132-135	4779		No directed fishery for cod Div. 2J+3KL in the Regulatory Area in 1999	FC Doc. 98/13	
	The stock separation issue has been reviewed previously and it was then concluded that it was appropriate to assess cod in Div. 2J, 3K and 3L as a single stock complex. There is currently no additional information to change this conclusion.	SC Rep. 1998, p. 41					
2000	The stock as a whole remains at a very low level.	SC Rep. 1999, p. 70-71 , 170-175	3486		No directed fishery for Cod Div. 2J+3KL in the Regulatory Area in 2000	FC Doc. 99/8	



Cod in Division 3L							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to cod in 2J, 3K and 3L)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2001	The stock as a whole remains at a very low level.	SC Rep. 2000, p. 35-36 , 155-162	3692		No directed fishery for Cod in Div. 3L in the Regulatory Area in 2001	FC Doc. 00/10	
	On the evaluation of the use made of information from a) the index fishery; b) the sentinel fishery in the assessment of Div. 2J and 3KL cod; c) the food/recreational fishery: <i>Data from sentinel fisheries, index fisheries and food fisheries are being used as part of the assessment. Overall, the limited fisheries in the inshore area provide invaluable information that form a critical part of the resource assessment.</i>	SC Rep. 2000, p. 183-184					
	On the evaluation of the state of the stock and the impact of a fishery at a level of 7000 t in 200, with respect to precautionary criteria as proposed by SC, and reference points previously used for management of this stock: <i>as a whole remains at a very low level...in the offshore there are no signs of recovery.</i>	SC Rep. 2000, p. 183-184					
	With respect to Precautionary Approach: <i>it is considered that the Div 2J and 3KL cod resource overall is such that no fishing mortality would be recommended.</i>	SC Rep. 2000, p. 184-185					
	On the evaluation of the effect of fisheries of the order of 7000 to 9000 t on the prospective recovery of the stock: <i>...no analytical assessment is available...any removals will hamper recovery..</i>	SC Rep. 2000, p. 185					
	On the proportion of juvenile fish taken by various gears: <i>Considering the sentinel, food/recreational, index and commercial fisheries, the proportion of juveniles (taken by various gears) ranges from 18% to 39% in the period 1995-1999.</i>	SC Rep. 2000, p. 185					



Cod in Division 3L							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to cod in 2J, 3K and 3L)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
	On the implications of concentrated fishing on local aggregations for the preservation of the genetic diversity of the stock: a) two separate fishing seasons to spread fishing effort over time, b) restrictions on areas fished to spread fishing effort over space, c) implementation of individual index quotas for each fisher, d) closure of areas of high density of potentially spawning cod (Smith Sound).	SC Rep. 2000, p. 186-87					
2002	The 2J and 3KL cod spawner biomass remains at an extremely low level and there is no evidence of a recovery. Any fishery on the remnant in the inshore will delay recovery of the stock.	SC Rep. 2001, p. 37	3023		Rollover of all current CEM Measures	GF/01-736	
2003	The total and spawning biomass indices are both extremely low relative to historic levels... The new information considered in the stock status update substantially increases the concerns noted in the 2001 assessment regarding the sustainability of current levels of fishing.	SC Rep. 2002, p.35	966		No directed fishing of Cod in Div. 3L in the Regulatory Area in 2003	FC Doc. 02/24	
2004	For the offshore, the Total biomass index (of 2J and 3KL) in 2002 remained extremely low at only 2% of the average in the 1980s. The spawning biomass index (of 3L) is currently less than 1% of the average in the 1980s.	SC Rep. 2002-2003, p. 181	455	*	Article 4 - Cod in Divisions 2J+3KL	NCEM 2004	The provisions of Article 9 paragraph 3 shall apply. ³
2005			672	*	<i>ditto</i>	NCEM 2005	The provisions of Article 9 paragraph 3 shall apply. ³
2006			1213	*	<i>ditto</i>	NCEM 2006	The provisions of Article 9 paragraph 3 shall apply. ³
2007			1393	*	<i>ditto</i>	NCEM 2007	The provisions of Article 9 paragraph 3 shall apply. ³
2008			1686	*	<i>ditto</i>	NCEM 2008	The provisions of Article 11 paragraph 1B shall apply. ³



Cod in Division 3L							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to cod in 2J, 3K and 3L)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2009			1757	*	<i>ditto</i>	NCEM 2009	Footnote 9: The provisions of Article 12 paragraph 1B shall apply. ³
2010				*	<i>ditto</i>	NCEM 2010	Footnote 9: The provisions of Article 12 paragraph 1B shall apply. ³
2011				*	<i>ditto</i>	NCEM 2011	Footnote 9: The provisions of Article 12 paragraph 1B shall apply. ³

*Ban on fishing in force.

¹Vessels of a Contracting Party shall limit their incidental catch to a maximum of 2500 kg or 10%, whichever is the greater, for each species listed in Schedule I for which no quota has been allocated in that division to that Contracting Party.

²Masters shall not conduct directed fisheries for species for which incidental catch limits apply.

³ In cases where a ban on fishing is in force or an "Others" quota has been fully utilized, incidental catches of the species concerned may not exceed 1, 250 kg or 5%, whichever is greater.

⁴ The percentages are calculated as the percentage, by weight, for each species of the total catch retained on board. Catches of shrimp shall not be included in the calculation of bycatch levels of ground fish species.



Cod in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			27940				
1980	The Council advises that a cautious approach to the exploitation of the cod stock for Div. 3NO should be maintained until clear evidence of rebuilding the stock to the optimal level is indicated.	SC Rep. 1970-80, p. 38, 47	19990	0	No directed fishery. Bycatch restricted to 2500 kg and 10% of total weight on board of all species caught in Div. 3NO.	FC Doc. 03/7 p. 2	
1981	The Council emphasizes that the stock is in a depleted state, consisting mainly of young fish, and that low fishing mortality in the next few years would provide a gain in yield per recruit. .. advises that a cautious approach to the exploitation of cod in Div. 3NO should be maintained	SC Rep. 1981, p.7-8 , 12-15	24344	26000			Footnote 5: TAC shall not be increased until such time as the SC reports that age 3+ annual mean biomass has reached 200 000 metric tons.
1982	In the absence of new data on changes in biomass, no additional advice on the status of this stock could be provided. The Committee advises that further assessment of this stock should be deferred to a mid-term meeting in early 1982 when new information from the commercial fishery and from research surveys in 1981 will be available.	SC Rep. 1981, p. 24 , 37-38	31605	17000			Footnote 2: <i>ditto</i>
1983	TAC 26 000 t	SC Rep. 1982, p. 8 , 22-23	28818	17000			<i>ditto</i>
1984	TAC 26 000 t	SC Rep. 1983, p. 21 , 39-40	27103	26000			Footnote 7: <i>ditto</i>



Cod in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1985	STACFIS advises that the yield in 1985, calculated to correspond to fishing at $F_{0.1}$, is 33 000 t.	SC Rep. 1984, p. 22 , 42-44	36899	33000			
1986	Fishing at $F_{0.1}$ which corresponds to 33 000 t.	SC Rep. 1985, p. 34 , 54-57	50645	33000			
	A cessation of fishing would provide for the most speedy rebuilding, but the actual rate of recovery to a particular equilibrium level of biomass would then depend largely on recruitment.... STACFIS has no reason to change its long-term expectations regarding stock productivity.	SC Rep. 1985, p. 113- 114					
1987	no advice possible	SC Rep. 1986, p. 109 , 119-121	41619	33000			
1988	deferred to September 1987	SC Rep. 1987, Part B (June 1987), p. 25-27 , 43-47	43150	40000			
	deferred to June 1988 Meeting	SC Rep. 1987, Part C (Sep 1987), p. 99 , 104, SCS Doc. 87/24)					
1989	the new assessment coupled with a new yield-per-recruit analysis which suggests lower fishing mortalities for the reference levels, gives a projected catch in 1989 at $F_{0.1} = 1.15$ of 25 000 t, and $F_{max} = 0.25$ of 40 000 t. The projected catch in 1989 at the 1987 level of fishing mortality ($F_{87} = 0.2$) is 33 000 t).	SC Rep. 1988, p. 12- 14, 31-38 , 91	33215	25000			
1990	$F_{0.1} = 0.15$ predicted catch is 18 600 t	SC Rep. 1989, p. 18 , 56-62	18551	18600			
1991	$F_{0.1} = 0.25$ predicted catch 13 600 t	SC Rep. 1990, p. 15 , 53-60	14935	13600			



Cod in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1992	This stock is currently at a low level. The approximate SPA and available abundance indicate that the adult population is declining and several year-classes in the most recent period are among the lowest observed. Given the current state of the stock, the catch for 1992 should not exceed the 1991 TAC of 13 600 t.	SC Rep. 1991, p. 15 , 54-57	10653	13600	Minimum commercial cod size 40 cm.	FC Doc. 91/14.	
1993	The SPA and available abundance indices indicate that the adult population is declining and several year classes in the most recent period are among the lowest observed. Given the current state of the stock the catch in 1993 should not exceed the estimated $F_{0.1}$ catch of 10 200 t.	SC Rep. 1992, p. 50 , 82-89	9952	10200			
1994	the 1994 catch should not exceed 6 000 t	SC Rep. 1993, p. 8 , 59-65	1880	0	NDF for cod in Div. 3NO.		Considering the advice contained in the SC Rpt and having regard to the poor state of the Cod in Divisions 3NO; American plaice in Divisions 3LNO and 3M; Witch flounder in Div 3NO and Yellowtail flounder in 3LNO, no directed fishery shall be carried out under the TACs agreed for each of these stocks, which are suspended. The provisions of Part I, Section A.4b) of the NFAO NCEM shall apply. ¹
1995	SC reiterated its June 1993 advice that any catch in 1994 should not exceed 6 000 t. This catch level is an upper limit and should not be interpreted as a recommended TAC.	SC Rep. 1994, p. 3-4 , 7-17	111	*			No directed fishing - The provisions of Part 1, Section A4b) shall apply. ¹
	The stock must be allowed to rebuild. There should be no fishing for cod in Div. 3N and 3O in 1995.	SC Rep. 1994, p. 27 , 67-70					



Cod in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1996	There should be no direct fishing for cod in Div. 3N and 3O in 1996. By-catches in fisheries targeting other species should be kept at the lowest possible level.	SC Rep. 1995, p. 16 , 67-70	139	*			<i>ditto</i>
1997	There should be no directed fishing for cod in Div. 3N and 3O in 1997. Bycatches in fisheries targeting other species should be kept at the lowest possible level.	SC Rep. 1996, p. 16 , 60-64	442	*			<i>ditto</i>
1998	There should be no directed fishing for cod in Div. 3N and 3O in 1998. Bycatches in fisheries targeting other species should be kept at the lowest possible level.	SC Rep. 1997, p. 18 , 84-87	504	*			<i>ditto</i>
1999	There should be no directed fishing for cod in Div. 3N and 3O in 1999. Bycatches in fisheries targeting other species should be kept at the lowest possible level.	SC Rep. 1998, p. 23 , 71-74	896	*			<i>ditto</i>
2000	There should be no directed fishing for cod in Div. 3N and 3O. Bycatches of cod in fisheries targeting other species should be kept at the lowest possible level.	SC Rep. 1999, p. 49-51 , 128-132	488	*			No directed fishing - The provisions of Part 1 Section A5.a and c of the NCEM shall apply. ^{2,3}
2001	<i>ditto</i>	SC Rep. 2000, p. 114- 117	1059	*			<i>ditto</i>
2002	NDF. By-catches of cod in fisheries targeting other species should be kept at the lowest possible level.	SC Rep. 2001, p. 21	1202	*			<i>ditto</i>
2003	<i>ditto</i>		1586	*			<i>ditto</i>
2004	NDF. By-catches of cod in fisheries targeting other species should be kept at the lowest possible level. Efforts should be made to reduce current levels of bycatch.	SC Rep. 2002/2003, p. 162	863	*			<i>ditto</i> . In the 2004 overhaul of the NCEM, Part1, Section A.5c became Article 9 paragraph 3. ³
2005	<i>ditto</i>		642	*			<i>ditto</i> . The provisions of Article 9, paragraph 3 shall apply. ³



Cod in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2006	NDF. By-catches of cod in fisheries targeting other species should be kept at the lowest possible level. Efforts should be made to reduce current levels of bycatch.	SC Rep. 2005, p. 14.	355	*			<i>ditto</i>
2007	<i>ditto</i>		677	*	3NO Cod Conservation Plan and Rebuilding Strategy	FC Doc. 07/8; Article 9, 2009 NCEM	<i>ditto</i> . The provisions of Article 9, paragraph 1b shall apply. ³
2008	NDF. By-catches of cod in fisheries targeting other species should be kept at the lowest possible level. Efforts should be made to reduce current levels of bycatch.	SC Rep. 2007, p. 30.	654	*	<i>ditto</i>		<i>ditto</i> . The provisions of Article 11, paragraph 1b shall apply. ³
2009	<i>ditto</i>		581	*	<i>ditto</i>		Footnote 9: The provisions of Article 12, paragraph 1.b) of the NCEM shall apply. ³
	On a range of possible management measures to ensure bycatch of cod is kept at the lowest possible level: A re-distribution of fishing effort targeting yellowtail could reduce the cod bycatch by 85%.	SC Rep. 2008, p. 34-35					
2010	NDF. By-catches of cod in fisheries targeting other species should be kept at the lowest possible level. Efforts should be made to reduce current levels of bycatch.	SC Rep. 2007, p. 30.			<i>ditto</i>		
	On bycatch reduction measures: trawl gear modifications including modified front sections, separator panels, rigid grids, mesh size, among others.	SCR 09/23, pp. 22-25.					



Cod in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2011	NDF in 2011-2013. By-catches of cod in fisheries targeting other species should be kept at the lowest possible level and restricted to unavoidable bycatch in fisheries directed for other species.	SC Rep. 2010, p.28-30			<i>ditto</i>		

*Ban on fishing in force.

¹Vessels of a Contracting Party shall limit their incidental catch to a maximum of 2500 kg or 10%, whichever is the greater, for each species listed in Schedule I for which no quota has been allocated in that division to that Contracting Party.

²Masters shall not conduct directed fisheries for species for which incidental catch limits apply.

³ In cases where a ban on fishing is in force or an "Others" quota has been fully utilized, incidental catches of the species concerned may not exceed 1,250 kg or 5%, whichever is greater.

⁴ The percentages are calculated as the percentage, by weight, for each species of the total catch retained on board. Catches of shrimp shall not be included in the calculation of bycatch levels of ground fish species.



American Plaice in Division 3LNO							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			48569				
1980			49086	47000			
1981	TAC is 55 000 t	SC Rep. 1979-80, p.64 , 81-82	50158	55000			
1982	<i>ditto</i>	SC Rep. 1981, p. 24 , 41-42	50337	55000			
1983	<i>ditto</i>	SC Rep. 1982, p. 8 , 25-26	37720	55000			
1984	<i>ditto</i>	SC Rep. 1983, p. 21 , 44-45	36063	55000			
1985	TAC is 49 000 t	SC Rep. 1984, p. 22 , 51-53	48081	49000			
1986	TAC is 55 000 t	SC Rep. 1985, p. 34 , 65-68	57449	55000			
1987	48 000 t in 1987 would correspond to fishing at $F_{0.1}$	SC Rep. 1985, p. 28-29 , 64-67	53457	48000			
1988	the advised TAC at $F_{0.1}$ is 33 000 t	SC Rep. 1987, p. 25-26 , 56-64	38928	40000			
1989	$F_{0.1} = 32\ 000$, $F_{87} = 60\ 000$	SC Rep. 1988, p. 12-14 , 53-61 , 92	41206	30300			
1990	$F_{0.1} = 0.26$ predicted catch 24 900 t.	SC Rep. 1989, p. 24 , 77-86	24006	24900			
1991	$F_{0.1} = 0.27$ predicted catch 25 800 t.	SC Rep. 1990, p. 24 , 72-81	25503	25800			
1992	Catches for 1992 should not exceed current TAC of 25 800 t.	SC Rep. 1991, p. 20 , 68-69	10870	25800	Minimum commercial code size 40 cm.	FC Doc. 91/14	



American Plaice in Division 3LNO							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1993	Fishing mortality must be reduced in 1993 to allow the 1985 and 1986 year-classes to contribute to the SSB. The $F_{0.1}$ catches derived from both calibration analyses are 10 500 (L/S) and 14 500 (ADAPT). Given the low SSB and preliminary results from the 1992 survey, indicating a further decline, it may be advisable to accept the lower of the $F_{0.1}$ estimates.	SC Rep. 1992, p. 56 , 102-111	7916	10500			
1994	Given the extremely low stock size in 1992, concerns about SSB, and expectations of very poor recruitment, STACFIS recommended that the catch in 1994 be kept at the lowest possible level, and should not exceed 4 800 t.	SC Rep. 1993, p. 13 , 77-88	560	4800			Considering the advice contained in the SC Rpt and having regard to the poor state of the Cod in Divisions 3NO; American plaice in Divisions 3LNO and 3M; Witch flounder in Div 3NO and Yellowtail flounder in 3LNO, no directed fishery shall be carried out under the TACs agreed for each of these stocks, which are suspended. The provisions of Part I, Section A.4b) of the NCEM shall apply. ³
1995	No fishing on American plaice in Div. 3LNO in 1995	SC Rep. 1994, p. 32 , 86-91	548	*			No directed fishing. Bycatch provisions apply. ³
1996	No fishing on American plaice in Div. 3LNO in 1996. By-catches should be reduced to the lowest possible level.	SC Rep. 1995, p. 20 , 84-90	875	*			No directed fishing. Bycatch provisions apply. ³
1997	An approach consistent with that taken in 1995, should be adopted until the various indices can be better evaluated. No fishing on American plaice in Div. 3LNO in 1997.	SC Rep. 1996, p. 19 , 80-85	1365	*			No directed fishing. Bycatch provisions apply. ³
1998	No fishing on American plaice in Div. 3LNO in 1998.	SC Rep. 1997, p. 23 , 96-100	1560	*			No directed fishing. Bycatch provisions apply. ³
1999	No fishing on American plaice in Div. 3LNO in 1999.	SC Rep. 1998, p. 27 , 83-88	2436	*			No directed fishing. Bycatch provisions apply. ³



American Plaice in Division 3LNO							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2000	No directed fishing on American plaice in Div. 3LNO in years 2000 and 2001. By-catches should be kept at the lowest possible level	SC Rep. 1999, p. 48 , 137-143	2694	*			No directed fishing. Bycatch provisions apply. ¹
2001	no basis to change advice	SC Rep. 2000, p. 120-122	3467	*			No directed fishing. Bycatch provisions apply. ¹
2002	NDF. Bycatches kept to the lowest possible level.	SC Rep. 2001, p 25	3169	*			No directed fishing. Bycatch provisions apply. ¹
2003	<i>ditto</i>	SC Rep. 2002, p 25	3669	*			No directed fishing. Bycatch provisions apply. ¹
2004	NDF. Bycatches kept to the lowest possible level and restricted to unavoidable bycatch in fisheries directing for other species. Efforts should be made to reduce current levels of bycatch.	SC Rep. 2002/2003, p. 165	2658	*			No directed fishing. Bycatch provisions apply. ³
2005	<i>ditto</i>		2355	*			No directed fishing. Bycatch provisions apply. ³
2006	NDF. Bycatches kept to the lowest possible level and restricted to unavoidable bycatch in fisheries directing for other species. Efforts should be made to reduce current levels of bycatch.	SC Rep. 2005, p. 16	889	*			No directed fishing. Bycatch provisions apply. ³
2007	<i>ditto</i>		1454	*			No directed fishing. Bycatch provisions apply. ³
2008	NDF. Bycatches kept to the lowest possible level and restricted to unavoidable bycatch in fisheries directing for other species. Efforts should be made to reduce current levels of bycatch.	SC Rep. 2007, p. 19.	1874	*			No directed fishing. Bycatch provisions apply. ³



American Plaice in Division 3LNO							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2009	<i>ditto</i>		1771	*			Ban on fishing in force. Footnote 23: .. The following bycatch provisions for American plaice only in the 3LNO shall apply: CPs fishing for yellowtail flounder allocated under the NAFO allocation table will be restricted to an overall Am. plaice bycatch harvest limit equal to 13% of their total yellowtail fishery as calculated in accordance with Article 12.1. c) ⁴ . For 2010, the by-catch percentage will increase to 15% unless a SC projection indicates that this rate is likely to undermine stock recovery or cause unreasonable delay in reaching B_{lim} , in which case the increase may be subject to a reassessment by the Fisheries Commission.
2010	NDF. Bycatches kept to the lowest possible level and restricted to unavoidable bycatch in fisheries directing for other species.	SC Rep. 2009, p. 12-14					Ban on fishing in force. Footnote 23: .. The following bycatch provisions for American plaice only in the 3LNO shall apply: CPs fishing for yellowtail flounder allocated under the NAFO allocation table will be restricted to an overall Am. plaice bycatch harvest limit equal to 13% of their total yellowtail fishery as calculated in accordance with Article 12.1. c) ⁴ . For 2010, the by-catch percentage will increase to 15% unless a SC projection indicates that this rate is likely to undermine stock recovery or cause unreasonable delay in reaching B_{lim} , in which case the increase may be subject to a reassessment by the Fisheries Commission.



American Plaice in Division 3LNO							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2011	<i>ditto</i>	SC Rep. 2010, p. 22-24.		*	Interim Div. 3LNO American plaice Conservation Plan and Rebuilding Strategy.	FC Doc.. 10/13	Ban on fishing in force. Footnote 21: .. The following bycatch provisions for American plaice only in the 3LNO shall apply: CPs fishing for yellowtail flounder allocated under the NAFO allocation table will be restricted to an overall Am. plaice bycatch harvest limit equal to 13% of their total yellowtail fishery as calculated in accordance with Article 12.1. c)4. For 2010, the by-catch percentage will increase to 15% unless a SC projection indicates that this rate is likely to undermine stock recovery or cause unreasonable delay in reaching Blim, in which case the increase may be subject to a reassessment by the Fisheries Commission.

*Ban on fishing in force.

¹Vessels of a Contracting Party shall limit their incidental catch to a maximum of 2500 kg or 10%, whichever is the greater, for each species listed in Schedule I for which no quota has been allocated in that division to that Contracting Party.

²Masters shall not conduct directed fisheries for species for which incidental catch limits apply.

³ In cases where a ban on fishing is in force or an "Others" quota has been fully utilized, incidental catches of the species concerned may not exceed 1, 250 kg or 5%, whichever is greater.

⁴ The percentages are calculated as the percentage, by weight, for each species of the total catch retained on board. Catches of shrimp shall not be included in the calculation of bycatch levels of ground fish species



American Plaice in Division 3M							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			796				
1980			1185	2000			
1981	TAC remains at 2 000 t.	SC Rep. 1979-80, p.64 , 81	632	2000			
1982	<i>ditto</i>	SC Rep. 1981, p. 24 , 41	1072	2000			
1983	<i>ditto</i>	SC Rep. 1982, p. 8 , 25	1889	2000			
1984	<i>ditto</i>	SC Rep. 1983, p. 21 , 44	1302	2000			
1985	<i>ditto</i>	SC Rep. 1984, p. 22 , 51	1720	2000			
1986	<i>ditto</i>	SC Rep. 1985, p. 34 , 65	3754	2000			
1987	<i>ditto</i>	SC Rep. 1986, p. 28-29 , 63-64	5607	2000			
1988	<i>ditto</i>	SC Rep. 1987, p. 25-27 , 55-56	2861	2000			
1989	<i>ditto</i>	SC Rep. 1988, p. 12-14 , 52-53	3894	2000			
1990	<i>ditto</i>	SC Rep. 1989, p. 23 , 76-77	790	2000			
1991	2 000 t approximates the $F_{0.1}$ level	SC Rep. 1990, p. 20 , 71	2082	2000			
1992	A TAC of 2 000 t is advised which approximates to the $F_{0.1}$ level based on EEC survey estimates	SC Rep. 1991, p. 20 , 68-69	765	2000	Minimum commercial code size 40 cm.	FC Doc. 91/14	
1993	TAC remain at 2 000 t.	SC Rep. 1992, p. 55 , 100-102	705	2000			



American Plaice in Division 3M						
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures	
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions
1994	Catch should not exceed 1 000 t. This corresponds to the expected by-catches in non-directed fisheries.	SC Rep. 1993, p. 12 , 74-77	254	1000		Considering the advice contained in the SC Rpt and having regard to the poor state of the Cod in Divisions 3NO; American plaice in Divisions 3LNO and 3M; Witch flounder in Div 3NO and Yellowtail flounder in 3LNO, no directed fishery shall be carried out under the TACs agreed for each of these stocks, which are suspended. The provisions of Part I, Section A.4b) of the NCEM shall apply. ³
1995	Catch should not exceed 1 000 t.	SC Rep. 1994, p. 32 , 82-85	243	*		No directed fishing. Bycatch provisions apply. ³
1996	NDF. By-catches should be reduced to the lowest possible level.	SC Rep. 1995, p. 21 , 90-93	142	*		No directed fishing. Bycatch provisions apply. ³
1997	NDF. By-catches should be reduced to the lowest possible level.	SC Rep. 1996, p. 20 , 85-87	108	*		No directed fishing. Bycatch provisions apply. ³
1998	NDF. By-catches should be reduced to the lowest possible level.	SC Rep. 1997, p. 23 , 87-90-	188	*		No directed fishing. Bycatch provisions apply. ³
	... no basis to reopen the fishery	SC Rep. 1997, p. 32				
1999	NDF. By-catches should be kept at the lowest possible level.	SC Rep. 1998, p. 28 , 88-91	243	*		No directed fishing. Bycatch provisions apply. ³
2000	NDF. By-catch should be kept at the lowest possible level.	SC Rep. 1999, p. 45 , 123-128	252	*		No directed fishing. Bycatch provisions apply. ¹
2001	NDF. By-catch should be kept at the lowest possible level.	SC Rep. 2000, p. 27 , 110-114	268	*		No directed fishing. Bycatch provisions apply. ¹
2002	<i>ditto</i>		157	*		No directed fishing. Bycatch provisions apply. ¹
2003	NDF. Bycatch should be kept at the lowest possible level.	SC Rep. 2002, p. 18	130	*		No directed fishing. Bycatch provisions apply. ¹
2004	<i>ditto</i>		108	*		No directed fishing. Bycatch provisions apply. ³
2005	NDF. Bycatch should be kept at the lowest possible level.	SC Rep. 2004, p. 14	84	*		No directed fishing. Bycatch provisions apply. ³



American Plaice in Division 3M							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2006	<i>ditto</i>		83	*			No directed fishing. Bycatch provisions apply. ³
2007	NDF. Bycatch should be kept at the lowest possible level.	SC Rep. 2006, p. 13	78	*			No directed fishing. Bycatch provisions apply. ³
2008	<i>ditto</i>		57	*			No directed fishing. Bycatch provisions apply. ³
2009	NDF. Bycatch should be kept at the lowest possible level.	SC Rep. 2008, p. 23	87	*			No directed fishing. Bycatch provisions apply. ³
2010	<i>ditto</i>			*			No directed fishing. Bycatch provisions apply. ³
2011	<i>ditto</i>			*			No directed fishing. Bycatch provisions apply. ³

*Ban on fishing in force.

¹Vessels of a Contracting Party shall limit their incidental catch to a maximum of 2500 kg or 10%, whichever is the greater, for each species listed in Schedule I for which no quota has been allocated in that division to that Contracting Party.

²Masters shall not conduct directed fisheries for species for which incidental catch limits apply.

³ In cases where a ban on fishing is in force or an "Others" quota has been fully utilized, incidental catches of the species concerned may not exceed 1,250 kg or 5%, whichever is greater.

⁴ The percentages are calculated as the percentage, by weight, for each species of the total catch retained on board. Catches of shrimp shall not be included in the calculation of bycatch levels of ground fish species.



Witch Flounder in Division 3L							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to witch flounder in Div 2J, 3K and 3L)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			882				
1980			286				
1981	Biomass estimates have been fairly stable over last 4 years when catches averaged 8 000 t annually. STACFIS therefore advises that a TAC of 8 000 t (for Div. 2J+3KL) for 1981 would probably not affect the stability of the stock.	SC Rep. 1979-80, p.64 , 82	648				
1982			634				
1983			476				
1984			658				
1985			845				
1986			3184				
1987			2234				
1988			957				
1989			914				
1990			1411				
1991			1558				
1992			1442				
1993			194				
1994			129				
1995			769				
1996	On the review of the status of the witch flounder in Div. 2J+3KL and to provide estimates of the current size of the stock together with a description of recent trends: <i>fishery data be made available to June 1997 meeting.</i>	SC Rep. 1996, p. 148	1367				
1997	see above		846				



Witch Flounder in Division 3L							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to witch flounder in Div 2J, 3K and 3L)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1998	SC advises that from a biological perspective this stock should be treated as a single unit throughout the entire range of Div. 2J and 3KL and managed accordingly. The SC noted that this stock has been under moratorium in the Canadian zone since 1994 but has been unregulated in the NRA.	SC Rep. 1997, p. 33	432				
1999	no fishing for witch flounder in Div. 2J + 3KL.	SC Rep. 1998, p. 42	358				
2000	The SC advises that there should be no fishing for witch flounder in Div. 2J and 3KL in 2000. Given the current state of the stock, the SC does not anticipate any marked improvement in the fishable part of the population over the next several years.	SC Rep. 1999, p. 54 , 132-137	449				
2001		SC Rep. 2000, Part A (Jun 2000), p. 162- 163	575				
2002	NDF to allow for stock rebuilding. Bycatches in fisheries targeting other should be kept at the lowest possible level.	SC Rep.2001, p 28.	442				
2003	<i>ditto</i>		437				
2004	NDF to allow for stock rebuilding. Bycatches in fisheries targeting other should be kept at the lowest possible level.	SC Rep. 2002/2003, p. 166	279	*			No directed fishing. Bycatch provisions apply. ³
2005	<i>ditto</i>		166	*			No directed fishing. Bycatch provisions apply. ³
2006	NDF to allow for stock rebuilding. Bycatches in fisheries targeting other should be kept at the lowest possible level.		24	*			No directed fishing. Bycatch provisions apply. ³
2007	<i>ditto</i>	SC Rep. 2005, p. 17	46	*			No directed fishing. Bycatch provisions apply. ³



Witch Flounder in Division 3L							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to witch flounder in Div 2J, 3K and 3L)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2008	NDF to allow for stock rebuilding. Bycatches in fisheries targeting other should be kept at the lowest possible level.	SC Rep. 2007, p. 31	74	*			No directed fishing. Bycatch provisions apply. ³
2009	<i>ditto</i>		66	*			No directed fishing. Bycatch provisions apply. ³
2010	<i>ditto</i>						
2011	NDF in the years 2011 to 2013 in Div. 2J+3KL to allow for stock rebuilding.						No directed fishing. Bycatch provisions apply. ³

*Ban on fishing in force.

¹Vessels of a Contracting Party shall limit their incidental catch to a maximum of 2500 kg or 10%, whichever is the greater, for each species listed in Schedule I for which no quota has been allocated in that division to that Contracting Party.

²Masters shall not conduct directed fisheries for species for which incidental catch limits apply.

³ In cases where a ban on fishing is in force or an "Others" quota has been fully utilized, incidental catches of the species concerned may not exceed 1, 250 kg or 5%, whichever is greater.

⁴ The percentages are calculated as the percentage, by weight, for each species of the total catch retained on board. Catches of shrimp shall not be included in the calculation of bycatch levels of ground fish species.



Witch Flounder in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			3077				
1980			2420	7000			
1981	The recent decline in catch-per-unit effort implies declining abundance, and therefore advises that the TAC for 1981 should not exceed 5 000 t.	SC Rep. 1979-80, p.64, 82	2425	5000			
1982	in view of the apparent stability of recent catch levels, STACFIS advises that the TAC of 5 000 t should remain in effect.	SC Rep. 1981,p. 24 , 42	3732	5000			
1983	no change (5 000 t)	SC Rep. 1982, p. 8 , 26-27	3621	5000			
1984	<i>ditto</i>	SC Rep. 1983, p. 21 , 45.	2809	5000			
1985	<i>ditto</i>	SC Rep. 1984, p. 22 , 53-54	8771	5000			
1986	<i>ditto</i>	SC Rep. 1985, p. 34 , 68	9131	5000			
1987	STACFIS was not in a position to advise any change in the TAC from the 5 000 t level in effect since 1985. STACFIS expressed concern, however, about the great increase in catch in 1985 and felt that the stock would unlikely sustain such catch levels without a decline in stock abundance.	SC Rep. 1986, p. 28-29 , 67-68	7596	5000			
1988	not able to advise a change in the TAC from the 5000 t level	SC Rep. 1987, p. 25-27, 64	6538	5000			
1989	<i>ditto</i>	SC Rep. 1988, p. 12-14, 61-62	3688	5000			



Witch Flounder in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1990	Data insufficient to firmly advise any change in TAC. STACFIS reiterated its concern about increasing catch levels in recent years, particularly in Div. 3N, and considered that the stock would unlikely sustain such catch levels without a decline in stock abundance	SC Rep. 1989, p. 26 , 86-87	4210	5000			
1991	TAC of 5 000 t to remain in effect. STACFIS reiterated its concern about the high catch levels in the mid-1980s, particularly in Div. 3N, and considered that the recent declining trend in catch levels may be a reflection of a reduced stock size.	SC Rep. 1990, p. 22 , 81-82	3777	5000			
1992	TAC of 5 000 t should remain in effect.	SC Rep. 1991, p. 22 , 74-76	4961	5000	Minimum commercial code size 40 cm.	FC Doc. 91/14	
1993	<i>ditto</i>	SC Rep. 1992, p. 57 , 111-113	4604	5000			
1994	Catch not to exceed 3 000 t	SC Rep. 1993, p. 14 , 88-91	266	3000			Considering the advice contained in the SC Rpt and having regard to the poor state of the Cod in Divisions 3NO; American plaice in Divisions 3LNO and 3M; Witch flounder in Div 3NO and Yellowtail flounder in 3LNO, no directed fishery shall be carried out under the TACs agreed for each of these stocks, which are suspended. The provisions of Part I, Section A.4b) of the NCEM shall apply. ¹
1995	No fishing on witch flounder in Div. 3N and 3O, to allow rebuilding to former levels.	SC Rep. 1994, p. 34 , 91-93	278	*			No directed fishing. Bycatch provisions apply. ³
1996	<i>ditto</i> . By-catches be reduced to the lowest possible level.	SC Rep. 1995, p. 22 , 93-95	310	*			No directed fishing. Bycatch provisions apply. ³
1997	<i>ditto</i>	SC Rep. 1996, p. 21 , 87-89	515	*			No directed fishing. Bycatch provisions apply. ³



Witch Flounder in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1998	<i>ditto</i>	SC Rep. 1997, p. 24 , 103-106	620	*			No directed fishing. Bycatch provisions apply. ³
1999	<i>ditto</i>	SC Rep. 1998, p. 29 , 91-93	861	*			No directed fishing. Bycatch provisions apply. ³
2000	<i>ditto</i>	SC Rep. 1999, p. 46 , 151-153	719	*			No directed fishing. Bycatch provisions apply. ¹
2001	NDF. Bycatches in fisheries targeting other species should be kept at the lowest possible level.	SC Rep. 2000, p. 28	677	*			No directed fishing. Bycatch provisions apply. ¹
2002	<i>ditto</i>		738	*			No directed fishing. Bycatch provisions apply. ¹
2003	<i>ditto</i>	SC Rep. 2002, p. 20	907	*			No directed fishing. Bycatch provisions apply. ¹
2004	<i>ditto</i>		558	*			No directed fishing. Bycatch provisions apply. ³
2005	<i>ditto</i>	SC Rep. 2004, p. 16	289	*			No directed fishing. Bycatch provisions apply. ³
2006	<i>ditto</i>		228	*			No directed fishing. Bycatch provisions apply. ³
2007	<i>ditto</i>	SC Rep. 2006, p. 15	234	*			No directed fishing. Bycatch provisions apply. ³
2008	<i>ditto</i>		235	*			No directed fishing. Bycatch provisions apply. ³
2009	<i>ditto</i>	SC Rep. 2008, p. 22.	278	*			No directed fishing. Bycatch provisions apply. ³
2010	<i>ditto</i>						No directed fishing. Bycatch provisions apply. ³
2011	<i>ditto</i>						No directed fishing. Bycatch provisions apply. ³

*Ban on fishing in force.

¹Vessels of a Contracting Party shall limit their incidental catch to a maximum of 2500 kg or 10%, whichever is the greater, for each species listed in Schedule I for which no quota has been allocated in that division to that Contracting Party.



Witch Flounder in Division 3NO						
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures	
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions

²Masters shall not conduct directed fisheries for species for which incidental catch limits apply.

³ In cases where a ban on fishing is in force or an "Others" quota has been fully utilized, incidental catches of the species concerned may not exceed 1,250 kg or 5%, whichever is greater.

⁴ The percentages are calculated as the percentage, by weight, for each species of the total catch retained on board. Catches of shrimp shall not be included in the calculation of bycatch levels of ground fish species.



Capelin in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to capelin in 3LNO)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979				10000 (Div. 3LNO)			Reserved for Canadian inshore fishery in Div. 3L.
1980	Biomass estimates from acoustic surveys in 1979 indicated that this stock is still substantially below historical levels. The bulk of the spawning stock in 1980 will consist of 1976 and 1977 year-classes which are known to be weak.... The Council advises that Div. 3N and 3O should be closed to a capelin fishery in 1980	Sci. Rep. 1979-80, p.39 , 51		(deferred)			
1981	deferred to a meeting in early 1981	SC Rep. 1979-80,, p.64 , 87		30000 (Div. 3LNO)			Reserved for Canadian inshore fishery in Div. 3L.
	The Council noted the continued depressed state of the spawning stock in Div. 3NO and advises that there should be no directed fishery for capelin in these divisions in 1981, in order to allow a further increase in the spawning stock in Div. 3N and to protect this stock during its migration through Div. 3O to Div. 3N.	SC Rep. 1981, p.8-9 , 17-18					
1982	deferred	SC Rep. 1981, p. 24 , 46		30000 (Div. 3LNO)			Reserved for Canadian inshore fishery in Div. 3L.
1983	no fishery in Div. 3NO.	SC Rep. 1982, p. 8 , 33- 35		0 (Div. 3LNO)			
1984	no catch is advised in Div. 3NO.	SC Rep. 1983, p. 22 , 52-54		0 (Div. 3LNO)			
1985	<i>ditto</i>	SC Rep. 1984, p. 22 , 58-60	3	0 (Div. 3LNO)			
1986	no catch is advised but a complete review and analysis of available data be presented at the June 1986 meeting.	SC Rep. 1985, p. 34 , 74-77		0 (Div. 3LNO)			



Capelin in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to capelin in 3LNO)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1987	It now appears that this stock has recovered enough to permit a small commercial fishery, and STACFIS advised that a catch of 10 000 t from Div. 3NO would not be detrimental to the stock.	SC Rep. 1986, p. 28-29 , 74-77	807	10000 (Div. 3LNO)			
1988	10 000 tons would not be detrimental	SC Rep. 1987, p. 25-27 , 73-	7227	15000 (Div. 3LNO)			
1989	STACFIS advises that the 10% target removals be based on the average biomass indicating a catch of 28 000 t in 1989.	SC Rep. 1988, p. 12-14 , 73-74	9496	28000 (Div. 3LNO)			
1990	An exploitation rate of 10% of the mature biomass would indicate a catch of 30 000 t in 1990	SC Rep. 1989, p. 34 , 101-102	24630	30000 (Div. 3LNO)			
1991	An exploitation rate of 10% of mature biomass would indicate a catch of 30 000 t in 1991	SC Rep. 1990, p. 29 , 94-95	118	30000 (Div. 3LNO)			
1992	No basis on which to change the previous advice of 30 000 t. (SC later considered that this may exceed 10% exploitation rate.)	SC Rep. 1991, p. 28 , 88-90	65	30000 (Div. 3LNO)			
	STACFIS noted that its advice in June 1991 on Div. 3NO capelin was heavily dependent on the prognoses of recruiting year-classes based largely on 0-group surveys. This prognosis for Div. 3NO may be too optimistic based on the uncertainty surrounding recruiting year-classes and STACFIS recommended that the status of capelin in Div. 3NO also be considered at the Special Meeting early on 1992.	SC Rep. 1991, p. 131					
1993	no directed fishery be allowed in Div. 3NO.	SC Rep. 1992, p. 64 , 130-131 , 140-141	3	0 (Div. 3LNO)			



Capelin in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to capelin in 3LNO)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1994	<i>ditto</i>	SC Rep. 1993, p. 20 , 109-111		no fishing (Div. 3LNO)			
1995	<i>ditto</i>	SC Rep. 1994, p. 147		* (Div. 3LNO)			No directed fishing. Bycatch provisions apply. ³
1996	<i>ditto</i>	SC Rep. 1995, p. 25 , 116-117		* (Div. 3LNO)			No directed fishing. Bycatch provisions apply. ³
1997	no advice possible.	SC Rep. 1996, p. 23 , 110-111		* (Div. 3LNO)			No directed fishing. Bycatch provisions apply. ³
1998	no advice possible.	SC Rep. 1997, p. 27 , 110-111		* (Div. 3LNO)			No directed fishing. Bycatch provisions apply. ³
1999	no advice possible.	SC Rep. 1998, p. 31 , 98-99		* (Div. 3LNO)			No directed fishing. Bycatch provisions apply. ³
2000				* (Div. 3LNO)			No directed fishing. Bycatch provisions apply. ¹
2001				*			No directed fishing. Bycatch provisions apply. ¹
2002	no advice possible.	SC Rep. 2001, p 19		*			No directed fishing. Bycatch provisions apply. ¹
2003	NDF in Div. 3NO. SC noted that NAFO recognizes the role that capelin play in the Northwest Atlantic ecosystem as a very important prey species for fish, marine mammals and seabirds.	SC Rep. 2002, p.15		*			No directed fishing. Bycatch provisions apply. ¹
2004	NDF in Div. 3NO.	SC Rep. 2002/2003, p. 171		*			No directed fishing. Bycatch provisions apply. ³
2005	<i>ditto</i>			*			No directed fishing. Bycatch provisions apply. ³
2006	NDF.	SC Rep. 2005, p. 24		*			No directed fishing. Bycatch provisions apply. ³



Capelin in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to capelin in 3LNO)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2007	<i>ditto</i>			*	Div. 3NO Cod Conservation Plan and Rebuilding Strategy -- NDF on capelin until 2012 to allow stock recovery of Cod in Div. 3NO.	Article 9, 2009 NCEM	No directed fishing. Bycatch provisions apply. ³
2008	NDF.	SC Rep. 2007, p. 24		*			No directed fishing. Bycatch provisions apply. ³
2009	<i>ditto</i>			*			No directed fishing. Bycatch provisions apply. ³
2010	NDF.	SC Rep. 2009, p. 23		*			No directed fishing. Bycatch provisions apply. ³
2011	<i>ditto</i>			*			No directed fishing. Bycatch provisions apply. ³

*Ban on fishing in force.

¹Vessels of a Contracting Party shall limit their incidental catch to a maximum of 2500 kg or 10%, whichever is the greater, for each species listed in Schedule I for which no quota has been allocated in that division to that Contracting Party.

²Masters shall not conduct directed fisheries for species for which incidental catch limits apply.

³ In cases where a ban on fishing is in force or an "Others" quota has been fully utilized, incidental catches of the species concerned may not exceed 1, 250 kg or 5%, whichever is greater.

⁴ The percentages are calculated as the percentage, by weight, for each species of the total catch retained on board. Catches of shrimp shall not be included in the calculation of bycatch levels of ground fish species.



Shrimps in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATL ANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to capelin in 3LNO)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979							
1980							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							
1992							
1993							
1994			45		NDF in Div. 3LNO.	FC Doc. 93/10	
1995							
1996			4				
1997							
1998							
2000	if there is to be consideration of any shrimp fishery in Div. 3L, it be restricted to Div. 3L due to low amounts of shrimp in Div. 3NO, and the closer proximity of areas where shrimp have been found to the very important nursery areas of Div. 3NO.	SC Rep. 1999, p. 207-215 and 216	17	6000 (in 3L)			



Shrimps in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATL ANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to shrimp in Div 3LNO)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
	the development of any fishery in the Div. 3L area take place in a gradual manner with conservative catch limits imposed and maintained for a number of years in order to monitor stock response						
	any fishery should be closely monitored through 100% observer coverage with adequate collection of data to allow for scientific evaluation of the fishery						
	if there is a shrimp fishery in Div. 3L catches be restricted to no more than 6 000 t for a number of years until the response of the resource to this catch level can be evaluated.						
	fishing effort be distributed proportional to the distribution of biomass						
2001	Based on these data, SC recommended that the shrimp fishery in Div. be restricted to Div. 3L due to low amounts of shrimp in Div. 3NO, and the closer proximity of areas where shrimp have been found to the very important nursery areas of groundfish in Div. 3NO. As indicated previously, a cautious approach to development of the fishery in this area was recommended and fishing should be restricted to Div. 3L. SC reiterated its recommendation that for the shrimp fishing effort be distributed proportional to the distribution of biomass.	SC Rep. 2000, p. 236-241	29	6000 t (in Div. 3L)			
2002	Fishing restricted to Div. 3L and TAC of 6 000 t. Use of sorting grate with a maximum bar spacing of 22 mm be mandatory.	SC Rep. 2001, p. 261		6000 t (in Div. 3L)			



Shrimps in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATL ANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to capelin in 3LNO)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2003	TAC should not exceed 13 000 t. Fishing restricted to Div. 3L. 22 mm sorting grate mandatory.	SC Rep. 2002, p. 238	5	SA13K (in Div. 3L)	All CPs shall ensure that their vessels shall not conduct a directed fishery for shrimp in Divisions 3NO in 2003.	NCEM 2003, Part I.H.	
2004	<i>ditto</i>			*, (SA 1 Div. 3K in Div. 3L)			Ban on fishing in force [in Div. 3NO] - The [bycatch] provisions shall apply.
2005			2	*, (SA 1 Div. 3K in Div. 3L)			Ban on fishing in force [in Div. 3NO] - The [bycatch] provisions shall apply.
2006	TAC should not exceed 22 000 t. Fishing restricted to Div. 3L. 22 mm sorting grate mandatory.	SC Rep. 2004, p. 216		*, (22K in Div. 3L)			Ban on fishing in force [in Div. 3NO] - The [bycatch] provisions shall apply.
2007	TAC should not exceed 22 000 t. Fishing restricted to Div. 3L. 22 mm sorting grate mandatory.	SC Rep. 2005, p. 220	20	*, (22K in Div. 3L)			Ban on fishing in force [in Div. 3NO] - The [bycatch] provisions shall apply.
2008	TAC should not exceed 25000 t (at Exploitation index of 13.6%). Fishing restricted to Div. 3L. 22 mm sorting grate mandatory.	SC Rep. 2007, p. 214		*, (25K in Div. 3L)			Ban on fishing in force [in Div. 3NO] - The [bycatch] provisions shall apply.
2009	<i>ditto</i>			*, (30K in Div. 3L)			Ban on fishing in force [in Div. 3NO] - The [bycatch] provisions shall apply.
2010	Option 1: Exploitation rate at 15%. This equates to 30 000 t TAC	SC Rep. 2008, p. 255		*, (30K in Div. 3L)			



Shrimps in Division 3NO							
Year	Scientific Advice		Catch in mt (source: STATL ANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice (applicable to shrimp in Div 3LNO)	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
	Option 2: An adaptive management approach for a number of years to explore how resilient the stock is to changes in exploitation rate. An incremental change in the exploitation rate of 1% would equate to a change of 2 000 t in catch.						
2011	SC considers TAC options at 14% exploitation rate or higher to be associated with a relatively high risk of continued stock decline. At 14% exploitation rate, the catch level is at 17 000t [Note: Advice is for shrimp at Div. 3LNO. Fishing is confined to Div. 3L].	SC Rep. 2010, p. 267-268		*			Ban on fishing in force. The provisions of Article 12, paragraph 1.b) shall apply

*Ban on fishing in force.

¹Vessels of a Contracting Party shall limit their incidental catch to a maximum of 2500 kg or 10%, whichever is the greater, for each species listed in Schedule I for which no quota has been allocated in that division to that Contracting Party.

²Masters shall not conduct directed fisheries for species for which incidental catch limits apply.

³ In cases where a ban on fishing is in force or an "Others" quota has been fully utilized, incidental catches of the species concerned may not exceed 1, 250 kg or 5%, whichever is greater.

⁴ The percentages are calculated as the percentage, by weight, for each species of the total catch retained on board. Catches of shrimp shall not be included in the calculation of bycatch levels of ground fish species.



Shrimps in Div. 3M							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	Total Fishing Days. Source: Effort Allocation Scheme Letters and Quota Tables.	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979							
1980							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							
1992							
1993				25398			
1994	The by-catch of small redfish was considered as a potential for significantly impacting the redfish resource in this area. STACFIS recommended that, effective immediately, sorting grates be mandatory in shrimp operations on Flemish Cap as a means of minimizing the by-catch of redfish and other fish species.	NAFO SC Rep. 1993, p. 154	22315		Minimum mesh size 40 mm and sorting grids required.	FC Doc. 93/10	
1995	It is still unclear whether or not a sustainable shrimp fishery is possible on Flemish Cap. ... Clearly, any fishery cannot be maintained at current effort levels and a reduced annual effort is required to afford some protection for younger animals at a lower stock size	NAFO SC Rep. 1994, p. 146	34051				



Shrimps in Div. 3M							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	Total Fishing Days. Source: Effort Allocation Scheme Letters and Quota Tables.	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1996	... the current exploitation pattern is imprudent. In order to improve the exploitation pattern, the fishing mortality on male shrimp must be minimized. In practice, with regard to the male year-classes which were the main target of the 1995 fishery, this implies a closure in 1996.	NAFO SC Rep. 1995, p. 146	46324	9197	Effort Scheme instead of TAC, as a conservation measure beginning 1996.	FC Doc. 95/21 Rev.	
1997	... A significant reduction in fishing intensity is necessary to arrest the apparent continued decline in the female component of the stock and to conserve males. Therefore a fishery is permitted in 1997, catches should be kept at the lowest possible level.	NAFO SC Rep. 1996, p. 147	25006	10492			
1998	... A significant reduction in fishing intensity is necessary to arrest the apparent continued decline in the female component of the stock and to conserve males. Therefore a fishery is permitted in 1998, catches should be at the lowest possible level.	NAFO SC Rep. 1997, p. 182-183	30035	10492			
1999	The average catch reported during the apparent period of stability was about 30 000 t, and the Scientific Council recommends that the catch in 1999 should not exceed 30 000 t	NAFO SC Rep. 1998, p. 162	43144	10455			
2000	The Council noted there was no change in advice for the year 2000, and that the advice presented for 1999 would stand.	NAFO SC Rep. 1999, p. 215	50471	10555			
2000	Based on current information on biomass and expected recruitment, Scientific Council maintains its advice for 2000.	NAFO SC Rep. 1999, p. 254					
2001	Given the current stock biomass and assuming that the 1997 year-class recruiting to the 2001 fishery will be of average strength, the SC advises that catches in 2001 should not exceed 30 000 t.	NAFO SC Rep. 1999, p. 254-255	54830	9463			



Shrimps in Div. 3M							
Management Year	Scientific Advice		Catch in mt (source: STATLAN T)	Total Fishing Days. Source: Effort Allocation Scheme Letters and Quota Tables.	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2001	Considering that the stock appears to have sustained an average catch of more than 40 000 tons in 1999-2000 and that there are concerns regarding recruitment, SC advises a reduction in catch in 2001 to the previously advised TAC of 30 000 t.		NAFO SC Rep. 2000, p. 231-232				
2002	Based on the reduced recruitment expected from the 1997 and 1998 year-classes, SC anticipates that a further reduction in catches in 2002 will be warranted, particularly if catches in 2001 exceed 30 000 t. SC was not able to advise on a specific catch level for 2002 and recommends that the advice for 2002 be re-evaluated by SC in November 2001.		NAFO SC Rep. 2000, p. 231-232	48836	10442		
2002	The stock appears to have sustained an average annual catch of about 45 000 t since 1998 with no appreciable effect on stock biomass. Considering the re-evaluation of the strength of the 1997 year-class in the current assessment to average or above average and that it is expected to be the main contributor to the catch biomass in 2002, the SC advises a catch of 45 000 t for 2002.		NAFO SC Rep. 2001, p. 259-260				
2003	Based on the observed weakness of the 1998 year-class SC advises that a catch of 45 000 t in 2003 may result in a reduction in stock size. SC therefore recommends that the advice for 2003 be evaluated its 2002 November meeting when more information on strength of the 1998 year-class and total stock biomass is available.		NAFO SC Rep. 2001, p. 259-260	62761	10555		
2003	The SC advises a catch of 45 000 t for 2003 and 2004.		NAFO SC Rep. 2002, p. 235-236				
2004	The SC advises a catch of 45 000 t for 2003 and 2004. Advice for thee for the 2004 fishery will be reviewed at the September 2003 SC Meeting, when results from the 2003 summer surveys will be available.		NAFO SC Rep. 2002, p. 235-236	45842	10555		
2004	SC reviewed the updated information available for Div. 3M shrimp. Based on this review, SC concluded that there is no basis to change its advice for 2004		NAFO SC Rep. 2002/2003 (Suppl.), p. 391				
2005	The SC advises a catch of 45 000 t for 2005.		NAFO SC Rep. 2002/2003	27651	10555		



Shrimps in Div. 3M							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	Total Fishing Days. Source: Effort Allocation Scheme Letters and Quota Tables.	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
		(Suppl.), p. 425-426					
2005	SC concluded there was no basis for change in the 2005 advice for this stock.	NAFO SC Rep. 2004, p. 181-182					
2006	The SC advises a catch of 45 000 t for 2006.	NAFO SC Rep. 2005, p. 213-214	15191	10555			
2006	SC concluded that there was no basis for change in the 2006 advice for this stock.	NAFO SC Rep. 2005, p. 198					
2007	The stock appears to have sustained an average annual catch of about 48 000 t since 1998 with no detectable effect on stock biomass. The SC advises a catch of 48 000 t for 2007.	NAFO SC Rep. 2005, p. 217-218	17642	10555			
2007	SC concluded that there was no basis for change in the 2007 advice for this stock.	NAFO SC Rep. 2006. p. 187					
2008	The previously recommended annual; catch of 48 000 t may not be sustainable over the next few years due to the prospect of poor recruitment of the 2003 and 2004 year-classes. SC is not in a position to recommend a specific TAC for 2008 until the summer 2007 survey has been completed. However it is tentatively advised that the exploitation level for 2008 should not exceed 2005-6 levels.	NAFO SC Rep. 2006. p. 215	13395	10555			
2008	SC confirms its advice from the 2006 assessment, however, it is not in the position to be more precise. Status of this stock will be revised during the October SC assessment meeting. At that time SC experts to be able to provide advice on this stock for 2008 and 2009.	NAFO SC Rep. 2008, p. 194					
2009	The SC noted there is insufficient information on which to base predictions of annual yield potential for this resource and is unable to advise on a specific TAC for 2008 and 2009. ... However, in light of the poor prospect for this stock, the SC recommends that exploitation level for 2008 and 2009 should not exceed the 2005 and 2006 levels. This corresponds to catches in the range of 17 000 to 32 000 t.	NAFO SC Rep. 2007, p. 211-212	5376	10555			



Shrimps in Div. 3M							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	Total Fishing Days. Source: Effort Allocation Scheme Letters and Quota Tables.	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2009	SC reiterates its recommendation that the TAC for 2009 be maintained at the 2008 level (25 000 t) in order to monitor the impact on the stock.	NAFO SC Rep. 2008, p. 229					
2009-2010	In light of poor prospects for this stock, the SC recommended that exploitation level for 2009 and 2010 should not exceed the exploitation levels that have occurred since 2005. Catches over the period 2005-2007 were in the range of 18 000 to 27 000 t.	NAFO SC Rep. 2008, p. 251-252					
2010	The stock is now well below B_{lim} i.e. has now entered the collapse zone defined by the NAFO PA framework, and recruitment prospects remain poor. Therefore, SC recommended that the fishing mortality be set as close to zero as possible.	NAFO SC Rep. 2009, p. 201-202		5278			
2010	SC reiterates its September 2009 recommendation for 2010 that the fishing mortality be set as close to zero as possible	NAFO SC Rep. 2009, p. 228-229					
2011	SC recommended that fishing mortality in 2011 be set as close to zero as possible.	NAFO SC Rep. 2009, p. 228-229		0			When the scientific advice estimates that the stock shows signs of recovery, the fishery shall be re-opened in accordance with the effort allocation key in place for this fishery at the time of the closure.
2011	To favour future recruitment, SC reiterates its October 2009 recommendation for 2011 that the fishing mortality be set as close to zero as possible.	NAFO SC Rep., 2010, p.265-266					
2012	The 2009-2010 survey biomass index indicates the stock is around B_{lim} proxy and remains in a state of impaired recruitment. To favor future recruitment, SC recommends for 2012 that the fishing mortality be set as close to zero as possible.	NAFO SC Rep., p. 265-266					



NON-MORATORIA STOCK INFORMATION

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Cod in Division 3M							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			29710				
1980			10457	10280			Footnote 1: Allowable catch of cod in Div 3M by CPs are for the period 1 January - 30 April 1980 only.
1981	(Advice deferred to meeting early in 1981)	SC Rep. 1979-1980 p 77	1 873	12750			
1982	The low level of catch projected for 1981 at $F_{0.1}$ level is a clear indication that the stock is severely depleted...The Committee (STACFIS)...recommends that the SC at its June 1981 Meeting consider specific measures to ensure maximum spawning potential for the cod stock.	SC Rep. 1981 p 12	12753	12405			Footnote 1: The TAC will not be increased beyond 12 405 mt until the Scientific Council advises that age 3+ mean biomass has reached a level approximately equal to one-half the mean age 3+ equilibrium biomass associated with fishing at F-max and assuming long term average recruitment levels.
1983	No directed fishery.	SC Rep. 1982 p 22	10205	12405			<i>ditto</i>
1984	STACFIS noted that the fishable stock remains in a depleted state, and reiterates the advice given at the June 1982 Meeting that there be no exploitation of the stock.	SC Rep. 1983, pp. 38-39	12702	12965			Footnote 5: The TAC will not be increased beyond 12 965 mt until the Scientific Council advises that age 3+ mean biomass has reached a level approximately equal to one-half the mean age 3+ equilibrium biomass associated with fishing at F-max and assuming long term average recruitment levels.
1985	STACFIS noted that the fishable stock remains in a depleted state, and reiterates, for 1985, the advice given in 1982 and 1983 that there be no exploitation of the stock.	SC Rep. 1984, pp. 40-41	13675	12965			<i>ditto</i>



Cod in Division 3M							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1986	STACFIS noted the decision of the FC not to increase the TAC beyond 12 965 t until a target biomass (age 3+) has been reached, and considered the target biomass, as defined by the FC, to be in the order of 85 000 t. It is clear that the target biomass will not be reached in 1986. It can most speedily be met by a cessation of fishing in order to allow young fish, including the 1982 year-class, to contribute fully to the fishable biomass and the spawning stock.	SC Rep. 1985, pp. 53-54	14518	12965			<i>ditto</i>
1987	A cessation of fishing would be the most appropriate management action.	SC Rep. 1986, pp. 51-52	10632	12965			<i>ditto</i>
1988	A cessation of fishing would be the most appropriate management action.	SC Rep. 1987, pp. 42-43	1718	0			
1989	Moratorium on fishing should continue to protect the remaining spawning stock biomass and to allow the present year-classes, particularly the 1986 year-class, to contribute towards the most rapid rebuilding of the biomass form its present low level.	SC Rep. 1988, pp. 30-31	917	0			
1990	The moratorium on fishing for cod on the Flemish Cap should continue to allow the stock to rebuild.	SC Rep. 1989, p 16, 55-56	2762	0			
1991	A cessation of fishing for cod on the Flemish Cap to allow the spawning stock to rebuild. Special comment: <i>Catch, effort and sampling data of the fleets fishing for cod on the Flemish Cap should be collected and made available to STACFIS.</i>	SC Rep. 1990, p 14, 52-53.	8989	12965			-



Cod in Division 3M							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1992	If cessation of fishing cannot be achieved, no action can be advised that would result in an improvement of the stock. Special comment: <i>Catch, effort and sampling data of the fleets fishing for cod on the Flemish Cap should be collected and made available to STACFIS.</i>	SC Rep. 1991, p 14, 52-54.	7226	12965	Minimum commercial code size 40 cm.	FC Doc. 91/14	-
1993	Previous attempts to impose a moratorium failed. STACFIS recommends that during 1993 the catch must be maintained at as low a level as possible and every effort be taken to prevent the catch of small fish. Exploitation of the expected relatively strong 1990 year-class must not occur until 1994 at the earliest when their mean length will be greater than 40 cm.	SC Rep. 1992, p 49, 79-82.	8316	12965			-
1994	No Directed Fishery (NDF), to allow stock recovery.	SC Rep. 1993, p 7, 56-59.	6885	11000			-
1995	NDF, to allow stock recovery.	SC Rep. 1994, p 26, 64-67.	3221	11000			-
1996	A rational exploited cod fishery on Flemish Cap requires both a reduction of catches on young fish, and a reduction of the fishing effort level from its current high level. For 1996 the catch should be limited to the vicinity of the current TAC.	SC Rep. 1995, p 16, 64-67.	2305	11000			-
1997	NDF. Bycatch of cod on Flemish Cap should be kept at a low level.	SC Rep. 1996, p 15, 57-60.	1457	6000			-
1998	NDF. Bycatch of cod on Flemish Cap should be kept at a low level.	SC Rep. 1997, p 17, 81-84.	456	2000			-
1999	NDF. Bycatch of cod on Flemish Cap should be kept at a low level.	SC Rep. 1998, p 22, 67-70.	2	*			* No directed fishing - The provisions of Part 1, Section A.5b of NAFO CEM shall apply. ¹
2000	NDF. Bycatch of cod on Flemish Cap should be kept at a low level.	SC Rep. 1999, p 44, 113-118.	36	*			* No directed fishing - The provisions of Part 1, Section A.5a ² and c ³ of NAFO NCEM shall apply.



Cod in Division 3M							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2001	NDF. Bycatch of cod on Flemish Cap should be kept at a low level.	SC Rep. 2000, p 25, 99-104.	56	*			<i>ditto</i>
2002	<i>ditto</i>	SC Rep. 2001, p 35, 116-117	33	*			<i>ditto</i>
2003	NDF. Bycatch of cod on Flemish Cap should be kept at a low level.	SC Rep. 2002, pp. 16-17, 109-114.	16	*			<i>ditto</i>
2004	<i>ditto</i>	SC Rep. 2002-2003, p 180	23	*			<i>ditto. In the 2004 overhaul of the NCEM, Part I, Section A.5c became Article 9 paragraph 3. 3</i>
2005	NDF. Bycatch of cod on Flemish Cap should be kept at a low level.	SC Rep. 2004, p 13, 105-108.	26	*			<i>ditto. The provisions of Article 9, paragraph 3 shall apply. 3</i>
2006	<i>ditto</i>	SC Rep. 2005, p 31	123	*			<i>ditto</i>
2007	NDF. Bycatch of cod on Flemish Cap should be kept at a low level.	SC Rep. 2006, p 12, 112-115.	125	*			<i>ditto. The provisions of Article 9, paragraph 1b shall apply. 3</i>
2008	<i>ditto</i>	SC Rep. 2007, p 36	398	*			<i>ditto. The provisions of Article 11, paragraph 1b shall apply. 3</i>
2009	In order to allow spawning biomass to grow above B_{lim} with a high probability in the near future, SC recommends that no directed fishery. Bycatch of cod on Flemish Cap should be kept at a low level.	SC Rep. 2008, p 26, 142-152.	1172	*			Footnote 22: Contracting Parties fishing for other species in Division 3M will be restricted to a cod by-catch limit of 10% by haul and an 8% on landings.
2010	There is sufficient evidence to allow a small amount of directed fishing on this stock. Considering the relatively low number of mature individuals currently in stock, SC advises that a fishing mortality for 2010 not to exceed F_{2008} will allow further recovery of the stock.	SC Rep. 2009 p. 19-20		5500			The allocation key of this stock is based on the 1998 Quota Table. In 1999, a moratorium on cod in Division 3M was declared.
	As a redfish fishery has developed in recent years in depths shallower than 350 m, and as cod is a bycatch species in that fishery, it may be expected that fishing mortality levels will increase during the next few years and may cause stock decline.						



Cod in Division 3M							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2011	Considering the relatively low number of mature individuals currently in the stock, SC advises that a TAC lower than 10 000 t (approximate catch at $F_{0.1}$), appears not to be damaging the SSB that is currently well above B_{lim} .	SC Rep. 2010, 25-27		10000			<i>ditto</i>

*Ban on fishing in force.

¹Vessels of a Contracting Party shall limit their incidental catch to a maximum of 2500 kg or 10%, whichever is the greater, for each species listed in Schedule I for which no quota has been allocated in that division to that Contracting Party.

²Masters shall not conduct directed fisheries for species for which incidental catch limits apply.

³ In cases where a ban on fishing is in force or an "Others" quota has been fully utilized, incidental catches of the species concerned may not exceed 1, 250 kg or 5%, whichever is greater.

⁴ The percentages are calculated as the percentage, by weight, for each species of the total catch retained on board. Catches of shrimp shall not be included in the calculation of bycatch levels of ground fish species.



Redfish in Division 3LN							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			14067				
1980			16030	25000			
1981	TAC 25 000 t	SC Rep. 1979-80, p.64 , 78-79	24280	25000			
1982	Considering the apparent abundance of young redfish in Div. 3N and the wide range of the length frequencies which might be interpreted as indications that exploitation of the stock is with acceptable levels, but also noting the inadequacy of the available data, the Committee advises that the TAC for 1982 should remain at 25 000 t.	SC Rep. 1981, p. 24 , 39-40	21547	25000			
1983	TAC 25 000 t	SC Rep. 1982, p. 8 , 24	19747	25000			
1984	<i>ditto</i>	SC Rep. 1983, p. 21 , 42	14761	25000			
1985	<i>ditto</i>	SC Rep. 1984, p. 22 , 48-49	20557	25000			
1986	<i>ditto</i>	SC Rep. 1985, p. 34 , 61-62	42805	25000			
1987	<i>ditto</i>	SC Rep. 1986, p. 58- 59	71291	25000			
1988	<i>ditto</i>	SC Rep. 1987, p. 25- 27 , 50-51	45366	25000			
1989	<i>ditto</i>	SC Rep. 1988, p. 12- 14 , 47-49	31848	25000			
1990	<i>ditto</i>	SC Rep. 1989, p. 21 , 64-67	24755	25000			
1991	TAC for 1991 be 14 000 t corresponding to $F_{0.1}$ level applied to the 1987-89 average biomass estimate from USSR acoustic survey	SC Rep. 1990, p. 18 , 63-66	21615	14000			



Redfish in Division 3LN							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1992	TAC is 14 000 t	SC Rep. 1991, p. 18 , 61-64	16502	14000	Minimum commercial code size 40 cm.	FC Doc. 91/14	
1993	Catches to be reduced and total catch not to exceed 14 0000 t	SC Rep. 1992, p. 53 , 93-96	14974	14000			
1994	<i>ditto</i>	SC Rep. 1993, p. 11 , 71-73	2682	14000			
1995	<i>ditto</i>	SC Rep. 1994, p. 30 , 75-78	1989	14000			
1996	<i>ditto</i>	SC Rep. 1995, p. 18 , 77-80	451	11000			
1997	Although there is concern for the future given the general lack of good recruitment, the Council has no basis to change its advice from 1995. Total catches of redfish in Div. 3LN should not exceed 14 000 t in 1997.	SC Rep. 1996, p. 17 , 71-75	630	11000			
1998	No directed fishing and by-catches be kept at the current low level. The Council noted that the scientists of the Russian delegation did not agree with this recommendation.	SC Rep. 1997, p. 19- 20 , 87-90	899	*			No directed fishing. Bycatch provisions apply. ³
1999	No directed fishing for redfish in Div. 3LN, and by-catches be at the lowest possible level.	SC Rep. 1998, p. 24 , 74-77	1836	*			No directed fishing. Bycatch provisions apply. ³
2000	No directed fishing for redfish in Div. 3LN, and by-catches of redfish in fisheries targeting other species should be kept at the lowest possible level.	SC Rep. 1999, p. 52 , 132-137	1476	*			No directed fishing. Bycatch provisions apply. ¹
2001	<i>ditto</i>	SC Rep. 2000, p. 117-119	1132	*			No directed fishing. Bycatch provisions apply. ¹
2002	NDF. Bycatches of redfish in fisheries targeting other species should be kept at the lowest possible level.	SC Rep. 2001, p. 24	978	*			No directed fishing. Bycatch provisions apply. ¹



Redfish in Division 3LN							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2003	<i>ditto</i>		1025	*			No directed fishing. Bycatch provisions apply. ¹
2004	NDF. Bycatches of redfish in fisheries targeting other species should be kept at the lowest possible level.	SC Rep. 2002/2003, p. 170	680	*			No directed fishing. Bycatch provisions apply. ³
2005	<i>ditto</i>		424	*			No directed fishing. Bycatch provisions apply. ³
2006	NDF.	SC Rep. 2005, p. 21	214	*			No directed fishing. Bycatch provisions apply. ³
2007	<i>ditto</i>		197	*			No directed fishing. Bycatch provisions apply. ³
2008	NDF.	SC Rep. 2007, p. 26	403	*	Article 9 1a) shall also apply in 2008. ¹	FC Doc. 7/6	No directed fishing. Bycatch provisions apply. ³
2009	Total catch should not exceed 3500 t. The total catch should include any directed catches and bycatches.	SC Rep. 2008, p. 28.	254	*			No directed fishing. Footnote 25:By-catch of Redfish Div. 3LN in other fisheries is limited to 10%.
2010	Total catch should not exceed 3500 t. The total catch should include any directed catches and bycatches.	SC Rep. 2009, p.6			3500		Footnote 24. The allocation key of this stock is based on the 1997 Quota Table. In 1998, a moratorium on redfish in Division 3LN was declared.
2011	SC recommends that an appropriate TAC for 2011-2012 could be 1/6 of F_{msy} corresponding to a catch level of 6000 t.	SC Rep. p. 31-32			6000		<i>ditto</i>

*Ban on fishing in force.

¹Vessels of a Contracting Party shall limit their incidental catch to a maximum of 2500 kg or 10%, whichever is the greater, for each species listed in Schedule I for which no quota has been allocated in that division to that Contracting Party.

²Masters shall not conduct directed fisheries for species for which incidental catch limits apply.

³In cases where a ban on fishing is in force or an "Others" quota has been fully utilized, incidental catches of the species concerned may not exceed 1, 250 kg or 5%, whichever is greater.

⁴The percentages are calculated as the percentage, by weight, for each species of the total catch retained on board. Catches of shrimp shall not be included in the calculation of bycatch levels of ground fish species.



Redfish in Division 3M							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			20074				
1980			15967	20000			
1981	STACFIS considers the stock to be in relatively good condition and therefore advised that the TAC for 1981 should remain at 20 000 t.	NAFO SC Rep. 1979-80, p. 79	13891	20000			
1982	Commercial catch rates in recent years have remained relatively stable, and Canadian research abundance indices fro 1978-81 were generally stable except for 1979. Relatively good year-classes are evident in both the Canadian and USSR survey data. Older redfish are well represented in the age frequencies, which indicate that the stock has not been over-exploited at the present level of catch, and STACFIS accordingly advises that the TAC for 1982 should remain at 20 000 t.	NAFO SC Rep., 1981, p. 39	14684	20000			
1983	The Committee (STACFIS) noted the inadequacy of the data available for this stock and the resultant difficulties in carrying out an assessment. Although year-classes of the early 1970's will contribute significantly to the fishery over the next few years, it was noted that subsequent year-classes up to that of 1979 appear very weak. STACFIS, reiterating the problems associated with this assessment, advises that the TAC for 1993 remain at 20 000 t.	NAFO SC Rep. 1882, p. 24	19527	20000			



Redfish in Division 3M							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source : Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1984	Although the catch rate for 1981 was the highest of the available time series, some concern was expressed about the poor recruitment to the stock during the latter half of the 1970s. because the apparently successful 1980 and 1981 year-classes will not recruit to the fishery until the latter half of the 1980's, the catch rate is expected to decline before then as the year-classes of the early 1970s pass through the fishery. The Committee (STACFIS), while noting the importance of obtaining reliable catch and effort data in the ensuing years, advises that the TAC for 1984 remain at 20 000 t.	NAFO SC Rep. 1983, p. 42	20 228	20 000			
1985	Because the stock size is expected to decline until at least the late 1980s and the present TAC was set at a long-term average level, STACFIS advises that the 1985 TAC remain at the present level of 20 000 t.	NAFO SC Rep. 1984, p. 48	20 282	20 000			
1986	STACFIS advises that the TAC for 1986 should remain at 20 000 t.	NAFO SC Rep. 1985, p. 61	28 873	20 000			
1987	Because the CPUE has been relatively constant since 1977 and catches have been stable around 20 000 t, STACFIS therefore advises that the TAC for 1987 should remain at 20 000 t.	NAFO SC Rep. 1986, p. 58	44 411	20 000			
1988	STACFIS advises that the TAC for 1988 should remain at 20 000 tons	NAFO SC Rep. 1987, p. 50	23 189	20 000			
1989	STACFIS has no basis to advise a change from the present TAC of 20 000 t	NAFO SC Rep. 1988, P. 46	47 697	20 000			



Redfish in Division 3M							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1990	Higher TAC may be warranted but should be set well below levels of 50 000 and 85 000 t corresponding to reference $F_{0.1}$ and F_{max} exploitation of the 1988 USSR survey biomass estimate.	NAFO SC Rep. 1989, p. 20	66 887	50 000			
1991	TAC for 1991 be set at 43 000 t, equivalent to $F_{0.1}$ catch of 1987-89 average biomass from combined trawl-acoustic	NAFO SC Rep. 1990, p. 17	41 406	50 000			
1992	TAC for 1992 be set at 35 000 t.	NAFO SC Rep. 1991, p. 17	31470	43 000			
1993	Catches in 1993 should not exceed 20 000 t.	NAFO SC Rep. 1992, p. 52	21611	50 000			
1994	TAC for 1994 be set at 20 000 t.	NAFO SC Rep. 1993, p. 10	9 914	26 000			
1995	Total Catch of redfish in Div. 3M be reduced to 20 000 t for 1995. There continues to be a substantial fishery for shrimp in Div. 3M. The Council expresses its concern on the likely negative impact of these fisheries on future recruitment to the redfish fisheries.	NAFO SC Rep. 1993, p. 29	6 748	26 000			
1996	Catches higher than 20 000 tons in the period 1986 to 1992 were observed simultaneously with a decline in trawlable biomass. It would not be prudent to allow total catches to rise above a level of 20 000 t, unless strong recruitment to the exploitable stock is confirmed. This is the level of catches in the period 1975 to 1985 when stable conditions were observed. Total catches of redfish in Div. 3M should therefore not be allowed to exceed 20 000 t in 1996.	NAFO SC Rep. 1995, p. 19	1 140	26 000			



Redfish in Division 3M							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source : Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1997	Scientific Council recommends that total catches of redfish in Div. 3M not be allowed to exceed 20 000 t in 1997 and by-catch of juvenile redfish in the shrimp fishery be kept at the lowest possible level.	NAFO SC Rep. 1996, p. 18	424	26000			
1998	Scientific Council recommended that the total catches of redfish in Div. 3M not be allowed to exceed 20 000 t in 1998 and by-catch of juvenile redfish in the shrimp fishery should be kept at the lowest possible level.	NAFO SC Rep. 1997, p. 21	972	20000			Each CP shall notify the Executive Secretary bi-weekly of catches taken by its vessels from this stock. The Executive Secretary shall notify without delay all CPs of the date, for this stock, accumulated reported catch taken by vessels of the CPs is estimated to equal 100% of the TAC for that stock. At that date each CP, to which a quota has been allocated or which vessels are engaged in fishing under the "Others" quota, shall prohibit fishing by its vessels for that stock.
1999	Scientific Council recommends a TAC for redfish in Div. 3M in 1999 significantly below (in the order of 50%) the current TAC of 20 000 t.	NAFO SC Rep. 1998, p. 25	795	13000			<i>ditto</i>
2000	The Council was unable to advise on a specific TAC for year 2000, however, in order to maintain relatively low fishing mortalities so as to promote stock recovery, SC recommends that catch for Div. 3M redfish in year 2000 be in the range of 3 000 to 5 000 t.	NAFO SC Rep. 1999, p. 38	3828	5000			<i>ditto</i>
2001	The Council was unable to advise on a specific TAC for the year 2001, however, in order to maintain relatively low fishing mortalities so as to promote stock recovery, SC recommends that catch for Div. 3M redfish in year 2001 be in the range of 3 000-5 000 t.	NAFO SC Rep. 2000, p. 14-15	3396	5000			<i>ditto</i>



Redfish in Division 3M							
Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2002	The Council was unable to advise on a specific TAC for year 2002, however, in order to maintain relatively low fishing mortalities so as to promote stock recovery, SC recommends that catch for Div. 3M redfish in year 2002 be in the range of 3 000 – 5 000 t.	NAFO SC Rep. 2001, p. 8-9	2985	5000			<i>ditto</i>
2003	The Council was unable to advise on a specific TAC for year 2003; however in order to maintain relatively low fishing mortalities so as to promote stock recovery, SC recommends that catch for Div. 3M redfish in year 2003 be in the range of 3 000 - 5 000 t.	NAFO SC Rep. 2002, p. 9-10	1988	5000			<i>ditto</i>
2004	SC was unable to advise on a specific TAC for 2004 and 2005. However, in order to promote stock recovery, SC recommends that catch for Div. 3M redfish in year 2004 and 2005 be in the range of 3 000 - 5 000 t.	NAFO SC Rep. 2002/2003, p.167-168	3125	5000			<i>ditto</i>
2005	Monitor		6417	5000			<i>ditto</i>
2006	In order to maintain relatively low fishing mortalities so as to promote stock recovery, SC recommends that catch for Div. 3M redfish in year 2006 and 2007 be in the range of 3 000-5 000 t.	NAFO SC Rep. 2005, p. 18-19	6319	5000			<i>ditto</i>
2007	Monitor		5592	5000			<i>ditto</i>
2008	In order to maintain low fishing mortalities so as to promote female spawning stock recovery, SC recommended that catch for Div. 3M redfish in year 2008 and 2009 should not exceed 5 000 t.	NAFO SC Rep. 2007, p. 20-21	7923	8500			<i>ditto</i>
2009	Monitor		8659	8500			<i>ditto</i>



Redfish in Division 3M							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source : Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2010	Low fishing mortalities should be maintained so as to promote female spawning stock recovery. SC recommended that catch for all redfish in Div. 3M in 2010 and 2011 should not exceed 8500 t which is in the range of catches in recent years.	NAFO SC Rep. 2009, p. 17-18		10000			<i>ditto</i>
2011	Monitor			10000			<i>ditto</i>



Redfish in Division 30							
Management Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			17737				
1980			17306				
1981			12604				
1982			11360				
1983			7140				
1984			10028				
1985			8210				
1986			10455				
1987			13020				
1988			11292				
1989			11056				
1990			9042				
1991			7561				
1992			13368				
1993			13220				
1994			4628				
1995			2814				
1996			9645				
1997			5112				
1998			13352				
1999			12593				
2000			12790				
2001			22574				
2002	In 2002 Canada submitted requests on the redfish stock in Div. 30, and the Council responded.	NAFO SC Rep. 2002, p. 35-37	19453				



Redfish in Div. 3O							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2003	SC is unable to advise on a specific TAC for 2004 and 2005. The SC noted there is insufficient information on which to base predictions of annual yield potential for this resource. Stock dynamics and recruitment patterns are also poorly understood. Catches have averaged about 13 000 t since 1960 and over the long term, catches at this level do not appear to have been detrimental.	NAFO SC Rep. 2002/2003, p. 172-173	21591				
2004	Monitor		6464				
2005	Monitor		11910	20000			
2006	Catches have averaged about 13 000 t since 1960 and over the long term, catches at this level appear to have been sustainable. ... The SC noted there is insufficient information on which to base predictions of annual yield potential for this resource. ... SC is unable to advise on an appropriate TAC for 2006 and 2007.	NAFO SC Rep. 2005, p. 22-23	11035	20000			
2007	Monitor		7599	20000			
2008	SC is unable to advise on an appropriate TAC for redfish in Div. 3O in 2008, 2009 and 2010	NAFO SC Rep. 2007, p. 27-28	5019	20000			
2009	monitor		6483	20000			
2010	monitor			20000			
2011	SC is unable to advise on an appropriate TAC for 2011, 2012 and 2013	SC Rep.33-34					



YEL 3LNO							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source : Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			18351				
1980			12377	18000			
1981	Based on the assumptions that the 1980 TAC will be fully utilized and that recruitment at age 4 will be average, STACFIS advises that a TAC of 21 000 t in 1981 corresponds to fishing at the $F_{0.1}$ level.	NAFO SC Rep. 1979-80, p. 82	14680	21000			
1982	STACFIS advises that a TAC of 23000 t in 1982 corresponds to fishing at the $F_{0.1}$ level.	NAFO SC Rep. 1981, p. 43	12246	17000			
1983	On the assumptions that the TAC in 1982 will be taken and that recruitment at age 4 in 1982 and 1983 will be at the estimated levels, STACFIS advises that a TAC of 19000 t in 1983 corresponds to fishing at the $F_{0.1}$ level.	NAFO SC Rep. 1982, p. 27	9250	19000			
1984	STACFIS advises that a TAC of 17 000 t in 1984 corresponds to fishing at the $F_{0.1}$ level.	NAFO SC Rep. 1983, p. 46	12562	17000			
1985	In view of the apparent stability of the stock in recent years, STACFIS advises that the TAC for 1985 be set at 15 000 t, which corresponds to the level of the average catch in 1978-82.	NAFO SC Rep. 1984, p. 54	21468	15000			
1986	With all the available information indicating stability of the stock, STACFIS advises that the TAC for 1986 should remain at the current level of 15 000 t.	NAFO SC Rep. 1985, p. 70	22957	15000			
1987	Noting that the increase in the 1985 catch was due to a large increase in fishing effort, and hence fishing mortality, rather than increased stock abundance, and recognizing that most indices point to recent stock size stability, STACFIS advises that the total removals from this stock in 1987 should not exceed the current TAC of 15 000 t.	NAFO SC Rep. 1986, p. 69	16234	15000			



YEL 3LNO							
Management Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source : Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1988	STACFIS noted that the strong 1978 and 1979 year-classes cannot be expected to contribute significantly to catches after 1987 and that recent research surveys do not indicate anything other than average recruitment. STAFIS therefore reiterated that the stock cannot sustain catches around 30 000 tons. With the 1985 and 1986 catches close to this level, and the indices of abundance all showing declines either from 1985 to 1986 or 1986 to 1987, STACFIS advises that the catch from this stock in 1988 should not exceed the current TAC level of 15 000 t.	NAFO SC Rep. 1987, p. 67	15054	15000			
1989	STACFIS reiterates its concern that it may be possible to reduce this stock to very low levels, perhaps even to the level of the early 1960s when catches from this stock were negligible. Considering the magnitude of the decline in the stock size and the very low levels of incoming recruitment, STACFIS advises that the total catch in 1989 should not exceed 5 000 t.	NAFO SC Rep. 1988, p. 65	9166	5000			
1990	5 000 t TAC advised for 1990	NAFO SC Rep. 1989, p. 27	8762	5000			
1991	7 000 t TAC advised for entire stock	NAFO SC Rep. 1990, p. 23	11015	7000			
1992	7 000 t TAC advised for entire stock	NAFO SC Rep. 1991, p. 23	10796	7000			
1993	TAC of 7 000 t for 1993	NAFO SC Rep. 1992, p. 58	6850	7000			



YEL 3LNO							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source : Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1994	TAC of 7 000 t for 1994	NAFO SC Rep. 1993, p. 15	231	7000			Considering the advice contained in the Report of the SC and having regard to the poor state of the stock in Cod in Div 3NO; American plaice in Div 3LNO and 3M; witch flounder in Div 3NO and Yellowtail flounder in Div 3LNO, no directed fishery shall be carried out under the TACs agreed for each of these stocks in 1994, which are suspended. The provisions of Part I, Section A.4b) [the bycatch provisions for stocks under moratorium] of the NCEM apply.
1995	To rebuild this stock as fast as possible, no fishing should be permitted on yellowtail flounder in Div. 3LNO in 1995	NAFO SC Rep. 1994, p. 35	66	*			
1996	There should be no directed fishing of yellowtail flounder in 1996. By-catches should be reduced to the lowest possible level.	NAFO SC Rep. 1995, p. 23-24	233	*			
1997	There should be no directed fishing of yellowtail flounder in 1997. By-catches should be kept at the lowest possible level to allow the stock to rebuild.	NAFO SC Rep. 1996, p. 22	657	*			
1998	The stock should be able to sustain a limited fishery in 1998. ... Scientific Council recommends that the TAC for 1998 not exceed 4 000 t. Because the stock size in Div. 3L is low, the fishery should be confined to the main component of the stock in Div. 3NO.	NAFO SC Rep. 1997, p. 25-26	4386	4000			CPs shall inform the NAFO Secretariat before 1 December 1997 of the measures to be taken to meet the advice of the NAFO Scientific Council. - The [bycatch] provisions of the NCEM shall apply.
1999	Scientific Council recommends that the TAC for 1999 not exceed 6 000 t.	NAFO SC Rep. 1998, p. 30	7024	6000			<i>ditto</i>
2000	Scientific Council recommends the TAC be set at 10 000 t for the year 2000	NAFO SC Rep. 1999, p. 39	10659	10000			<i>ditto</i>
2001	The TAC for the year 2001 should not exceed 13 000 t based on the projection of $F=2/3 F_{msy}$ and an assumed catch of 11 000 t in the year 2000.	NAFO SC Rep. 2000, p. 16-17	13272	13000			<i>ditto</i>



YEL 3LNO						
Management Year	Scientific Advice		Catch in mt (source: STATLAN T)	TAC (mt) Source : Quota Table	Specific Management Measures	
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions
2002	The TAC for yellowtail flounder in Div. 3LNO for the year 2002 should not exceed 13 000 t, based on the projection of $F=2/3 F_{msy}$ and an assumed catch of 14 300 t in the year 2001	NAFO SC Rep. 2001, p. 10-11	10381	13000		<i>ditto</i>
2003	The total catches should not exceed 14 500 t in 2003 and 2004. In providing its advice, SC notes that advice applies to all removals (directed plus by-catch).	NAFO SC Rep. 2002, p. 21-22	13303	14500		<i>ditto</i>
2004	Monitor		13124	14500		<i>ditto</i>
2005	SC recommended that total catches should not exceed 15 000 t in 2005 and 2006.	NAFO SC Rep. 2004, p. 17-18	13911	15000		<i>ditto</i>
2006	Monitor		587	15500		<i>ditto</i>
2007	Total catches should not exceed 15 500 t in 2007 and 2008.	NAFO SC Rep. 2006, p. 16-17	4429	15500		<i>ditto</i>
2008	Monitor		11307	15500		<i>ditto</i>
2009	SC Noted that this stock is well above B_{msy} , and recommended any TAC option up to $85\% F_{msy}$ for 2009 and 2010	NAFO SC Rep. 2008, p. 20-21	5864	17000		CPs fishing for yellowtail flounder allocated under the NAFO allocation table will be restricted to an overall Am. Plaice by-catch harvest limit equal to 13% of their yellowtail fishery as calculated in accordance with Article 12.1.c. For 2010 the bycatch will increase to 15%...
2010	Although biomass is well above B_{msy} , SC does not consider it prudent to fish above $85\% F_{msy}$ because of the uncertainty in the estimation of F_{msy} . SC therefore recommended and TAC option up to $85\% F_{msy}$ for 2010 and 2011	NAFO SC Rep. 2009, p. 15-16		17000		<i>ditto</i>
2011	monitor			17000		<i>ditto</i>

* No directed fishing - bycatch provisions of the NCEM apply.



White hake in Div. 3NO							
Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source : Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			1569				
1980			2618				
1981			1705				
1982			1941				
1983			2896				
1984			4335				
1985			6159				
1986			4605				
1987			8061				
1988			2761				
1989			2009				
1990			2120				
1991			2487				
1992			1666				
1993			1022				
1994			293				
1995			282				
1996			340				
1997			427				
1998			277				
1999			429				
2000			567				
2001			633				
2002			5365				
2003			6158				
2004	SC responded to eight requests for white hake in Div. 3NO	NAFO SC Rep. 2004, p. 24-30	1915				



White hake in Div. 3NO							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2005			964	8500			
2006	Given the intermittent recruitment to this stock, and the change in fisheries between directed and by-catch, it is not possible to advise on an appropriate TAC. However, with lower biomass and poor recruitment after the 1999 year-class, SC advised that catches of white hake in Div. 3NO at the current TAC of 8 500 t are not sustainable.	NAFO SC Rep. 2005, p. 25-26	1203	8500			
2007	Monitor		723	8500			
2008	Given the recent declines in stock biomass indices and the current low recruitment, SC advises that catch of white hake in Div. 3NO, at the current TAC of 8500 t is unrealistic and should not exceed their current level.	NAFO SC Rep. 2007, p. 22-23	884	8500			
2009	Monitor		481	8500			
2010	Catches in Div. 3NO for 2010 and 2011 should not exceed the 2006-2008 average annual catch level of 850 t.	NAFO SC Rep. 2009, p. 21-22		6000			
2011	Monitor			6000			



Skate in Div. 3LNO							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			1039				
1980			1378				
1981			1711				
1982			808				
1983			1281				
1984			2013				
1985			10399				
1986			14329				
1987			18496				
1988			18766				
1989			14243				
1990			14770				
1991			28408				
1992			5137				
1993			6070				
1994			8155				
1995			7324				
1996			6118				
1997			12068				
1998			9514				
1999			11945				
2000			18277				
2001			14861				
2002			11755				
2003			14263				
2004	The FC with the concurrence of the Coastal State requested SC to provide information on thorny skate in Div. 3LNO	NAFO SC Rep. 2002/2003, p. 174-179	11828				



Skate in Div. 3LNO							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2005	SC advised that catches in 2005 and 2006 not exceed 11 000 t.	NAFO SC Rep. 2004, p. 19-20	3538	13500			
2006	Monitor		5504	13500			
2007	SC recommended that for Div. 3LNOPs, catches not exceed 11 000 t in 2007 and 2008	NAFO SC Rep. 2006, p. 18-19	6211	13500			
2008	monitor		5613	13500			
2009	To promote recovery of thorny skates, SC recommended that catches in 2009 and 2010 should not exceed 6 000 t (the average catch during the past three years) in NAFO Divisions 3LNOPs.	NAFO SC Rep. 2008, p. 18-19	5721	13500			
2010	Monitor			12000			
2011	To promote recovery of thorny skate, SC recommends that catches in 2011 and 2012 should not exceed 5 000 t (the average catch during the past three years) in NAFO Div. 3LNO.	SC Rep. p. 35-36		12000			



Greenland halibut in Div 3LMNO							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			8646				
1980			12998				
1981*	The analysis indicated an MSY of 9 000 t and a yield at $2/3 F_{MSY}$ of 8 000 t. Because these values were similar to those of previous assessments, and because there has been an apparent increase in catch-per-unit-effort up to 1977, STACFIS advises that the TAC for 1981 should remain unchanged at 8 000 t.	NAFO SC Rep. 1979-80. p. 85	8984				
1982*	STACFIS advises that the TAC for 1982 should remain at 55 000 t, noting that this TAC should apply only to Div. 2J+3KL. Any increase in the TAC beyond 55 000 t should be related to removals from Div. 2GH.	NAFO SC Rep. 1981, p. 45	4199				
1983*	It was agreed that fishing mortality in 1981 was probably well below the $F_{0.1}$ level, considering the exploitation pattern, levels of removals, and the estimates of minimum biomass. STAFIS there fore advises that the TAC for 1983 should remain at 55 000 , noting that the TAC should apply to Div. 2J, 3K and 3L only.	NAFO SC Rep. 1982, p. 29	4677				
1984*	STACFIS advises that the TAC remain at 55 000 t for 1984 and that this TAC apply only to Div. 2J, 3K and 3L.	NAFO SC Rep. 1983, p. 48	5196				
1985*	In previous assessments of this stock, concern was expressed that competition may occur between inshore gillnet fisherman and offshore trawler fishermen, particularly in Div. 3K. STACFIS advised that any increase in TAC for this stock should be directed to Div. 2G and 2H. However, based upon recent investigations of distribution and relative abundance of the stock component, this concern is no longer justified. STACFIS therefore advises that a TAC of 75 000 t in 1985 for Subarea 2 and Div. 3K and 3L, based on fishing at $F_{0.1} = 0.29$, would be conservative.	NAFO SC Rep. 1984, p. 56	3780				



Greenland halibut in Div 3LMNO							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1986*	After evaluating the available data on the recent low levels of fishery mortality, the presence of strong incoming year-classes and the high estimates of biomass, STACFIS advises that a catch of 100 000 t from Subarea 2 and Div. 3KL in 1996 would not exceed $F_{0.1} = 0.28$.	NAFO SC Rep. 1985, p. 72	2860				
1987*	In view of the low level of exploitation on the entire stock, the evidence of strong recruiting year-classes, and the high level of overall biomass, STACFIS advises that a TAC of about 100 000 tons from Subarea 2 and Div. 3KL in 1987 is unlikely to generate fishing mortality in excess of $F_{0.1}$. STACFIS further advises that the TAC of 100 000 t should be taken not only from the age-groups fished but from the entire age composition of the stock by fishing further north at greater depths.	NAFO SC Rep. 1986, p. 72	6763				
1988*	From the available data, STACFIS was unable to advise a TAC based on fishing at $F_{0.1}$. However, considering the low exploitation level and the high level of estimating biomass, STACFIS advises that a TAC of 100 000 t through Subarea 2 and Div. 3KL in 1988 is unlikely to exceed the fishing mortality level of $F_{0.1}$.	NAFO SC Rep. 1987, p. 68	6324				



Greenland halibut in Div 3LMNO							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1989*	STACFIS expressed concern regarding the declining trends in biomass for most divisions. However it was difficult to evaluate the cause of the apparent declines particularly for areas where little fishing occurs. Considering the available data, particularly the imminent strong recruitment, STACFIS advises the TAC of 100 000 t in effect for 1988 be continued for 1989. STACFIS reiterated that with the present fishing pattern mainly in shallower depths (<500 m) and in the more southerly divisions (particularly in Div. 2J, 3K and 3L), a catch of 100 000 t is unlikely to be achieved. Because older fish (age 10+) are more abundant in depths greater than 700 m on the continental slope and in the more northerly areas (Div. 2G and 2H), part of the advised TAC may be fished there.	NAFO SC Rep. 1988, p. 69	6584				
1990*	Stock biomass estimated in 1987 and 1988 to be about half that estimated in 1984. A TAC of 50 000 t would approximate fishing at $F_{0.1}$	NAFO SC Rep. 1989, p. 29	15123				
1991*	A TAC of 50 000 t would approximate fishing at $F_{0.1}$	NAFO SC Rep. 1990, p. 25	23285				
1992*	A TAC of 50 000 t would approximate fishing at $F_{0.1}$. This TAC should apply to the entire stock, including the fishery in the Regulatory Area in Div. 3LM	NAFO SC Rep. 1991, p. 25	51767				
1993*	Catches should be reduced in 1993 to the level advised (50 000 t), which is for the entire stock, including the portion in the Regulatory Area in Div. 3LM Until more is known of stock structure, precautionary measures to prevent concentration effort on one segment of the stock are should be considered.	NAFO SC Rep. 1992, p. 60	48711				



Greenland halibut in Div 3LMNO							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1994*	STACFIS is unable to advise an appropriate catch level for 1994. The effect on the stock of continued catches in the Regulatory Area at 1990-92 levels is unclear but catches in 1992 were comprised of smaller fish than in 1990 and 1991. Past advice for this stock has been to distribute fishing effort over a wide area is possible.	NAFO SC Rep. 1993, p. 17	48545				
1995**	The effort and catches throughout Subareas 0-3 in 1995 should be reduced compared to recent years. Any catch level in Subareas 2-3 above 40 000 t for 1995 (status quo prediction including the catches on non-Contracting Parties (will not be adequate to restrict the fishery. Therefore, a reduction in effort requires a reduction in catch below that figure.	NAFO SC Rep. 1994, p. 38	12768	27000 (in Areas 2+3)			
1996**	The Council is unable to advise on a specific level of TAC for 1996. However, this TAC should continue to be set at levels well below the catches achieved in the period 1990-94 until it is clear that the fishable stock is increasing.	NAFO SC Rep. 1995, p. 27	14229	20000			
1997**	The Council is unable to advise on a specific level of TAC for 1997. However, this TAC should not exceed the current level until it is clear that the fishable stock is increasing at that catch level. With the substantial reduction in F experienced in 1995 and anticipated in 1996 combined with improved recruitment prospects, this stock should show signs of recovery over the next couple of years.	NAFO SC Rep. 1996, p. 25	14490	20000			
1998**	The Council is unable to advise on a specific level of TAC for 1998. However, the TAC should not exceed the current level until it is clear that the fishable stock is increasing at that catch level.	NAFO SC Rep. 1997, p. 29	16028	20000			
1999**	While the Council is unable to advise on a specific TAC for Greenland halibut in Subarea 2 and Div. 3KLMNO for 1999, an increase in catch from 1996-97 levels (20 000 t) to about 30 000 t should not impede recovery.	NAFO SC Rep. 1998, p. 33	20963	24444			



Greenland halibut in Div 3LMNO							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2000**	The Council is unable to advise on a specific TAC for year 2000 and recommends that a catch in year 2000 of about 30 000 t is likely to allow the stock to continue to increase.	NAFO SC Rep. 1999, p. 43	25486	25935			
2001**	The current assessment is uncertain. ... In light of these uncertainties, SC recommends a stepwise approach to increasing the TAC. For 2001, SC Recommends the catch should not exceed 40 000 t. Further steps to increase the TAC should be considered on re-evaluation of the contribution of the 1994 and 1995 year-classes to the catches in 2000 during the 2001 assessment.	NAFO SC Rep. 2000, p. 22	28256	29640			
2002**	The SC recommends that the catch for 2002 should not exceed the 2001 level of 40 000 t until the contribution of the 1994 and 1995 year classes to the catches in 2001 can be evaluated during the 2002 assessment.	NAFO SC Rep. 2001, p. 16-17	25985	32604			
2003**	Given the current uncertainty as to the contribution of the above-average year-classes to the fishable stock, SC recommends that the catch for 2003 should not increase above the average level of 200 and 2001 (36 000 t) until the fishable biomass has increased.	NAFO SC Rep. 2002, p. 13-14	25230	31122			
2004**	The present view of the stock is considerably more pessimistic than in recent years. All observed indicators are showing persistent declines over the past several years while catches have generally been increasing. Assuming a catch of 30 000 t in 2003 and in order to prevent a further decline in exploitable biomass during 2004, the catch in 2004 should not exceed 16 000 t.	NAFO SC Rep. 2002/2003, p. 158-159	12077	14820	15-year 2+3LKMNO Greenland Halibut Recovery Plan		
2005**	IN 2004 there were no recommendation made. Instead an Evaluation o f the Management Strategy for 2004-2007 was undertaken.	NAFO SC Rep. 2004. p. 10-11	12637	14079			



Greenland halibut in Div 3LMNO							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2006**	Evaluation of the Management Strategy 2005-2007 - SC noted that the 2004 catch of 25 500 t exceeded the 2004 rebuilding plan TAC by 27%. The projected 2008 5+ biomass in the current assessment is 15% lower than that predicted in the 2004 assessment. This discrepancy is consistent with the fact that the 2004 catch exceeded the TAC. SC noted that if the remaining rebuilding plan TACs were exceeded, the prospects for rebuilding would be further diminished.	NAFO SC Rep. 2005, p. 10-11	12806	13709			
2007**	Evaluation of the Management Strategy 2006-2008 - SC noted that the 2004 and 2005 catches of 25 500 and 23 000 t exceeded the rebuilding plan TAC by 27% and 22% respectively. ... SC noted given these results fishing mortality should be reduced to a level not higher than $F_{0.1}$ in order to provide a consistent increase of the 5+ exploitable biomass.	NAFO SC Rep. 2006, p. 8-9	10999	11856			
2008**	Considering the results of the Evaluation of the Management Strategy, and in order to provide a consistent increase of the 5+ exploitable biomass, SC recommended that the fishing mortality should be reduced to a level not higher than $F_{0.1}$, or alternatively, catches over the next 4 years should be reduced by 15% annually from the 2007 TAC (16 000 t).	SC Rep. 2007, p. 11-13	10718	11856	Additional control measures introduced (Article 8, 2008 NCEM)	FC Doc. 7/9	
2009**	To provide a consistent increase of the 5+ exploitable biomass, SC recommended that fishing mortality should be reduced to a level not higher than $F_{0.1}$	SC Rep. 2008, p. 11-17	9265	11856			
2010**	To provide a consistent increase of the 5+ exploitable biomass, SC recommended that fishing mortality should be reduced to a level not higher than $F_{0.1}$	SC Rep. 2009, p. 9-11		11856			
2011	SC recommends that fishing mortality in 2011 be no higher than the $F_{0.1}$ level (median catch of 14 5000 t in 2011)	SC Rep.p.16-21		12734	MSE Approach	FC Doc. 10/12	

* advice and assessment for GHL in SA 2 and Div. 3KL only

** Subarea 2 and Div. 3KLMNO

***TAC in Area 2+3



Squid (<i>Illex</i>) in Subareas 3 & 4							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			162091	120000			The opening date for the squid (<i>Illex</i>) fishery is 1 July.
1980	The Council agreed that the catch associated with a target exploitation rate of 0.4 would, under approximate average conditions of abundance, result in an overall catch of 150 000 t, a level which would not be associated with a serious risk of excessive exploitation	SC Rep., 1979-80, p. 40	69605	(deferred)			<i>ditto</i>
1981	STACFIS continues to support the management regime proposed by the Council at the February 1980 meeting (NAFO SC Rep. 1979-80, p.39-40), and therefore advises that the TAC for 1981 should be maintained at the same level as for 1980 (150 000 t), subject to adjustment on the basis of any significant new information forthcoming from the 1980 fishery. The commencement date for the fishery is 1 July.	SC Rep. 1979-80. p. 87	32862	150000			<i>ditto</i>
1982	There being no significant new information on which a forecast of 1982 abundance might be based, STACFIS continues to support the management regime proposed at the February 1980 Meeting, and therefore advises that the TAC for 1982 should be maintained at 150 000 t, subject to the adjustment on the basis of any significant new information forthcoming from the 1981 fishery,	SC Rep. 1981, p.47	12908	150000			<i>ditto</i>
1983	STACFIS advises that the TAC for 1983 should be maintained at 150 000 t.	SC Rep. 1982, p. 35	421	150000			<i>ditto</i>
1984	STACFIS advises that the TAC for 1984 be maintained at 150 000 t.	SC Rep. 1983, p. 56	715	150000			<i>ditto</i>



Squid (<i>Illex</i>) in Subareas 3 & 4							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1985	STACFIS therefore continues to support the current management regime and advises that the TAC for 1985 be maintained at 150 000 t.	SC Rep. 1984, p. 63	673	150000			<i>ditto</i>
1986	No new information was available for prediction of squid biomass in 1986. Therefore STACFIS has no reason to change its advice from that which was formulated in 1980 and advises that the TAC for 1986 should remain at 150 000 t.	SC Rep. 1985, p. 79	111	150000			<i>ditto</i>
1987	STACFIS advises that the TAC for 1987 should remain at 150 000 t.	SC Rep. 1986, p. 79	1718	150000			<i>ditto</i>
1988	STACFIS advises that the TAC for 1988 should remain at 150 000 t.	SC Rep. 1987, p. 76	846	150000			<i>ditto</i>
1989	No new data were available at this meeting. STACFIS was unable to provide catch projections on squid in Subareas 3 and 4 for 1989.	SC Rep. 1988, p. 74	7327	150000			<i>ditto</i>
1990	No recommendation	SC Rep. 1989, p. 35	10843	150000			<i>ditto</i>
1991	No advice	SC Rep. 1990, p. 30	3227	150000			<i>ditto</i>
1992	No advice possible	SC Rep. 1991, p. 29	1664	150000			<i>ditto</i>
1993	No advice possible	SC Rep. 1992, p. 65	2791	150000			<i>ditto</i>
1994	No advice possible	SC Rep. 1993, p. 21	6032	150000			<i>ditto</i>
1995	No advice possible	SC Rep. 1994, p. 42	1068	150000			<i>ditto</i>
1996	No advice possible	SC Rep. 1995, p. 26	8830	150000			<i>ditto</i>
1997	No advice possible	SC Rep. 1996, p. 24	15758	150000			<i>ditto</i>



Squid (<i>Illex</i>) in Subareas 3 & 4							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1998	No advice possible	SC Rep. 1997, p. 28	1937	150000			<i>ditto</i>
1999	The Scientific Council is unable to advise on a specific level of catch for 1999. However based on available information (including an analysis of the upper range of yields that might be expected under the present low productivity regime), the Council advises that the TAC for 1999 for squid in Subareas 3+4 be set between 19 000 tons and 34 000 t.	SC Rep. 1998, p. 32	310	75000			<i>ditto</i>
2000	The Scientific Council is unable to advise on a specific level of catch for year 2000. However based on available information (including an analysis of the upper range of yields that might be expected under the present low productivity regime), the Council advises that the TAC for year 2000 for short finned squid in Subareas 3+4 be set between 19 000 t and 34 000 t.	SC Rep. 1999, p. 41	365	34000			<i>ditto</i>
2001	The Scientific Council is unable to advise on a specific level of catch for year 2001. However based on available information (including an analysis of the upper range of yields that might be expected under the present low productivity regime), the Council advises that the TAC for year 2001 for short finned squid in Subareas 3+4 be set between 19 000 t and 34 000 t.	SC Rep. 2000, p. 19	65	34000			<i>ditto</i>
2002	The Scientific Council is unable to advise on a specific level of catch for year 2002. However based on available information (including an analysis of the upper range of yields that might be expected under the present low productivity regime), the Council advises that the TAC for year 2002 for short finned squid in Subareas 3+4 be set between 19 000 t and 34 000 t.	SC Rep. 2001, p. 13-14	255	34000			<i>ditto</i>



Squid (<i>Illex</i>) in Subareas 3 & 4							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2003	The Scientific Council is unable to advise on a specific level of catch for year 2003 or 2004. However based on available information (including an analysis of the upper range of yields that might be expected under the present low productivity regime), the Council advises that the TAC for years 2003 and 2004 for short finned squid in Subareas 3+4 be set between 19 000 t and 34 000 t.	SC Rep. 2002, p. 24-25	1134	34000			<i>ditto</i>
2004	Monitor		2540	34000			
2005	The Scientific Council is unable to advise on a specific level of catch for year 2005 or 2006. However based on available information (including an analysis of the upper range of yields that might be expected under the present low productivity regime), the Council advises that the TAC for years 2005 and 2006 for short finned squid in Subareas 3+4 be set between 19 000 t and 34 000 t.	SC Rep. 2004, p. 21-22	533	34000			
2006	Monitor		6918	34000			
2007	Based on available information including an analysis of the upper range of yields that might be expected under the present low productivity regime (19 000-34 000 t), the Council advises that the TAC for 2007 and 2008 be set between 19 000 t and 34 000 t.	SC Rep. 2006. p. 20-21	228	34000			
2008	Monitor		523	34000			
2009	An interim monitoring was completed and found no significant change in the status of this stock and therefore SC advises that the TAC for 2009 be set between 19 000 and 34 000 t.	SC Rep. 2008, p. 29	677	34000			



Squid (<i>Illex</i>) in Subareas 3 & 4							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2010	An interim monitoring was completed and found no significant change in the status of this stock and therefore SC advises that the TAC for 2009 be set between 19 000 and 34 000 t.	SC Rep. 2009, p. 24		34000			
2011	Based on available information including an analysis of the upper range of yields that might be expected under the present low productivity regime (19 000-34 000 t), the Council advises that the TAC for 2011 to 2013 be set between 19 000 t and 34 000 t.	SC Rep. 2010, p. 39-40					



Redfish in 1F2J							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
1979			32845				
1980			17724				
1981			21043				
1982			20308				
1983			17846				
1984			25805				
1985			30981				
1986			27971				
1987			19174				
1988			7592				
1989			3505				
1990			2489				
1991			299				
1992			137				
1993			34				
1994			87				
1995			1372				
1996			22				
1997			131				
1998			42				
1999			219				
2000			11204				



Redfish in 1F2J							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2001			7070	95000			-These quotas are set on the basis of the TAC of 95000 tons established by NEAFC in 2001. Quantities taken in the NEAFC Convention Area shall be deducted from the quotas mentioned. - Each CP shall notify the ES bi-weekly of catches taken by its vessels from this stock in Div. 1F. The ES shall notify without delay all CPs of the date on which, for this stock, accumulated reported catch taken by vessels of the CPs is estimated to equal 15000 tons and then 30000 tons.
2002			18781	95000			<i>ditto</i>



Redfish in 1F2J							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2003			30207	32500			Each CP shall notify the ES bi-weekly of catches taken by its vessels from this stock in Div. 1F. The ES shall notify without delay all CPs of the date on which, for this stock, accumulated reported catch taken by vessels of the CPs is estimated to equal 50% and then 100% .
2004			29356	32500			In case of the NEAFC decision which modify the level of TAC for Oceanic Redfish..., these figures shall be accordingly adjusted.
2005			27841	32500			<i>ditto</i>
2006			20428	20378			<i>ditto</i>
2007			5835	16914			<i>ditto</i>
2008			2156	12516			<i>ditto</i>



Redfish in 1F2J							
Management Year	Scientific Advice		Catch in mt (source: STATLANT)	TAC (mt) Source: Quota Table	Specific Management Measures		
	Recommendation/Advice	Reference: Scientific Council Reports or SCS Doc			Management Measures	Reference: adopted proposals and resolutions	Relevant footnotes in the Quota Table
2009	Pelagic redfish in NAFO SA 1 and SA 2 and adjacent ICES areas V, VI and XIV is not assessed by NAFO SC. ICES receives a request from NEAFC each year to undertake an assessment and it is in the ICES North-western Working Group (NWWG) that the assessment is made. NWWG met during 29 April-5 May 2009 (ICES CM 2009/ACOM:04)	SC Rep. 2009, p. 51	122	12516			<i>ditto</i>
2010	Pelagic redfish in NAFO SA 1 and SA 2 and adjacent ICES areas V, VI and XIV is not assessed by NAFO SC. ICES receives a request from NEAFC each year to undertake an assessment and it is in the ICES North-western Working Group (NWWG) that the assessment is made. NWWG met during 2 April-4 May 2010 (ICES CM 2010/ACOM:07)	SC Rep. 2009, p. 51		12516			<i>ditto</i>
2011	In 2010 NAFO Scientific Council reviewed at its June meeting the ICES 2010 Advice to NEAFC for 2011 and supported the conclusion and advice. The SC recognizes that the catches in the NAFO area will be taken from the shallow pelagic stock, for which no directed fisheries has been advised.	SC Rep. 2010 p. 55.		12516*			<i>ditto</i>

*As of June 2011, TAC = 0 subjected to a confirmation through mail vote.



APPENDIX XI

NAFO PRECAUTIONARY APPROACH FRAMEWORK

([NAFO/FC Doc. 04/18](#) (NAFO, 2004f))

Introduction

This document summarizes the major features of the NAFO Precautionary Approach Framework proposed by the Scientific Council in 2003. A revised framework was developed at the NAFO Scientific Council Workshop on the Precautionary Approach to Fisheries Management during 31 March-4 April 2003 as described in SCS Doc. 03/05 (NAFO, 2003f). The framework proposed at the Workshop was subsequently reviewed at the June and September 2003 Scientific Council meetings and was adopted by Scientific Council after some revisions. The framework includes a more flexible set of management strategies and courses of action as well as reference point definitions that take account of the agreed roles and responsibilities of the Scientific Council and the Fisheries Commission as given in Meeting Proceedings, 1998, Section II (NAFO, 1999a). This is in keeping with a global trend of revision and modification of PA frameworks, with the objectives of increasing the transparency of the methods underlying the frameworks and increasing the negotiation space defined within the frameworks ([Shelton *et al.*, 2003](#)). The framework also addresses many of the concerns of managers contained in the 2002 Report of the Working Group of Technical Experts on the Precautionary Approach as stated in Meeting Proceedings, 2002, Section IV (NAFO, 2003a).

Evaluation of Existing Scientific Council PA Framework

The existing framework (Fig. 1) was developed by the Scientific Council in 1997 and presented in SCS Doc. 97/12 (NAFO, 1997d), and has been discussed in several Joint Scientific Council/Fisheries Commission Meetings. Some progress has been made, for example, in the definition of roles of scientists and managers in the PA process (Table 1).

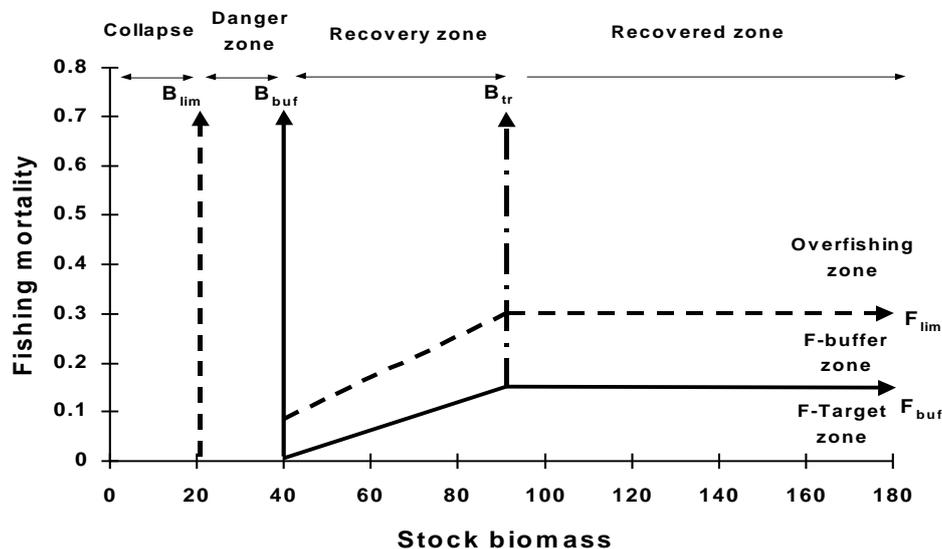


Fig. 1. Schematic depicting the essential features of the Precautionary Approach Framework proposed by the Scientific Council in 1997.



Table 1. Roles of Scientific Council and Fisheries Commission (from [Meeting Proceedings, 1998](#), Section II (NAFO, 1999a).

Scientific Council	Fisheries Commission
<ol style="list-style-type: none"> 1. Determine status of stocks. 2. Classify stock status with respect to biomass/fishing mortality zones. 3. Calculate limit reference points and security margins. 4. Describe and characterize uncertainty associated with current and projected stock status with respect to reference points 5. Conduct risk assessments. 	<ol style="list-style-type: none"> 1. Specify management objectives, select target reference points, and set limit reference points. 2. Specify management strategies (courses of actions) for biomass/fishing mortality zones. 3. Specify time horizons for stock rebuilding and for fishing mortality adjustments to ensure stock recovery and/or avoid stock collapse. 4. Specify acceptable levels of risk to be used in evaluating possible consequences of management actions.

However, the framework was never formally adopted by the Fisheries Commission. Concerns expressed by managers include:

- Prescribed harvest control rules (no fishing) below B_{lim} or B_{buf}
- A fishing mortality limit at F_{msy}
- The perception of a linear decrease in fishing mortality from the biomass target to the biomass buffer
- No consideration of the desirability for stable TACs
- No consideration of multi-species situations

Proposed NAFO Precautionary Approach Framework

The following is the proposed revised NAFO Precautionary Approach Framework developed at the 2003 Scientific Council Workshop on the Precautionary Approach to Fisheries Management as modified by the Council at the June and September 2003 Meetings. For stocks where the Scientific Council can conduct risk analyses, the security margins (F_{buf} and B_{buf}) will be based on the risk levels specified by the Fisheries Commission. For stocks where risk analyses are not possible, the Fisheries Commission will specify the security margins.



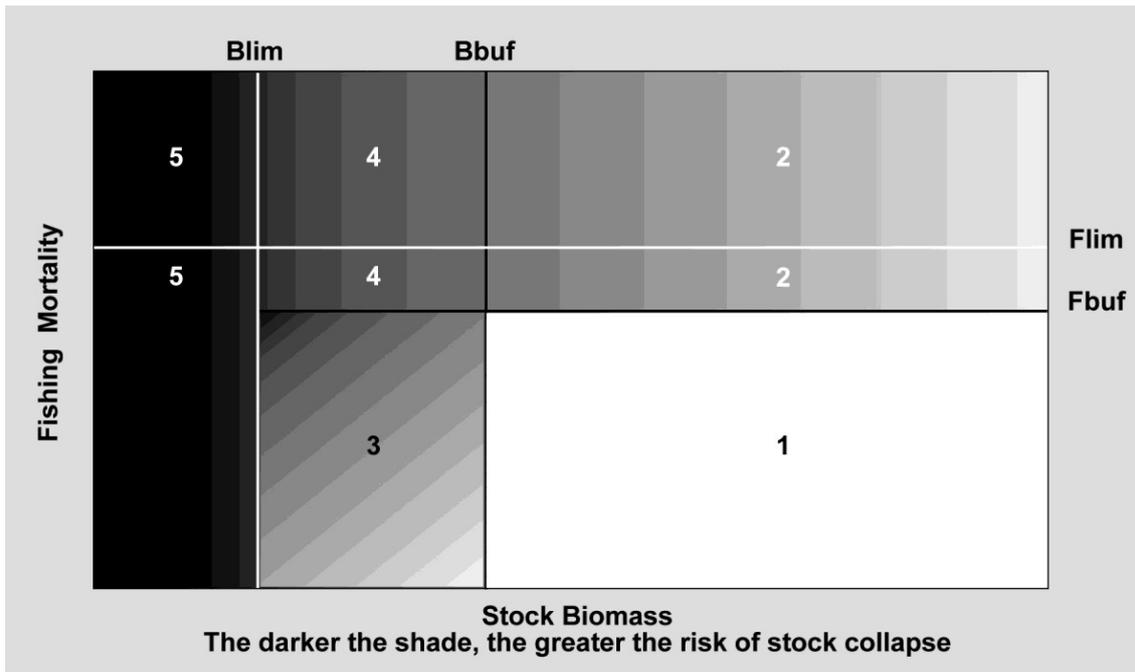


Fig. 2. Schematic depicting a revision to the proposed NAFO PA framework subsequently adopted by NAFO.

Fishing Mortality Reference Points

F_{lim} = A fishing mortality rate that should only have a low probability⁹⁸ of being exceeded. F_{lim} cannot be greater than F_{msy} . If F_{msy} cannot be estimated, then an appropriate surrogate may be used instead.

F_{buf} = A fishing mortality rate below F_{lim} that is required in the absence of analyses of the probability that current or projected fishing mortality exceeds F_{lim} . In the absence of such analyses, F_{buf} should be specified by managers and should satisfy the requirement that there is a low probability⁹⁸ that any fishing mortality rate estimated to be below F_{buf} will actually be above F_{lim} . The more uncertain the stock assessment, the greater the buffer zone should be. In all cases, a buffer is required to signify the need for more restrictive measures.

When the stock is above B_{buf} and fishing mortality is below F_{buf} , a flexible fishing mortality rate will be selected by managers to achieve desired management objectives, subject only to the constraints defined by the limit and buffer reference points. In particular, a target F should be chosen to ensure that there is a low probability⁹⁸ that F exceeds F_{lim} , and a very low probability⁹⁹ that biomass will decline below B_{lim} within the foreseeable future¹⁰⁰.

Stock Biomass Reference Points

B_{lim} = A biomass level, below which stock productivity is likely to be seriously impaired, that should have a very low probability⁹⁹ of being violated.

B_{buf} = A stock biomass level above B_{lim} that is required in the absence of analyses of the probability that current or projected biomass is below B_{lim} . In the absence of such analyses, B_{buf} should be specified by managers and should satisfy the requirement that there is a very low probability⁹⁹ that any biomass estimated to be above B_{buf} will actually be below B_{lim} . The more

⁹⁸ Low probability might be defined as # 20%, but the actual level should be specified by managers

⁹⁹ Very low probability might be defined as # 5-10%, but the actual level should be specified by managers

¹⁰⁰ Foreseeable future might be defined as 5-10 years, but the actual time horizon should be specified by managers



uncertain the stock assessment, the greater the buffer zone should be. In all cases, a buffer is required to signify the need for more restrictive measures.

Management strategies and courses of action are as follows:

Management Strategies and Courses of Action (Time horizons and acceptable risk levels specified by managers)	
Zone 1	Safe Zone: Select and set fishing mortality from a range of F values that have a low ¹ probability of exceeding F_{lim} in a situation where stock biomass (B) has a very low ² probability of being below B_{lim} . In this area, target reference points are selected and set by managers based on criteria of their choosing (e.g. stable TACs; socio-economic considerations).
Zone 2	Overfishing Zone: Reduce F to below F_{buf} .
Zone 3	Cautionary F Zone: The closer stock biomass (B) is to B_{lim} , the lower F should be below F_{buf} to ensure that there is a very low ² probability that biomass will decline below B_{lim} within the foreseeable future ³ .
Zone 4	Danger Zone: Reduce F to below F_{buf} . The closer stock biomass (B) is to B_{lim} , the lower F should be below F_{buf} to ensure that there is a very low ² probability that biomass will decline below B_{lim} within the foreseeable future ³ .
Zone 5	Collapse Zone: F should be set as close to zero as possible.
<p>¹ Low probability might be defined as # 20%, but the actual level should be specified by managers</p> <p>² Very low probability might be defined as # 5-10%, but the actual level should be specified by managers</p> <p>³ Foreseeable future might be defined as 5-10 years, but the actual time horizon should be specified by managers</p>	

Key features of the framework include:

- There must be a very low probability² that management actions result in projected biomass dropping below B_{lim} within the foreseeable future³. Below B_{lim} , fishing mortality should be kept as close to zero as possible.
- The fishing mortality limit should be no higher than F_{msy} . There should be a low probability¹ that realized fishing mortality will exceed F_{lim} .
- Fishing mortality targets are flexible, as long as they remain in Zone 1 of Fig. 2.
- If a stock assessment generates a current or projected biomass with some probability distribution, operationally the biomass distribution would be evaluated against B_{lim} . In other words, a risk analysis will provide the probability that current or projected biomass is below B_{lim} . If no probability distribution of biomass is available, but a value for B_{lim} exists, Fisheries Commission should establish a buffer zone (B_{buf}), against which the biomass would be evaluated. The same procedure should be used to establish a fishing mortality buffer (F_{buf}). If biomass is in the zone between B_{lim} and B_{buf} , action to reduce F below F_{buf} is required to ensure that there will be a very low probability² that biomass declines below B_{lim} in the foreseeable future³.

The revised framework attempts to address the managers' concerns as follows:

- 1) Prescribed harvest control rules (no fishing) below B_{lim} or B_{buf}

The new framework allows fishing below B_{buf} , subject to constraints such as ensuring a very low probability² that biomass will fall below B_{lim} in the foreseeable future³. However, below B_{lim} , fishing mortality should be as close to zero as possible.



2) A fishing mortality limit at F_{msy} :

Reasons for continuing to advise that $F_{lim} = F_{msy}$ are:

- Perhaps most importantly, F_{msy} as a limit is in conformance with the Precautionary Approach as described in several United Nations agreements (in particular, Annex II of the United Nations Straddling Stocks Agreement).
- Fishing somewhat below F_{msy} results in a relatively small loss in average catch, but a large increase in average biomass (which, in turn, results in a decreased risk to the fish stock, an increase in CPUE, and a decrease in the costs of fishing).
- Traditional bio-economic models indicate that the fishing mortality associated with maximum economic yield (F_{mey}) is usually considerably less than F_{msy} .
- Ensuring no major stock is fished harder than the single-species F_{msy} has often been recommended as a good first step towards ecosystem-based management (NRC, 1999; Mace, 2001). Ecosystem-based management will likely require even more conservative fishing mortality targets than “traditional” single-species-based management.

3) The perception of a linear decrease in fishing mortality from the biomass target to the biomass buffer:

- There is a range of options open to managers in this part of the framework (for example, no reduction in F is prescribed if stock biomass is above B_{buf} and F is below F_{buf}). Managers also decide on the levels of B_{buf} and F_{buf} in those cases where the risk of biomass being below B_{lim} or the risk of fishing mortality being above F_{lim} cannot be provided.

4) No consideration of the desirability for stable TACs:

- This is a difficult concept to capture in a simple schematic such as Fig. 2; however, considerable flexibility exists for managers in setting target F levels. Stable TACs are easier to achieve if the fishery remains in Zone 1. Furthermore, maintenance of biomass well above B_{lim} will minimize the instability caused by fishery closures.

5) No consideration of multi-species situations:

- Although the proposed PA Framework is focused on single species, ensuring that no individual species is fished harder than the single-species F_{msy} has frequently been suggested as a first step towards satisfying several important and common ecosystem objectives (NRC, 1999; Mace, 2001; Sissenwine and Mace, 2003) In addition, two other aspects of multi-species management were considered in the proposed revision of the PA Framework. First, the de-emphasis of B_{msy} avoids the problem of the impossibility of maintaining all stocks in a multi-species assemblage simultaneously at their respective single-species B_{msy} levels. Second, by replacing the requirement that fishing mortality be zero when biomass is below B_{lim} with a requirement that fishing mortality to be as close to zero as possible in this situation, there is now recognition of the need for a certain amount of flexibility to account for technical interactions that result in unavoidable by-catch of depleted species.



Appendix XII- NAFO Quota Table for 2011

QUOTA TABLE. Total allowable catches (TACs) and quotas (metric tons) for 2011 of particular stocks in Subareas 1-4 of the NAFO Convention Area. The values listed include quantities to be taken both inside and outside the 200-mile fishing zone, where applicable.

Species	Cod				Redfish					American plaice		Yellowtail
	3L	3M	% of 3M Cod TAC	3NO	3LN	% of 3LN Redfish TAC	3M	3O	Sub-Area 2 and Div. 1F+3K	3LNO	3M	3LNO
Canada		80	0.80	0	2556	42.60	500	6000	385 ^{2,4}	0	0	16575 ⁵
Cuba		370	3.70	-	588	9.80	1750		385 ^{2,4}	-	-	-
Denmark (Faroe Islands and Greenland)		2235	22.35	-	-		69 ¹⁹		9627 ^{2,3}	-	-	-
European Union		5703 ²⁵	57.03	0 ¹¹	1094 ²⁶	18.23	7813 ¹²	7000	$\frac{9627^{2,3}}{2503^{2,15}}$	0	0 ¹¹	-
France (St. Pierre et Miquelon)		-		-	-		69 ¹⁹		385 ^{2,4}	-	-	340 ⁵
Iceland		-		-	-		-		9627 ^{2,3}	-	-	-
Japan		-		-	-		400	150	385 ^{2,4}	-	-	-
Korea		-		-	-		69 ¹⁹	100	385 ^{2,4}	-	-	-
Norway		925	9.25	-	-		-		9627 ^{2,3}	-	-	-
Russian Federation		647	6.47	0	1726	28.77	9137	6500	9627 ^{2,3}	-	0	-
Ukraine								150	385 ^{2,4}			
United States of America		-		-	-		69 ¹⁹		385 ^{2,4}	-	-	-
Others		40	0.40	0	35	0.60	124	100	-	0	0	85 ⁵
TOTAL ALLOWABLE CATCH	^{*9}	10000²³	100.0	^{*9,20}	6000^{16,24}	100.0	10000⁸	20000	12516^{10,17}	^{*21}	^{*9}	17000^{21,22}



Species	Witch		White hake	Capelin	Skates	Greenland halibut	Squid (Illex) ¹	Shrimp	
	3L	3NO	3NO	3NO	3LNO	3LMNO	Sub-areas 3+4	3L	3NO
Canada		0	1765	0	2000	1910	N.S. ⁶	15991	
Cuba		-		0		-	510	214	
Denmark (Faroe Islands and Greenland)		-		-		221	-	214	
European Union		0 ¹¹	3529	0 ¹¹	7556	7466 ¹⁸	$\frac{N.S.}{611}$ ^{6,13}	1069 ¹⁴	
France (St. Pierre et Miquelon)		-		-		208	453	214	
Iceland		-		-		-	-	214	
Japan		-		0		1305	510	214	
Korea		-		-		-	453	214	
Norway		-		0		-	-	214	
Russian Federation		0	353	0	2000	1624	749	214	
Ukraine						-		214	
United States of America		-		-		-	453	214	
Others		0	353	-	444	0 ⁷	794	0	
TOTAL ALLOWABLE CATCH	*9,20	*9	6000	*16,9	12000	12734	34000 ²⁰	19200 ²⁷	*9

* Ban on fishing in force.

1. Any quota listed for squid may be increased by a transfer from any "coastal state" as defined in Article 1, paragraph 3 of the NAFO Convention, provided that the TAC for squid is not exceeded. Transfers made to Contracting Parties conducting fisheries for squid in the Regulatory Area shall be reported to the Executive Secretary, and the report shall be made as promptly as possible.
2. The Executive Secretary shall notify without delay all Contracting Parties the dates on which accumulated reported catch taken by vessels of Contracting Parties estimated equal to 50% and then 100% of that allocation.
3. Quota to be shared by vessels from Denmark (Greenland and Faroe Islands), European Union, Iceland, Norway and Russia. Catches in the NAFO Convention Area shall be deducted from the quotas allocated in the NEAFC Convention Area.
4. Quota to be shared by vessels from Canada, Cuba, France (St. Pierre et Miquelon), Japan, Korea, Ukraine and USA.



5. Contracting Parties shall inform the Executive Secretary before 01 December 2010 of the measures to be taken to ensure that total catches do not exceed the levels indicated.
6. The allocation to these Contracting Parties are as yet undetermined, although their sum shall not exceed the difference between the total of allocations to other Contracting Parties and the TAC (= 29,458 tons).
7. In 2005, the previous 935 t "Others" quota was assigned to three Contracting Parties. When the TAC exceeds 30,000 t the next 1,300 t beyond 30,000 will be allocated to an Others quota which can be accessed by those who do not hold Greenland halibut allocation. In deciding the relevant contributions of Contracting Parties to the 1,300 t Others quota, the Fisheries Commission will take into account the fact that some Contracting Parties received a benefit from the 935 t quota which was reassigned in 2005.
8. Not more than 5000 tons may be fished before 01 July 2011. The Executive Secretary shall notify without delay all Contracting Parties of the date on which, for this stock, accumulated reported catch taken by vessels of the Contracting Parties is estimated to equal 50% and then 100% of the TAC.
9. The provisions of Article 12, paragraph 1.b) of the Conservation and Enforcement Measures shall apply.
10. In the case of the NEAFC decision which modifies the level of TAC in 2011 as compared to 2010, these figures shall be accordingly adjusted by NAFO and formalized through a mail vote.
11. Including fishing entitlements of Estonia, Latvia, and Lithuania following their accession to the European Union and in accordance with sharing arrangements of the former USSR quota adopted by the Fisheries Commission at its Annual Meeting in 2003 (FC Working Paper 03/7).
12. Including allocations of 1571 tonnes each for Estonia, Latvia and Lithuania out of a sharing of 20,000 tonnes, following their accession to the European Union.
13. Allocations of 128 tonnes each for Estonia, Latvia and Lithuania as well as 227 tonnes for Poland out of a TAC of 34,000 tonnes, following their accession to the European Union.
14. Including allocations of 214 tonnes each for Estonia, Latvia, Lithuania and Poland out of a TAC of 19,200 tonnes, following their accession to the European Union.
15. Allocation of 2,234 tonnes for Lithuania and 269 tonnes to Latvia following their accession to the European Union.
16. Applicable to 2011 and 2012.
17. The quota shares in footnotes 4 and 15 can only be fished in the NAFO Regulatory Area. If an increase in the overall TAC as defined in footnote 10 leads to an increase in these shares, the first 500 tonnes of that increase shall be added to the quota share referred to in footnote 4.
18. Including an allocation of 418 tonnes for Estonia, Latvia, and Lithuania following their accession to the European Union.
19. Notwithstanding the provisions of footnote 8 and without prejudice to future agreements on allocations, these quotas may be fished in their entirety by these Contracting Parties.
20. Applicable until at least 2013.
21. In lieu of Article 12.1 (a) and (b) of the CEM, the following by-catch provisions for American plaice only in the 3LNO yellowtail fishery shall apply: Contracting Parties fishing for yellowtail flounder allocated under the NAFO allocation table will be restricted to an overall Am. plaice by-catch harvest limit equal to 13% of their total yellowtail fishery as calculated in accordance with Article 12.1 (c). For 2010, the by-catch percentage will increase to 15% unless a Scientific Council projection indicates that this rate is likely to undermine stock recovery or cause an unreasonable delay in reaching B_{lim} , in which case the increase may be subject to a reassessment by the Fisheries Commission.
22. Following the NAFO Annual Meeting and prior to January 1 of the succeeding year, at the request of the USA, Canada will transfer 1000 tonnes of its 3LNO yellowtail quota to the USA.
23. The allocation key of this stock is based on the 1998 Quota Table. In 1999, a moratorium on cod in Division 3M was declared.
24. The allocation key of this stock is based on the 1997 Quota Table. In 1998, a moratorium on redfish in Division 3LN was declared.
25. Including fishing entitlements of 111 tons each for Estonia, Latvia, and Lithuania in accordance with sharing arrangements of the former USSR quota adopted by the Fisheries Commission at its Annual Meeting in 2003 (FC Working Paper 03/7) and allocation of 380 tons for Poland following their accession to the European Union.
26. Including fishing entitlements of 297 tonnes each for Estonia, Latvia, and Lithuania in accordance with sharing arrangements of the former USSR quota adopted by the Fisheries Commission at its Annual Meeting in 2003 (FC Working Paper 03/7) following their accession to the European Union.
27. For 2012, the TAC will be reduced to 17,000 tonnes. This TAC will be reviewed based on available Scientific Council advice on this stock.



Appendix XIII- NAFO Conservation and Enforcement Measures (NCEM)

Part 1 - Developments in the NAFO Conservation and Enforcement Measures (NCEM) in the period from 1979 until present time with emphasis on the Control Measures and Monitoring of Fisheries.

Year	Source / Document	Information on developments of NCEM
1979	FC Doc. 79/VI/1 (NAFO, 1979a)	The NAFO Scheme of Joint International Enforcement adopted from the ICNAF Scheme underwent technical amendment to take account of the fact that the EEC became a Contracting Party to NAFO.
1979	FC Doc. 79/VI/6	New measures adopted stipulating that: - all vessels over 50 gross tons engaged in fishing or in the treatment of sea fish shall be registered by the Contracting Party prior to 1 January of each year, - a document of registration of the vessel in a form prescribed by the national legislation shall be maintained aboard the vessel and shall be made available to any authorized inspector conducting an inspection under the provisions of the Scheme of Joint Enforcement - the NAFO Secretariat will provide to Contracting Parties requesting such information monthly listings of all vessels registered to fish in the Convention Area, including the activities the vessels are authorized to conduct.”
1980	FC Doc. 80/III/6 (NAFO, 1980b)	First comprehensive draft CEM was developed by the WG on Conservation and Enforcement Measures and presented during the Special Meeting of the GC and FC on March 1980. Part III of the draft CEM concerned notification of research vessels and registration of fishing vessels and processing vessels.
1980	FC Doc. 80/IX/15 (NAFO, 1980)	Revised draft CEM presented by the WG at the 2 nd Annual Meeting. Part III “Notification and Registration” was retained.
1981	FC Doc. 81/IV/2 (NAFO, 1981a)	At the 2 nd Special Meeting of the FC on March /April 1981, the draft CEM (FC Doc. 80/IX/15) was presented with some modifications. The modified document became FC Doc. 81/IV/2 (Rev 2 Apr 1981).
1981	FC Doc. 81/IX/14 (NAFO, 1981b)	Following STACTIC recommendation, FC requested that the Secretary issue as soon as the date would be available an updated list of vessels registered to fish in the Regulatory Area. (Report of the FC 3 rd Annual Meeting, September 1981).
1982	FC Doc. 82/IX/10 (NAFO, 1982b)	The draft CEM FC Doc. 82/IV/2 (NAFO, 1982a) adopted with minor modifications (FC 4 th Annual Meeting Report, September 1982)
1982	FC Doc. 82/IX/13 (NAFO, 1982c)	The first compilation of Conservation and Enforcement Measures published.
1985	FC Doc. 85/8 (NAFO, 1985)	STACTIC commented that there is an improvement in the compliance of CPs in sending vessel notifications to the Secretariat. Vessel notifications were forwarded to CPs by the Secretariat through NAFO Circular letters (FC 7 th Annual Meeting Report, September 1985)
1986	FC Doc. 86/13 (NAFO, 1986a) FC Doc 86/14 (NAFO, 1986b)	Adopted FC Doc 86/13 – Establishment and Mandate for a Working Group on Joint International Enforcement in the Regulatory Area. Fishing Vessel Registration had been reviewed annually by STACTIC (FC 8 th Annual Meeting (FC Doc 86/14 Rev).
1988	FC Doc 88/8 (NAFO, 1988b); FC Doc. 88/1 (NAFO, 1988a)	Conservation and Enforcement Measures. Significant changes in the Scheme of Joint International Inspection presented at the 10 th Annual Meeting in September 1988. New requirement – Secretariat is to circulate the Monthly Provisional



		Catches reports to Contracting Parties.
1990	FC Doc. 90/8 (NAFO, 1990a)	STACTIC proposals of measures to increase surveillance and control within the NAFO Regulatory Area: 1) to increase coordination among inspection vessels to optimize the vessels' deployment, 2) to establish a working group to develop the "hail system" and the International Observer's Scheme.
1990	FC Doc. 90/9 (NAFO 1990b)	ToR of the <i>WG on Improvements to Inspection and Control</i> in the NRA developed by STACTIC.
1991	FC Doc. 91/1 (NAFO, 1991a)	Recommendations of STACTIC WG on Improvements to Inspection and Control in the NRA, adopted by FC in March 1991 and in force July 1991 included: -Guidelines for the Coordination and Optimization of Inspection and Control in the RA, - The heading of Part III "Notification" was changed to "Vessel Requirement", - A new rule for marking of vessels, - "Documentation" requiring each CP shall ensure the fishing vessels over 10 meters in length shall carry on board documents (<i>Note: currently this requirement is spelled out in Article 21 – Vessel Requirements</i>) - The NAFO Hail System requiring fishing vessels to report to the competent authorities of their respective CPs six hours in advance of entry to or exit from the NRA and prior to each movement between NAFO Divisions while operating in the NRA. Additional reporting requirements are necessary for "transzonal" fisheries in Divisions 3LN and 3NO. All hail reports are, within 24 hours or receipt by competent authorities, forwarded to other CPs with an inspection presence in the NRA. The information shall also be forwarded to the Executive Secretary as soon as possible-Part III.E.1.2/91.
1991	FC Doc. 91/7 (NAFO, 1991b)	The NAFO CEM including Part IV – Scheme of Joint International Enforcement. This was a collection of STACTIC proposals (from FC Doc 91/1) and amendments to the NCEM, presented to and adopted by FC and became in force in January 1992.
1992	FC Doc. 92/21 (NAFO, 1992)	NCEM replacing the FC Doc 91/7. This publication presented all the conservation and enforcement measures adopted by the FC. The latest proposals for international measures of control and enforcement in the NRA including a pilot project for a NAFO observer scheme, production logbooks, minimum mesh size and fish size for groundfish fisheries, control of incidental catch limits, actions by CPs in case of apparent infringements, were adopted at the 14 th Annual Meeting in September 1992
1994	FC Doc. 94/1 (NAFO, 1994)	NCEM replacing FC Doc. 92/21. The text of the CEM consisted of six parts: Management, Gear, Vessel Requirements, Scheme of Joint International Inspection and Surveillance, Schedules (Quota table, Log Book Entries, Record of Cumulative Catch, Authorized Mesh Size of Nets, Certified Mesh Measuring Gauges, and Authorized Topside Chafers), and a Pilot Project for a NAFO Observer Scheme.
1995	FC Doc. 95/9-19 (incorporated in FC Doc. 96/1)	Amendments to NCEM, including new measures/regulations regarding minimum fish size, at-sea inspection procedures, reporting of catches, Greenland halibut vessel notification and fishing plans, mesh size, port inspections, infringements and follow-up on apparent infringements, pilot project for observers and satellite tracking. Adopted at the 17 th Annual Meeting in Sept 1995, and became in force November 1995.
1996	FC Doc. 96/1 (NAFO 1996d)	NCEM incorporating the 1995 adoption of measures and replacing FC Doc 94/1.
1997	FC Doc. 97/1	Supplement to FC Doc 96/1, consisting of new/amended measures



	(NAFO, 1997c)	adopted during the 18 th Annual Meeting in Sep 1996. The modified measures relate to, among others, cod, shrimp redfish stocks (Part I), and new Hail system format.
1998	FC Doc. 98/1 (NAFO, 1998c)	NCEM replacing FC Doc 96/1 and 97/1 and incorporating new control measures concerning 3M shrimp..
1999	FC Doc. 99/1 (NAFO, 1999d)	Supplement to FC Doc 98/1 incorporating new/amended measures. New – items relating to transshipment, standardized format of NAFO Hails and Satellite Tracking, Sightings and Reporting of NCP vessels (IUU).
1999	FC Doc. 99/11 (NAFO, 1999e); Meet. Proc. 1999 , Section VI (NAFO, 2000a)	Measures concerning chartering arrangements – Notification of vessels temporarily flying the flag of a Contracting Party (bare-boat charters) – adopted at the 21 st Annual Meeting Sept 1999.
2000	FC Doc. 00/1 (NAFO, 2000c)	NCEM replacing FC Doc 99/1 and incorporating new measures concerning bare-boat charters.
2000	Meet. Proc. 2000 , Section VIII (NAFO, 2001a)	At the 22 nd Annual Meeting, a course of action to overhaul the NCEM was agreed. The overhaul was necessary in order to ensure a cohesive document, clarify roles and responsibilities, and reflect advancements in international fisheries agreements.
2001	FC Doc. 01/1 (NAFO, 2001c)	Supplement to FC Doc 00/1 incorporating new measures adopted in September 2000. Among the new measures: Chartering arrangements, VMS Position Report Format.
2002	FC Doc. 02/9 (NAFO, 2002c)	NCEM replacing FC Doc 00/1 and 01/1 incorporating new measures concerning incidental catch limits (bycatch), charter arrangement, Div. 3M shrimps, VMS report format, port inspections.
2003	FC Doc. 03/1 (NAFO, 2003g)	Supplement to FC Doc 02/9. New measures adopted at the 24 th Annual Meeting, September 2002. Among the new measures: the VMS Position Report Forms and the Notification of Authorized Vessel.
2003	FC Doc 03/13 (NAFO, 2003e)	Greenland Halibut Recovery Plan presented and adopted at the 25 th Annual Meeting in September 2003. The Recovery Plan was integrated in the 2004 CEM as Article 7. Article 7.6 stipulated that CPs issue specific authorization for vessels fishing for Greenland halibut.
2003	Meet. Proc. 2003-04 , Section II (NAFO, 2004b)	FC adopted the overhauled version (“new look”) of the NCEM at the 25 th Annual Meeting in September 2003. The overhauled version was based on the existing NCEM documents FC Doc 02/9 and FC Doc 03/1. <i>Annex 1 traces the conservation and enforcement measures in the period 1982 (year of the first publication of the NCEM) – 2003 (year of NCEM overhaul)</i>
2004	FC Doc 4/1 (NAFO, 2004d)	The first edition of the NCEM in the “new look”, also incorporating new measures adopted at the 25 th Annual Meeting in September 2003. . <i>Annex 2 traces the 2003 measures in their integration to the 2004 NCEM.</i>
2006	FC Doc 06/11 (NAFO, 2006e); Meet. Proc. 2006-07 , Section III (NAFO, 2007b)	Measures covering by-catch provisions, serious infringements, follow-up actions under Joint Inspection and Surveillance Scheme, Enforcement and IUU fishing were adopted at the 28 th Annual Meeting in September 2006 with the aim of strengthening MCS . The new measures were part of the NAFO Reform initiative in accordance with paragraph 4c of the St. John’s Declaration which was adopted at the 27 th Annual Meeting.
2007	Meet. Proc. 2007-08 , Section II (NAFO, 2008b); FC Doc 07/9 (NAFO, 2007f)	Additional control measures for Greenland halibut fishery in Subareas 2 and Divisions 3KLMNO adopted at the 29 th Annual Meeting in September 2007. Establishment of a “checkpoint” before vessels with more than 50 t of catches can enter NRA.
2008	FC Doc 08/9 (NAFO, 2008k); Meet. Proc. 2008-	New Port State Control Measures (Chapter V of the NCEM) adopted at the 30 th Annual Meeting in September 2008. The measures were in line with the FAO Agreement on Port State Measures.



	09 , Section III (NAFO, 2009b)	
2010	FC Doc 10/19 (NAFO, 2009j); FC Doc 10/29 (NAFO, 2010d)	Enhanced requirement for catch reporting – daily catch reporting by species and by Division for all types of fisheries, through the VMS (CAT message).
2004-2011	FC Doc. 04/1 ; (NAFO, 2004d) FC Doc. 05/1 ; (NAFO, 2005c) FC Doc. 06/1 ; (NAFO, 2006g) FC Doc. 07/1 ; (NAFO, 2007g) FC Doc. 08/1 ; (NAFO, 2008m) FC Doc. 09/1 ; (NAFO, 2009k) FC Doc. 10/1 ; (NAFO, 2010v) FC Doc. 11/1 (NAFO, 2011a)	Annual publication of the NCEM, incorporating new measures adopted at the Annual Meetings. <i>Annex 3 traces the introduction of new measures in the period 2004-2011</i>



Part 2 – NAFO Conservation and Enforcement Measures (NCEM) Implementation by the NAFO Contracting Parties

Flag State Duties

In 1979 at the First Annual Meeting of the Organization STACTIC duties in terms of control of Contracting Parties' compliance as stated in Rule 5 of the Rules of Procedure for the Fisheries Commission of NAFO were adopted ([FC Doc. 79/VI/8](#), Appendix II (NAFO, 1979b)), and consisted of the following:

- to review the results of national and international measures of control;
- to develop inspection methodologies;
- to consider the practical problems of international measures of control;
- to review reports of inspections and violations;
- to promote exchanges and cooperative efforts of inspectors in International inspection; and
- to make appropriate recommendations to the Fisheries Commission.

Besides, in June 1979 at the NAFO Annual Meeting one of the first control measures of the Organization was adopted: a provision regarding national registration of vessels fishing, or intending to fish in NRA:

All vessels over 50 gross tons engaged in fishing or in the treatment of sea fish in the Convention Area (Subareas 0 to 6) shall be registered by the Contracting Party. A report of this registration shall be filed with the NAFO Secretariat prior to 1 January of each year. A document of registration of the vessel in a form prescribed by the national legislation shall be maintained aboard the vessel and shall be made available to any authorized inspector conducting an inspection under the provisions of the Scheme of Joint International Enforcement (NAFO/FC 79/VI/6).

In the 1980s the following main issues were considered by the Fisheries commission (STACTIC) annually:

- annual report on return of infringements (information on inspections, infringements and disposition of infringements);
- fishing vessel registration (update of information, etc.);
- implementation of a Scheme of Joint International Enforcement of NAFO Regulations outside the 200-mile exclusive economic fishing zone (increase of overall surveillance and joint inspection activities);

By then, gear and mesh size infringements, as well as catch misreporting were the most frequent violations by the vessels of Contracting Parties. At the eleventh Annual Meeting (September 1989 in order to ensure collaboration in matters of management and conservation, a Resolution of the General Council calling on all Contracting Parties to comply with the NAFO management framework in place since 1979 and with NAFO decisions was adopted ([GC Doc. 89/3](#) (NAFO, 1989))

In 1991 decision was taken to amend the international measures of control and enforcement in NRA including a Hail System and Air Surveillance. The text of the Conservation and Enforcement Measures then consisted of five parts: Management, Gear, Vessel Requirements, Scheme of Joint International Inspection and Surveillance, and Schedules (Quota Table, Log Book Entries, Record of Cumulative Catch, Authorized Mesh Size of Nets, Certified Mesh Measuring Gauges, and Authorized Topside Chafers).

At the 14th Annual Meeting (September 1992) to monitor vessels' compliance with NCEM the implementation of a 18-month pilot project to test operation of a NAFO Observer Scheme in the NRA was endorsed ([FC Doc. 92/13](#) (NAFO, 1992b)). The appropriate amendment to NCEM was adopted, according to which observers had to monitor a vessel's compliance with NCEM, record and report upon the fishing activities of the vessel observed, verify the position of the vessel when engaged in fishing, observe and estimate catches, monitor discarding, by-catches and the taking of undersized species, record the gear, mesh sizes and verify entries made to the logbook (catch



quantities and hail reports) and prepare a report of their findings at the termination of the observer period for further presenting to the Fisheries Commission at its special session in 1994.

Besides, STACTIC reporting forms A and B were adopted (see page 166).

In 1994, a Resolution was adopted by the NAFO General Council regarding acceptance of FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas. Although based on STACFAC report and addressed generally to the Parties whose vessels have been observed fishing in the NAFO Regulatory Area over the past year, the Resolution called upon all NAFO Contracting Parties and those Non-Contracting Parties to deposit as soon as possible their instruments of acceptance of the FAO Compliance Agreement and pending its entry into force to apply its provisions to NRA with immediate effect ([Meet. Proc., 1994](#), Section III (NAFO, 1995a)).

In 1995, in order to improve compliance by vessels of the Contracting Parties with NCEM, NAFO approved a new control measure: a Pilot Project for Observers and Satellite Tracking, provisioning for 100% coverage with properly trained and qualified observers and equipment of 35% of vessels fishing in NRA with satellite tracking devices. It was agreed to implement this project during the period from 01 January 1996 to 31 December 1997 ([Meet. Proc., 1995](#), Section V (NAFO, 1996c)).

In 1996 it was agreed to modify NCEM with the provisions on data submission by the Contracting Parties to the Secretariat under the Scheme of Joint International Inspection and Surveillance:

- by 1 March each year for the previous calendar year on the number of inspections conducted by it, the number of air hours flown on NAFO patrol, the number of sightings and the number of surveillance reports and disposition of surveillance reports notified to it by a Contracting Party. The surveillance reports had to be listed annually until follow up action were concluded by the appropriate authorities,
- by February 1 (for the period July 1-December 31 of the previous year) and September 1 (for the period January 1-June 30 of the current year) each year on disposition of apparent infringements by a Contracting Party. The apparent infringements shall continue to be listed on each subsequent report until the action is concluded under the laws of the Flag State.

Besides, the computerized automated hail report system was recommended to Contracting Parties to streamline and monitor fishing activities in NRA ([Meet. Proc. 1996](#), Section III (NAFO, 1997a)).

At the June 1997 intersessional meeting of STACTIC, a Review of implementation of Conservation and Enforcement Measures, based on the information compiled by the Secretariat, was done, which dealt with implementation of hail system, submission of catch statistics, surveillance and inspection activities, pilot project on observers and satellite tracking and establishing criteria for reviewing its objectivity in distribution of inspections. Non-compliance by Contracting Parties with relevant data submissions was then noted.

At the NAFO 9th Annual Meeting (September 1997), a summary of inspection information for 1996 was presented, compiled in STACTIC Form E pursuant to the provisions of part IV.16 and 17 of NCEM. It was noted that only two Parties sent inspection vessels in the NRA (Canada and the European Union). Disposition of apparent infringements reported by Contracting Parties to the NAFO Secretariat for 1993-1996 was analyzed. Directed fishing for species under moratoria, mesh and gear violations, no capacity plans on board, retaining undersize fish were noted as most frequently detected NCEM violations.

In 1998, a Program for Observers and Satellite Tracking was incorporated into NCEM as Part VI of it ([FC Doc. 98/7](#) (NAFO, 1998d)). Besides, it was decided to task Contracting Parties with submission and the Secretariat with compilation of information with respect to fishing effort to prepare a summary table based on the data received from Contracting Parties and the data held by the Secretariat on apparent infringements. Compliance data were reviewed for 1992 - 1997. It was pointed out that observer relevant infringements/ inspection had decreased from one in 6.7 inspections in 1993 to one in 26.9 inspections in 1997 ([Meet. Proc. 1998](#), Section VII (NAFO, 1999a)).

In 1999 the Fisheries Commission recommended to Contracting Parties to include more specific information about fines in their future reports on annual infringements in the manner required by NAFO ([Meet. Proc. 1999](#), Section VI (NAFO 2000a)).



At the 2000 Annual Meeting a Working Group was established to overhaul NCEM to bring them in line with newer and more recent developments in international fisheries, such as the 1995 UN Agreement on Straddling Fish Stocks and the FAO Compliance Agreement, which had to be examined with a view to reviewing the NAFO measures. Furthermore, it was necessary to address the issue of the relationship between the special NAFO control rules and the general enforcement provisions of the UN Agreement.

With respect to inspection and control measures in the NRA, the continued use and enhancement of the NAFO vessel monitoring system (VMS) was supported. Concern was expressed regarding inspection presence of only two Contracting Parties in the NRA. Although a proposal was tabled to introduce rules concerning obligatory inspection presence, no action was taken in this regard.

Regarding the STACTIC review of the annual returns of infringements, it was noted that there had been an overall improvement on the level of Contracting Party reporting on the disposition of apparent infringements. Surveillance and inspection reports were presented by the two Contracting Parties on activities during 1999.

At the 24th Annual Meeting (September 2002), same as in previous years, two presentations on assessment of compliance in NRA were provided - by Canada and the European Union - for 1999 - 2001. Concern was expressed with the increasing trend in non-compliance in six areas:

- i) directed fishing/ excessive by-catch of moratoria species
- ii) exceeding allocations/ misreporting
- iii) directed fishing after closure (Div. 3L shrimp)
- iv) increased frequency of mesh size violations
- v) increase in issuance of citations for apparent infringements
- vi) non-submission or late submission of observer reports.

However, it was concluded that the current level of compliance could not in any case be compared to the one in the early 1990s. Other Contracting Parties were requested to increase their involvement in inspections in the NRA thus meeting their obligations for a mandatory inspection presence when having more than 15 vessels operating in the NRA. It was noted that while inspections at-sea and at dockside were important, observers were a very important aspect of monitoring at sea.

Besides, pursuant to "Review of Compliance" and "Amendment to the Rules of Procedure for the Fisheries Commission - For New Terms of Reference" ([FC Doc. 02/16](#), (NAFO, 2002d), STACTIC furthered its work on establishing a framework for an annual evaluation (review) of compliance and reported to the Fisheries Commission its conclusions in this regard.

Besides, appropriate amendments to Rule 5 of the Rules of Procedure for the Fisheries Commission for new terms of reference of STACTIC and for a Supportive Role by the Executive Secretary were adopted ([FC Doc. 02/16](#) (NAFO, 2002d)).

The year of 2003 marked finalizing of NCEM revision and the overhauled version of the document was adopted. There appeared a new chapter in NCEM- VII "Pilot Project on Observers, Satellite Tracking and Electronic Reporting", adopted by the Fisheries Commission in September ([Meet. Proc., 2003-04](#), Section II (NAFO, 2004b)). The new control measure was adopted according to which all vessels fishing in the NRA were subject to VMS position reporting every two hours.

With regards to compliance, it was noted that compliance in the Div. 3L shrimp fishery has significantly improved from 2002. However, lack of follow-up to violations by certain Parties remained and it was admitted that measures needed to be taken to deal with misreporting and to enhance the observer program.

It was agreed that a compliance review should be based on the results of inspections at sea and in port, on VMS data, and observer data should also be taken into account. It was concluded that the level of compliance was satisfactory in the NRA and has improved significantly since 1995.

On the issue of increase of inspection presence in the NAFO Regulatory Area it was noted again that the costs of inspection in NRA continued to be borne mainly by two Contracting Parties, and that, under international law, flag States are expected to control the conduct of their fleet. It was also suggested that Contracting Parties not sending a patrol vessel to the NRA should be prepared to help defray the costs of the inspection presence.



At the 26th Annual Meeting (September 2004) the Annual Compliance Review- 2003 was introduced ([FC Doc. 04/13](#) (NAFO, 2004h)). It was acknowledged by delegations that the process was valuable but would need to be developed and improved in the light of experience.

Following the agreement of Contracting Parties at the STACTIC intersessional meeting in June 2004, data tables were prepared by the Secretariat and circulated to STACTIC participants in July 2004. These tables, which number 13 in total, were drawn up on the basis of the obligations outlined in NCEM and provide an overview of the compliance of Contracting Parties or vessels with those obligations. Tables 1 to 5 concern compliance by Contracting Parties and tables 6 to 13 concern compliance by vessels.

On the issue of compliance by Contracting Parties it was agreed that a greater effort was needed to improve the information provided, in view of the significant discrepancies between a number of different data sources (observer reports, VMS and Port Inspections). On the whole, Contracting Parties had fulfilled their obligations under the NCEM with regard to providing reports to the Secretariat. Delays had been noted, however, with regard to the notification of fishing vessels but in view of the amendment to the NCEM, whereby a vessel register had been introduced, this would no longer be a requirement from 2004 on. Besides, infringements should not be viewed as the only indicator of non-compliance and all relevant indicators should be considered. Due to discrepancies in the data, it was impossible to determine compliance with catch limits. Recommendations were made to improve the process of compilation and analysis of compliance information, including:

1. Reports in official language: English
2. Standardization of format of observer reports.
3. Electronic submission of reports.

Significant discrepancies in the data from VMS, observer reports and port inspections were noted. At the 27th Annual Meeting (September 2005), having considered the Annual Compliance Review-2004 ([FC Doc. 05/6](#)), Contracting Parties were recommended to ensure that all reports are provided in a timely manner in order for the Secretariat to provide meaningful preliminary data analysis for STACTIC members to review them inter-sessionally.

At the 29th NAFO Annual Meeting (September 2007), the Annual Compliance review (2006) was noted ([FC Doc. 07/23](#) (NAFO, 2007h)). The reviewed compliance data tables that would facilitate STACTIC's compliance evaluation through the reduction of existing redundancies and more concise trend analysis as well as other recommendations to improve the Compliance Review were adopted. Two table types were designated:

Compilation Tables (C-tables) that were of a confidential nature were provided only to individual Contracting Parties for their respective information and follow-up and Report Tables (R-tables) that would provide STACTIC with the basis for the Compliance Review ([Meet. Proc. 2007-08](#), Section II (NAFO 2008b)).

Summary and trend analysis of compliance assessment for 2004, 2005 and 2006 was given. The 2004 data was completed in 2005 as the past two years have been delayed pending NAFO reform priorities. A total of 8 compilation tables and 6 report tables were presented. After consideration of the document the following conclusions were made:

- Report submission is improving however timeliness is still a concern;
- General decrease in number of vessels and inspections however not relative to the decrease in number of vessels;
- The frequency of at sea inspections has increased relative to the number of active vessels and fishing days in the NRA;
- From 2004 to 2006 there was a 10% reduction in inspections versus a 31% reduction in vessels and a 47% reduction in fishing days;
- Shift in at sea citations toward new NCEM provisions such as stowage plans and product labeling;
- Increase in port detection of citations oriented toward inaccurate recording and labeling;
- It can take 2 years for follow up to citations;



- Additional items for consideration in future as assessment indicators may include:
- Port inspection landings versus amounts reported in COX;
- Data source comparison of catch data (VMS, COX, port inspection);
- Electronic mapping of water depth versus directed species.

At the 2008 Annual Meeting while considering the 2008 Compliance Review (for the period 2004-2007, [FC Doc.08/20](#) (NAFO, 2008n)) it was observed that the trends displayed in the presentation provided some interesting insight into the activity in the NRA, specifically pertaining to a decrease in vessel number and effort and relative increase in inspections. In this context it was suggested that a discussion should be undertaken to determine, based on the trends, what compliance objectives NAFO should be focusing on and how they could be achieved in the most cost-effective and efficient manner.

Continuously developing the format of the compliance review, STACTIC presented the 2008 document which compared information from the following sources: a) Vessel Monitoring System (VMS), b) Observer Reports, c) Port Inspection Reports, d) At-sea Inspection Reports and e) Reports on Dispositions of Apparent Infringements.

Inaccurate catch recording was admitted to be the most frequent infringement. Another issue was the timeliness of reports submitted by Contracting Parties to the NAFO Secretariat (as specified in NCEM 2008 by Articles 27, 34, and 45). With the exception of at-sea inspections most reports were not submitted within 30 days as required. It was noted that timeliness of submission did not necessarily equate to a failure to submit the required reports. Analysis of fishing effort was recommended for inclusion into future compliance reviews. Also the issue of automated COE/ COX comparison between NAFO and NEAFC reports was discussed. It was recommended to improve the accuracy of information within the NAFO database with support of the NAFO service provider (Sirius IT) and interact with NEAFC to further advance this issue.

At the 31st Annual Meeting in September 2009 the Annual Compliance Review 2009 (Compliance Report for Calendar Year 2008) was adopted ([FC Doc. 09/16](#) (NAFO, 2009m)). The issue of concern was the timeliness of reports submitted by Contracting Parties to the NAFO Secretariat. Articles 28 and 35 of the NCEMs require that at-sea and observer reports be submitted within 30 days (of completion of assignment for observer reports). Under the Port State Control measures implemented in 2009, port State Contracting Parties are required to transmit the Port State Control inspection form (form PSC 3) to the Executive Secretary “without delay”. However, this provision was not in effect for 2008. Thus, the 30-day requirement in force for port inspection reports in 2008 was considered in the analysis.

In comparison to port inspection and observer reports, at-sea inspection reports are submitted in a more timely fashion. However, the timeliness of the at-sea inspection reports has declined since 2005, from an on time rate of 91 percent in 2005, to 63 percent in 2008. It should be noted that timeliness of submission does not necessarily equate to a failure to submit the required reports.

Besides, concerns were raised by Contracting Parties regarding the quality of the reports received. It was noted that lack of uniformity in format of the submitted observer reports may compromise the quality of the reports in general. However total catch information by species contained in the observer reports were compared to other sources (e.g., VMS hail reports and Port Inspection reports), where possible, and the comparison shows that there is a general agreement of the catch information among various sources.

In 2010, at the STACTIC inter-sessional meetings, the following issues were addressed. The need was noted to include analysis of compliance with VME provisions and Port State Measures. Also it was commented that the compilation tables and report tables could be simplified without compromising the objectives of the compliance review. Further discussion continued on STACTIC WP 09/17, describing the landing procedure through a checklist. The overall objective was to increase the efficiency of inspections both at sea and port, noting that control at sea is costly compared to land based inspection. A complementary system of controls at sea and on land was considered and views were expressed that at-sea inspections should focus on issues verifiable at sea while port inspection should be a complementary tool, and not a parallel inspection with the repetition of the same issues already verified at sea.



On the other hand, mandatory port inspections, even limited to species under a recovery plan can be counter-productive, by increasing the demand on local fisheries authorities for any relevant vessel, whatever is the quantity of fish to be landed. The efficiency of port inspections would increase if a standardized methodology would be adopted, i.e. by following a checklist. In port, a higher reliability of inspection can be achieved by using a check list. This should not be considered mandatory, but as guidance to good practice ([Meet. Proc. 2009-10](#), Section III (NAFO, 2010c)).

The item of at-sea monitoring discussions was first discussed at the 2009 Annual Meeting. It was suggested to revise Chapter IV of the NCEM - Joint Inspection and Surveillance Scheme by incorporating a protocol to facilitate the placement of inspectors from one Contracting Party onboard vessels or aircraft of another Contracting Party assigned to the Scheme. It was noted that recently there were joint patrols carried out with the inspectors from the European Union and the USA embarking on Canadian patrol vessels.. It was encouraged that such collaboration be continued ([FC Doc. 10/29](#), (NAFO, 2010d)).

Developing of minimum standards for at-sea and in-port inspections that could be attached as an annex to the NCEM was suggested. The FAO Technical Guidelines for in-port inspection procedures were recommended for reference in developing in-port inspection minimum standards. Furthermore it was desirable to align the NAFO port inspection measures with the FAO port state control scheme and the EU regulation on IUU fisheries. The Chair mentioned that NEAFC has started on bringing the Port State Control in line with the FAO agreement. This item was also referred for consideration to the next STACTIC meeting.

On implementation of the Joint Inspection and Surveillance Scheme the comments and observations from the 2009 Annual Meeting of the Fisheries Commission were reiterated concerning the trend of increased inspection rate on the fishing vessels.

[FC Doc. 10/21](#) (NAFO, 2010w), dealt with reports on “infringements” as per Article 42.1 of NCEM stating that a Contracting Party should report twice a year on infringements detected on their vessels and the relative follow-up, and on significant differences in the recording of catches from logbooks and the inspector’s estimation. As no standardized reporting process was proposed and a rationale for such a biannual reporting was not clear, it was proposed to modify Article 42.1 with the following text (the proposal was later adopted at the Annual Meeting) ([FC Doc. 10/29](#), (NAFO, 2010d)).:

- to deliver a report once a year (on 1 March), instead of twice;
- to standardize the reporting process (unique e-format).

On aerial surveillance it was noted that Canada does operate an extensive aerial surveillance program in the NRA which accounted for approximately 295 patrols per year, some in a joint capacity with inspectors from other Contracting Parties. Besides, on inclusion of chartering compliance report referenced in Article 19.13 into general Compliance Review generated by STACTIC, the decision was taken that since presented directly to Fisheries Commission as required, thus no need to incorporate it into Compliance Report.

It should be noted that according to Article 18 of NCEM “Authorization to Fish” each NAFO Contracting Party have to:

- authorize the use of fishing vessels flying its flag for fishing activities in NRA only where it is able to exercise effectively its responsibilities in respect of such vessels;
- ensure that only authorized fishing vessels flying its flag conduct fishing activities in NRA;
- ensure that fishing vessels flying its flag comply with applicable measures adopted under the NAFO Convention;
- undertake to manage the number of authorized fishing vessels and their fishing effort commensurate to the fishing opportunities available to that Contracting Party in the Regulatory Area;
- through its competent authorities, every two years, check each of their notified vessels to certify the correctness of the vessel’s plans for fish rooms and other fish storage places. The master is to ensure that a copy of such certification remains on board to be shown to a NAFO inspector if requested.

In May, 2010, at the STACTIC intersessional meeting ([FC Doc.10/06](#) (NAFO, 2010f)) on the issue of possible revision of NCEM, “Verification of Authorization to Fish” was introduced. In this



document it was suggested to add a provision to NCEM stipulating on the requirement for vessel masters to carry onboard or otherwise make available proof of its authorization to fish. As no consensus was reached, it was agreed to draft a new working paper on the issue addressing the intent of the proposal and taking into account the views of delegations, and present this paper at the next meeting.

At the 2010 Annual Meeting discussions commenced on a virtual inspection portal that would contain the updated electronic versions of relevant information on vessels registration, authorization to fish, research plans, etc. ([FC Doc.10/29](#) (NAFO, 2010d)).

The concept was supported and it was agreed that the NAFO Secretariat would develop a plan for the implementation of this project (with options and cost implications) to present at the 2011 STACTIC intersessional meeting.

With regards to vessel register, under Article 20 of NCEM:

- The Executive Secretary is to establish and maintain a register of all fishing vessels of more than 50 gross tons authorized to fish in the Regulatory Area. Fishing vessels not entered into this register are deemed not to be authorized to fish in the Regulatory Area;
- Contracting Parties by 1 January notify the list of vessels which are authorized to operate in the Regulatory Area;
- Contracting Parties promptly notify, after the establishment of the initial register, the Executive Secretary of any addition to, any deletion from and/ or any modification of the register at any time such changes occur; and
- The Executive Secretary deletes vessels in the register which have not been active in the Regulatory Area for two consecutive years.

As was stated previously, under the current Vessels Register 197 fishing vessels of more than 50 gross tons are authorized to fish in NRA by 11 NAFO Contracting Parties. In 2010 there were 53 active vessels fishing in NRA.

Port State Measures

In 2002, according to the Fisheries Commission decision, the work on compliance by Contracting Parties was initiated . The Executive Secretary was commissioned with compilation of information on *inter alia* port inspection reports ([Meet. Proc., 2002](#), Section VIII (NAFO, 2003a)).

At the 2003 Annual Meeting it was agreed that the level of compliance was satisfactory in the Regulatory Area, however further compliance reviews must be based on the results of inspections at sea and in port as well as VMS data and that observer data do not have a sufficient level of reliability in this regard ([Meet. Proc. 2003-04](#), Section II (NAFO, 2004b)). Also, a proposal on implementation of a standardized Port Inspection Protocol, relating to offloading of all fish harvested in the NAFO Regulatory Area, was presented but could not be agreed ([Meet. Proc., 2003-04](#), Section II (NAFO, 2003b))

As to 2003 compliance review, it was stated that on the whole Contracting Parties had fulfilled their obligations under the CEM with regard to providing reports to the Secretariat, however it was agreed to ensure a greater degree of accuracy in the data and to improve the information provided in view of the significant discrepancies between a number of different data sources (observer reports, VMS and port inspections). Product labelling and storage plans became obligatory for all species and vessels.

A workshop was hosted by the European Union for inspectors to examine procedures and methods for inspections at sea and in port. The goal of this workshop was to increase confidence and to harmonize the approach of inspection authorities of NAFO Contracting Parties ([Meet. Proc. 2004-05](#), Section I (NAFO, 2005a))

In the late 1990s, due to the high level of non-compliance by Non-Contracting Parties (NCP) with conservation and regulatory strategies of NAFO, the NAFO Scheme to Promote Compliance by Non-Contracting Party Vessels with the Conservation and Enforcement Measures Established by NAFO was adopted (NCP Scheme). Whereas the NCP Scheme targets NCP vessels, the Port State Control Measures under Chapter V of NCEM apply to landings or transshipments of fish caught in the Regulatory Area or fish products originating from such fish, that have not been previously landed or offloaded at a port, in ports of Contracting Parties by fishing vessels flying the flag of another Contracting Party (NCEM, Article 45). Modifications of the NCP Scheme, including the clause on



compulsory port inspections of NCP vessels, were agreed at the 2004 NAFO Annual Meeting ([Meet. Proc. 2004-05](#), Section I (NAFO, 2005a))

In the 2004 Annual Compliance Review (NAFO/FC Doc. 05/6, 27th Annual Meeting, September 2005) Contracting Parties were recommended to ensure that all reports are provided in a timely manner in order for the Secretariat to provide meaningful preliminary data analysis for STACTIC members to review. Besides, missing port reports weaken the validity of any analysis.

At the 28th Annual Meeting (September 2006) a proposal to modify the IUU measures to strengthen controls with regard to IUU vessels was introduced. This issue was referred to STACFAC for their deliberation ([Meet. Proc. 2006-07](#), Section III (NAFO, 2007b)).

In 2006 submission of port inspection reports in 2005 was finalised ([Meet. Proc. 2006-07](#), Section III (NAFO, 2007b)). Out of 187 port inspection reports, submitted by 5 port state Contracting Parties, 146 or 78% were late, i.e. received later than 30 days following the completion of the port inspection.

In the 2006 Annual Compliance Review ([FC Doc. 07/23](#) (NAFO, 2007h)) it was stated that accuracy of this report is dependent upon the analysis and submission of Contracting Party reports. Regarding tendencies, it was noted *inter alia* that number of Port Inspection reports missing had decreased from 28% in 2004 to 19% in 2006. Timeliness of report submission however was not as efficient: *inter alia*, late Port inspection reports had increased from 59%, in 2004, to 73%, in 2006.

There was a conclusion that report submission was improving however timeliness was still a concern. Besides, a proposal on new NAFO regulations on port State control and on improvements to Port Inspection Report regarding information on infringements were introduced ([Meet. Proc. 2006-07](#), Section III (NAFO, 2007b)).

In the 2008 compliance review presented at the 30th Annual Meeting (September 2008, [FC Doc. 08/20](#) (NAFO, 2008n)) the issue of timeliness of reports submitted by Contracting Parties to the NAFO Secretariat was again raised: with the exception of at-sea inspections most reports had been not submitted within 30 days as required. Review of the new NAFO Port State Control Scheme was completed ([FC Doc. 08/9](#), NAFO, 2008k) and these measures were adopted to be included in the NAFO Conservation and Enforcement Measures.

Under the Port State Control measures implemented in 2009, port State Contracting Parties were required to transmit the Port State Control inspection form (form PSC 3) to the Executive Secretary “without delay”. However, this provision was not in effect for 2008. Thus, the 30-day requirement in force for port inspection reports in 2008 was considered in this analysis. Besides, concerns were raised by Contracting Parties regarding the quality of the reports received. According to Secretariat, total catch information by species contained in the observer reports were compared to other sources (e.g., VMS hail reports and Port Inspection reports), where possible, and the comparison shows that there is a general agreement of the catch information among various sources.

Upon further discussion with the Secretariat, it was noted that the lack of uniformity between the reports is also an issue, making it time consuming to compile the annual compilation tables provided to Contracting Parties. As to implementation of Port State Measures it was noted that:

- The reporting requirements under NEAFC and NAFO were different and can present challenges to Contracting Parties;
- It was desirable to look at the FAO framework and harmonize NAFO Port State measures with other schemes dealing with IUU issues;
- Proposal on designation of the flag State competent authority (STACTIC WP 09/22) should be recommended for adoption.

In compliance report for calendar year 2009 ([FC Doc. 10/28](#) (NAFO, 2010q)), it was underlined that monitoring the NAFO fisheries includes submission of reports on catch and effort by vessels from different sources: VMS reports such as Catch-on-Entry (COE) and Catch-on-Exit (COX) are submitted by the fishing vessels through their respective Fisheries Monitoring Centers; port inspection reports by the port authorities; and observer reports.

The submission of port inspection and observer reports improved in 2008, but declined in 2009. This is likely due to the implementation of NAFO’s Port State Control Scheme in 2009 as under this scheme port state Contracting Parties are only required to carry out inspections on vessels from other



Contracting Parties at a rate of 15 percent a year, with the exception of vessels fishing for NAFO species under a recovery plan.

Besides, at the 32nd Annual Meeting (September 2010) there was further discussion in-port checklists to use as a guide and was not intended to be compulsory, and on the issue of harmonizing the in-port and at-sea inspection process. Also discussions continued in relation to procedures for joint inspections. It was suggested to expand these procedures to include joint port inspections as well and to develop joint inspection protocols ([FC Doc.10/29](#) (NAFO, 2010d)).

In line with international instruments and arrangements on cooperation in combating IUU fisheries, in the new NAFO Convention there is a separate article stipulating Port State Duties (Article XII):

1. Actions taken by a port State Contracting Party pursuant to this Convention shall take full account of its rights and duties under international law to promote the effectiveness of conservation and management measures adopted by the Commission;
2. Each port State Contracting Party shall implement the measures concerning inspections in port adopted by the Commission;
3. Nothing in this Article shall affect the sovereignty of a Contracting Party over ports in its territory.

Follow-up on infringements

NAFO performance assessment in regard of following-up on infringements can be divided into two periods: the first, up to 2004, based on considering of annual information (contained in reports of inspections and infringements, presented by the Contracting Parties with inspection presence in the NRA, as well as of national reports on disposition of infringements), and the second, currently in place in the Organization, which began in 2004 with the introduction of comprehensive compliance analysis: the Annual Compliance Review. In this document information from different sources is analyzed to evaluate the NAFO Contracting Parties' compliance with NCEM. The issue of following up to infringements is considered under a separate part of an annual Compliance Review and the relevant findings on this are taken into account while making conclusions on the observed NAFO compliance trends.

The period up to 2004

At the First Annual Meeting in June 1979 the Rules of Procedure for the Fisheries Commission were adopted, which provided for the establishment of a Standing Committee on International Control (STACTIC), authorized *inter alia* to review the results of national and international measures of control, review reports of violations and make appropriate recommendations to the Fisheries Commission ([FC Doc 79/VI/8](#) (NAFO, 1979b)). Also decision was taken to examine the ICNAF text of the Scheme of Joint International Enforcement, including provision on designation of national authorities to receive immediate notice of infringements, in order to suit it for adoption as regulations of NAFO.

In accordance with Rule 12 of the Scheme of Joint International Enforcement (Annex I), appropriate authorities of each Contracting Party were required to report by 1 March each year for the previous year on inspections, apparent infringements, and the status of their disposition ([FC Doc.80/IX/15](#) (NAFO, 1980)).

In 1995, there were adopted amendments to NAFO Scheme of Joint International Inspection and Surveillance (Part IV of NCEM) concerning follow up on 6 serious infringements (paragraphs 9 and 10) and cooperation in following up to infringements (paragraph 12) ([FC Doc. 95/19](#) (NAFO, 1995p), [FC Doc. 95/16](#) (NAFO, 1995k)).

In 1996 NCEM were further amended with provision on a twice-a-year reporting (by February 1 for the period July 1-December 31 of the previous year and by September 1 for the period January 1-June 30 of the current year) by Contracting Parties on disposition of apparent infringements and on catch records differences, as well as with requirement of indication of the current status of the case stated in this report (i.e. case pending, under appeal, still under investigation, etc.), of any penalties imposed (described in specific terms, i.e. level of fines, value of forfeited fish and/ or gear, written warning given, etc.) and of inclusion of an explanation if no action had been taken ([FC Doc. 96/1](#) (NAFO, 1996d)).



Until 1993 the annual information on inspections, infringements, and disposition of infringements was presented, based on the data provided by Contracting Parties according to the following STACTIC forms:

- Form 1: annual returns of infringements and their disposition, national (included a statement on “penalties imposed in currency of reporting country”);
- Form 2A: annual return of inspections and infringements, international, by countries inspecting vessels of other countries; and
- Form 2B: annual return of disposition of infringements, international, by countries whose vessels were inspected by others.

In 1992, in order to bring the inspection forms in line with the provisions of NCEM, a decision was made to combine the two forms to report infringements (forms 1 and 2A), and thus new STACTIC forms were adopted, as follows:

- Form A: Annual Return of Inspections, Catch Record Discrepancies and/ or apparent infringements; and
- Form B: Annual Return of Disposition of Catch Record Discrepancies and/or apparent Infringements (to be used by Contracting Parties whose vessels were cited by other Contracting Parties).

In form A information on total number of inspections and apparent infringements has been compiled, while in Form B information on disposition of apparent infringement(s) and/ or catch record discrepancies ([FC Doc. 92/9](#) (NAFO, 1992c)) is reported.

At the 1993 STACTIC Annual Meeting it was agreed that the Executive Secretary would combine STACTIC Forms A and B into the Form E for its distribution to Contracting Parties (NAFO/FC Doc.93/18). In the Form E summary information on inspections, catch records discrepancies, apparent infringements and their disposition was presented.

From 1996 on, in accordance with Part IV.17 of NCEM ("The apparent infringements shall continue to be listed on each subsequent report until the action is concluded under the Laws of the Flag State"), separate compilation was presented annually on summary of undisposed apparent infringements by Contracting Party:

- a) Summary of undisposed apparent infringements for 1993- 1994- 1995 (NAFO FC Doc. 96/3), totaling to 48 cases for three years: 1993= 12, 1994= 24, 1995= 12;
- b) Summary of undisposed apparent infringements for 1993- 1994- 1995- 1996 (NAFO/FC Doc. 97/6), totaling to 55 cases for 4 years: 1993= 9, 1994= 20, 1995= 8, 1996= 18;
- c) Summary of undisposed apparent infringements for 1995 and 1997 (NAFO/FC Doc.98/6), totaling to 8 cases for 2 years: 1995= 5, 1997= 3; etc.

At the Second Annual Meeting (September 1980), it was noted that a summary of all the information on apparent infringements and the status of their disposition by Contracting Parties was possible only after “several repeated requests for this information” (NAFO/FC Doc.80/ IX/8).

At the third Annual Meeting (September 1982), the Fisheries Commission noted that there appeared to be considerable delays in the submission of the required information and stressed the need for more timely submission to the NAFO Secretariat by Contracting Parties of returns on inspections and infringements and disposition of infringements (NAFO/FC Doc. 81/IX/15, Annex 5).

At the 13th Annual Meeting (September 1991) the importance was emphasized of disposition of apparent infringements as an essential aspect of the NAFO control system. It was noted that the Executive Secretary had received information on annual return of infringements for 1990 from only four out of 9 Contracting Parties (Meet. Proc. 1991, Section VI (NAFO, 1992d)).

In June 1997 at STACTIC intersessional while making comments on shortcomings of Contracting Parties performance it was stated that regulations and requirements on disposition on apparent infringements had at all times been in arrears regarding the dates of presentation of the relevant information ([Meet. Proc. 1997](#), Section V (NAFO, 1998a)).

At the 1994 Annual Meeting it was pointed out that in some reports of Contracting Parties’ disposition on infringements the detailed information on fines had been provided in previous years. The proposal was introduced for enhanced reporting on disposition of apparent infringements by



which it sought to give greater precision to the requirement to report "in specific terms" on the penalties imposed by flag States in respect of infringements. The agreement was reached on the commitment to make returns on the disposition of infringements in a timely manner. The Fisheries Commission accepted in principle this proposal on the understanding that the Contracting Parties will do their best in accordance with their legislation to increase "transparency" of disposition of apparent infringements ([Meet. Proc. 1993](#), Section III (NAFO, 1994b)).

In 1995 at the Fisheries Commission Annual Meeting while reviewing annual returns of infringements it was noted that some Contracting Parties had not submitted the disposition of apparent infringements for 1993 and 1994. It was agreed that although the system worked slowly in these matters, the reports should be completed and forwarded to the NAFO Secretariat as soon as possible, and that any Contracting Party which had a disagreement with the report on the disposition of Apparent Infringements should send their comments to the NAFO Secretariat.

Again concern was expressed by some delegates as to ensuring more timeliness and precision in the provision of information on the type and nature of convictions and respective penalties ([Meet. Proc. 1995](#), Section V (NAFO, 1996b)).

At the 1996 Annual Meeting it was agreed to reinforce with the Contracting Parties the deadlines (as required by Part IV.16 of the Conservation and Enforcement Measures, [FC Doc. 96/1](#) (NAFO, 1996d)) for reporting on their disposition of apparent infringements to be adhered to ([Meet. Proc. 1996](#), Section III (NAFO, 1997a)).

In 1997 while reviewing the report on Annual Return of Infringements it was noted that there were still significant information gaps dating back to 1993 and that although NCEM were very clear and specific about the type of information that Contracting Parties were required to provide twice a year, including the current status of each case, several Contracting Parties had not submitted the required information. All Contracting Parties were asked to review their apparent infringements and provide written updates to the Executive Secretary as soon as possible as that kind of reporting requirement was very important as providing the necessary transparency to ensure confidence regarding the handling and final results of alleged infringements.

As noted, a number of Contracting Parties have consistently failed to provide the information specified under the Scheme: [FC Doc. 97/6](#) (NAFO, 1997e) listed well over 50 vessels with apparent infringements going back as far as 1993, for which there was no information on their disposition.

At the 20th Annual Meeting (14-18 September 1998, [Meet. Proc., 1998](#), Section VII (NAFO, 1999a)) the Chairman noted that submission of reports on the disposition of apparent infringements had improved significantly since the last Annual Meeting. Furthermore, the types of infringements that most jeopardize stocks have all but been eliminated. The Parties agreed that effective satellite program and 100% observer coverage contributed a lot to the improved level of compliance.

At the 1999 annual STACTIC reported to the Fisheries Commission that there has been a general improvement in the past year in the reporting by Contracting Parties on the disposition of apparent infringements. Emphasized was the importance of Contracting Parties providing complete reports on the disposition of infringements. Also in the report it was suggested that when fines are imposed as part of the penalty for an infringement in the manner required by the NAFO Conservation and Enforcement Measures, Contracting Parties should provide information in their future reports regarding the specific amount of the fines ([Meet. Proc., 1999](#), Section VI (NAFO 2000a)). It was noted that in some cases this level of detail had been provided by a Contracting Party in the past, but then discontinued doing so because other Contracting Parties were not reporting fine amounts.

At the 24th Annual Meeting, September 16-20, 2002 ([Meet. Proc., 2002](#), Section VIII (NAFO, 2003a)) it was concluded that the level of compliance was satisfactory in the Regulatory Area and that the current situation could not in any case be compared to the one in the early 1990s.

At the 2002 Fisheries Commission Annual Meeting on the agenda item on compliance issues there were presented and adopted by the Fisheries Commission two documents with regards to the compilation of annual Compliance Reviews: "Review of Compliance" and "Amendment to the Rules of Procedure for the Fisheries Commission for New Terms of Reference of the Standing Committee on International Control (STACTIC) and for a Supportive Role by the Executive Secretary", which marked the start of the new period of the NAFO activities on compliance reviewing ([Meet. Proc. 2002](#), Section VIII (NAFO, 2003a)).



At the 2003 Annual Meeting it was marked that lack of follow-up to violations by certain Parties remained problematic ([Meet. Proc. 2003-04](#), Section II (NAFO, 2004b)).

The period from 2004 onward

In 2004, at the 26th Annual Meeting the first NAFO Annual Compliance Review for the year of 2003 was adopted ([FC Doc. 04/13](#) (NAFO, 2004h)). 13 data tables were drawn up on the basis of Contracting Parties obligations under NCEM, and basing on them incidents of Contracting Parties or vessels non-compliance were assessed. Although satisfied with the results the delegates agreed to further improve the process and address the issue at STACTIC intersessional meetings ([Meet. Proc. 2004-05](#), Section II (NAFO, 2005a)).

In the Review delays had been noted with regard to reports of follow up to citations of infringements (Table 4). However, such information might be provided at a later date as under Article 35 of NCEM Contracting Parties had to notify the disposition of infringements twice a year. Therefore it was agreed that this information included into FC Doc. 04/5 (summary of information on disposition of apparent infringements prior to 2003, reported by individual Contracting Parties to the NAFO Secretariat in 2004) provided a more accurate impression of the situation as it was updated on an ongoing basis. Parties agreed on the need to ensure that compilation tables and information on the disposition of infringements in FC Doc.04/5 were up to date. It was concluded that the table was of limited value since it dealt with reported infringements rather than follow-up and therefore showed only occasions when requirements under the scheme were not followed. It was agreed the quality and detail of the report i.e. whether any action was taken and the details of that action, were more important than the quantity of reports.

In 2005 delegations acknowledged that the review process needed further development with measurable parameters. In the Annual Compliance Review – 2004 according to analysis of infringement tables recurring incidents of citations and areas of apparent infringements were indicated with respect to vessels compliance ([Meet. Proc. 2005-06](#), Section II (NAFO, 2006a)). Also the need was stressed to have a measurable and objective way to access compliance. To this end it was suggested to focus the future reports on 2 parts: requirements of Contracting Parties to provide reports and other information, and vessel compliance with NCEM both at sea and in port (to help Contracting parties to develop control strategies). Standardized methodology was agreed as needed to do comparison with respect to relative compliance from year to year and the focus areas, and in this context it was decided to state in further reviews both current and historic data so that compliance trends could be observed. To perform these tasks the Compliance Report Drafting Group (CRDG) was established.

In 2006 modifications were made to the report with regards to more concise compilation of compliance data basing on the Secretariat's producing a preliminary compliance report containing all documents/reports submitted by Contracting Parties (phase I) for further review of STACTIC (phase II). Under phase II assessment was made of disposition of infringements. Information on follow up to infringements was moved to Table 13, which was expanded to include outstanding infringements that were not reported on previously, including the details issued. In that information outstanding infringements were carried forward to next year until the Contracting Party provides official documentation on the conclusion of the infringement (penalties, actions etc.) ([Meet. Proc. 2006-07](#), Section III (NAFO, 2007b)).

At the 2007 Annual Meeting on the issue of Compliance Review differentiating between serious and other citations was proposed, also work continued on developing compliance evaluation formats with reduced redundancies and more concise trend analysis. In the Annual Compliance Review ([FC Doc.07/23](#) (NAFO, 2007h)) on the issue of follow up on infringements it was concluded that report submission by Contracting Parties was improving however timeliness was still a concern, and that it could take about 2 years for follow up to citations. Information on follow up to citations (as of July 2007) was presented in Table R-6 of the document:

Year	2004	2005	2006
1. Number of at-sea and port inspection reports with citations	24	26	29
2. Number of citations cases solved	24	19	11
* <i>Citations solved/citations issued, %</i>	100	73	34



At the 30th Annual Meeting (September 2008) the Annual Compliance Review 2008 was presented and adopted ([FC Doc. 08/20](#) (NAFO, 2008n)), which contained *inter alia* the new sections: 5. Follow up to infringements, and 6. Observed trends (period 2004 - 2007).

Regarding follow-up to infringements it was underlined that flags States are obligated to follow-up with further investigations and legal prosecution when NAFO inspectors issue a citation against a Contracting Party vessel. The Secretariat received information on the status of each case. As the legal procedure could take longer than one year it was, therefore, not expected that by 2008 all cases of the previous years could be resolved. More detailed information on legal resolution of citations was given in the Review (Figure 8 and Table 6, as of January 1, 2008):

Year	2004	2005	2006	2007
1. Number of citations issued	24	26	28	32
2. Number of cases pending	0	9	3	13
3. Number of resolved cases	24	16	21	14
4. Number of cases with no follow up information	0	1	4	5
* Resolved cases/citations issued, %	100	62	75	44

According to the compliance trends for the period 2004 to 2008 contained in the Annual Compliance Review 2009 ([FC Doc. 09/16](#) (NAFO, 2009m)) the follow-up on apparent infringements was of concern, with an increasing percentage of cases having no follow-up information from the Contracting Party. For example, although the total number of citations declined in 2008 by 75 percent, the number of cases with no follow-up information declined only by 40 percent. It was presumed that a Contracting Party might be following up on the apparent infringement, but might not have reported the status back to the NAFO Secretariat.

Market related measures

In 1996 it was decided to identify annually those non-Contracting Parties whose vessels had been fishing for regulated species in the NRA in a manner which diminished the effectiveness of the relative conservation and management recommendations of the Fisheries Commission, based on the catch data compiled by NAFO, the trade information and other information obtained in ports and at the fishing grounds (a list of non-cooperative states, or so called "black list" of vessels).

Contracting Parties were recommended to take non-discriminatory trade restrictive measures, consistent with their international obligations, on regulated species products in any form from NCP (GC Doc.96/5).

In 1998 provisions for possible inclusion in the NAFO Conservation and Enforcement Measures to enhance the NCP Scheme. The paper proposed to include the NCP Scheme's prohibition to receive transshipments from sighted NCP vessels and the sharing/distribution of information of sightings of NCP fishing activities in the NRA. Importance of consistency between the two schemes was underlined ([Meet. Proc., 1998](#), Section VI (NAFO, 1999a)).

In 1999 the Parties agreed that the term "non-Contracting Party vessel" as used in the NCP Scheme shall include vessels for which there are reasonable grounds for suspecting them to be without nationality, and in such cases a NAFO Contracting Party may board and inspect the vessel.

To improve international co-operation with other international fishery organizations, it was decided to share information on NCP vessels in the NEAFC Regulatory Area with the Secretariats of NEAFC, NASCO, ICCAT, IBSFC and CCAMLR. In turn the NAFO Executive Secretary shall circulate to all NAFO Contracting Parties information on NCP activity reported to him by other RFMOs.

At the 24th Annual Meeting (September 2002) it was confirmed that NAFO needed a comprehensive and effective system to exchange information among Contracting Parties on transshipments and other issues of illegal, unregulated and unreported (IUU) fishing.

With adoption of FAO IPOA - IUU the Drafting Group engaged in the overhaul of the NAFO Conservation and Enforcement Measures is recommended to examine if measures relating to all relevant provisions of the FAO IPOA - IUU have been established in NAFO and to review the possible incorporation of the entirety of the NCP Scheme in the Conservation and Enforcement Measures as part of its work ([Meet. Proc. 2002](#), Section VII (NAFO, 2003a)).



In 2003 discussion continued on implementation of the FAO IPOA - IUU in NAFO, specifically attention was drawn to work that required pursuant to paragraphs inter alia 80.10 (adoption, where appropriate, of market-related measures in accordance with the IPOA) and 81 (provisions relating to sharing information on IUU activities with other RFMOs).

Besides, it was recommend to consider development of a trade-tracking system, particularly for Greenland halibut, and the elaboration of a Scheme for Contracting Parties with content similar to that of the NCP Scheme, because there was an opinion that in order to meet the WTO requirements that trade measures not unjustifiably discriminate between Parties and Non-Contracting Parties, it would be necessary to ensure that NAFO have in place sanctions of equal severity for Contracting Parties ([Meet. Proc. 2003-04](#), Section I (NAFO, 2004a)).

In 2004 a proposal was presented for a joint scheme between NAFO and NEAFC (STACFAC Working Paper 04/8) for NCP vessels to promote the compliance of these vessels present in both NAFO and NEAFC Regulatory Areas.

Also it was suggested that the General Council task the Secretariat to reformat the review of information on NCPs vessels, including the history of specific Non-Contracting Party vessels fishing from year-to-year in the NAFO Regulatory Area (similar to ICCAT).

Given an IUU list of NCP vessels will be put on the NAFO public website, to prevent discrimination under the WTO rules any similar list of Contracting Party problem vessels was suggested in the future also be on the NAFO public website. There was no consensus on the inclusion of provisions relating to trade restricted measures against NCPs in the revised NCP Scheme.

In 2005 discussions were continued on a modification of the NCP Scheme . In particular, no consensus was reached on adoption of trade sanctions consistent with the WTO rules in respect of non-Contracting Parties and Contracting Parties' cooperation in this regard to adopt appropriate multilaterally agreed trade related measures, consistent with the WTO, that may be necessary to prevent, deter, and eliminate the IUU fishing activities identified in the NRA. It was noted that multilateral trade measures may be used to support cooperative efforts to ensure that trade of fishing products from the NRA does not in any way encourage IUU fishing or otherwise undermine the effectiveness of NAFO Conservation and Enforcement Measures which are consistent with the United Nations Convention on the Law of the Sea 1982 ([Meet. Proc. 2005-06](#), Section I (NAFO, 2006a)).

Summary information on NAFO agreed actions with regards to NCP vessels was approved and suggested for use as a basis for disseminating information to other RFMOs ([Meet. Proc. 2005-06](#), Section I (NAFO, 2006a)).

In 2006 Amendments to the Rules of Procedures and the CEM were adopted to reflect the merging of STACFAC and STACTIC. In order to improve effectiveness of the NAFO and NEAFC Schemes to promote compliance by NCP vessels, it was suggested that NAFO and NEAFC Contracting Parties should mutually recognize IUU lists of NEAFC and NAFO respectively with regard to vessels flagged to neither NAFO nor NEAFC Contracting Parties. Relevant modifications of the NCP Scheme with regards to recognition of NEAFC IUU-listed vessels and follow-up actions were made to ensure the coherence with the NEAFC measures ([Meet. Proc., 2006-07](#), Section II (NAFO, 2007b)).

It was noted that the NCP scheme was successfully hindering the activities of IUU vessels and incurring higher costs to their activities (example was of excellent cooperation among NAFO Contracting Parties and some NCPs in case of a certain IUU vessel being denied permission to land despite known attempts to do so in Korea, Japan, Hong Kong). Since there were no records of new IUU vessels in the Northwest Atlantic since 2006, at present there is no Provisional IUU List on the NAFO website.



Annex 1 of Appendix XIII. The evolution of NAFO Conservation and Enforcement Measures in the period 1982 (1st publication of the NCEM) – 2003 (overhaul of the NCEM).

NAFO Conservation and Enforcement Measures	1982 NCEM (FC Doc 82/1X/1 3)	1988 NCEM (FC Doc 88/1)	1991 NCEM (FC Doc 91/7)	1992 NCEM (FC Doc 92/21)	1994 NCEM (FC Doc 94/1)	1996 NCEM (FC Doc 96/1)	1998 NCEM (FC Doc 98/1)	2000 NCEM (FC Doc 00/1)	2003 NCEM (FC Doc 02/9; FC Doc 03/1)
PART I. MANAGEMENT									
A. Quotas	√	√	√	√	√	√	√	√	√
B. Chartering Operations								√	√
C. Quota Adjustments	√	√	√	√	√	√	√	√	√
D. Recording of Catch	√	√	√	√	√	√	√	√	√
E. Minimum Fish Size					√	√	√	√	√
F. Other Measures-No directed fishery for Cod in Div. 3L in the Regulatory Area				√	√	√	√	√	√
G. Other Measures-Management measures for Shrimp in Div. 3M					√	√	√	√	√
H. Other Measures-Management measures for Shrimp in Div. 3NO					√	√	√	√	√
I. Other Measures-No directed fishery for Witch in Div. 3L in the Regulatory Area							√	√	√
J. No transshipment of fish from Non-Contracting Party Vessels								√	√
K. Other Measures – Management Measures for Shrimp in Division 3L					√	√	√	√	√
PART II. GEAR									
A. Definitions	√	√	√	√	√	√	√	√	√
B. Meshes						√	√	√	√
C. Mesh Size	√	√	√	√	√	√	√	√	√
D. Chafers	√	√	√	√	√	√	√	√	√
E. Marking			√	√	√	√	√	√	√
Small boats and fixed fishing gear									
PART III. VESSEL REQUIREMENTS									
A. Marking of Fishing Vessel			√	√	√	√	√	√	√
B. Documentation			√	√	√	√	√	√	√
C. Notification of Research Vessels	√	√	√	√	√	√	√	√	√
D. Notification of Fishing and Processing Vessels	√	√	√	√	√	√	√	√	√
E. Hail System			√	√	√	√	√	√	√
Annex I – Hail System Message Format			√	√	√	√	√	√	√
Annex II – VMS Report Format									√
Annex III – Notification of Authorized Vessels									√
PART IV SCHEME OF JOINT INTERNATIONAL INSPECTION AND SURVEILLANCE									
Annex I Inspector's/Trainee's Document of Identity	√	√	√	√	√	√	√	√	√
Annex II Inspection Pennants		√	√	√	√	√	√	√	√
Annex III Construction and Use of Boarding Ladders	√	√	√	√	√	√	√	√	√
Annex IV Helicopter Hoist Procedure	√	√	√	√	√	√	√	√	√
Annex V Report of Inspection	√	√	√	√	√	√	√	√	√
Annex VI Inspection Questionnaire	√	√	√	√	√	√	√	√	√
Annex VII NAFO Inspection Seal			√	√	√	√	√	√	√
Annex VIII Surveillance Report			√	√	√	√	√	√	√
PART V. SCHEDULES									
Schedule I Quota Table	√	√	√	√	√	√	√	√	√
Schedule II Logbook Entries	√	√	√	√	√	√	√	√	√
Schedule III Record of Cumulative Catch	√	√	√	√	√	√	√	√	√
Schedule IV Authorized Mesh Size of Nets	√	√	√	√	√	√	√	√	√
Schedule V Certified Mesh Measuring Gauges	√	√	√	√	√	√	√	√	√
Schedule VI Authorized Topside Chafers	√	√	√	√	√	√	√	√	√
Schedule VII Minimum Fish Size				√	√	√	√	√	√
PART VI. PROGRAM FOR OBSERVERS AND SATELLITE TRACKING				1	1	1	1	√	√
PART VII. PORT INSPECTIONS						√	√	√	√
PART VIII. PROVISIONS ON SECURE AND CONFIDENTIAL TREATMENT OF ELECTRONIC REPORTS AND MESSAGES TRANSMITTED PURSUANT TO PART III.E, VI AND VII OF THE CONSERVATION AND ENFORCEMENT MEASURES									√



Annex 2 of Appendix XIII. The integration of the 2003 measures into the 2004 NCEM

Article Title	NCEM 2004 (FC Doc. 04/1)	NCEM 2003
Scope	Article 1	
Definitions	Article 2	
	Chapter I-Conservation and Management Measures	
Quotas	Article 3	Part I.A.1-3 FC Doc. 02/9
Cod in Divisions 2J3KL	Article 4	Part I.A.4 FC Doc. 02/9
Shrimp in Division 3M	Article 5	Part I.G FC Doc. 02/9 Part I.G FC Doc. 03/1
Shrimp in Division 3L	Article 6	Part I.K FC Doc. 02/9 Part I.K FC Doc. 03/1
Greenland halibut in subareas 2 and divisions 3KLMNO	Article 7	
Quota Adjustments	Article 8	Part I.C FC Doc. 02/9
By-catch Requirements ¹⁰¹	Article 9	Part I.A.5 FC Doc. 02/9 Part I.A.5 FC Doc. 03/1
Gear Requirements	Article 10	Part II FC Doc. 02/9
Minimum Fish Size Requirements	Article 11	Part I.E FC Doc. 02/9
Area and Time Restrictions	Article 12.1 (Period of prohibition of fishing for shrimp)	Part I.G.4.e) FC Doc. 02/9 Part I.G.4.e) FC Doc. 03/1
	Article 12.2 (Fishing area for shrimp in Division 3L)	Part I.K.4 FC Doc. 02/9 Part I.K.4 FC Doc. 03/1
	Article 12.3 (Closed area in Division 3M)	Part I.G.4.h) FC Doc. 02/9 Part I.G.4.g) FC Doc. 03/1
	Article 12.4 (Period of prohibition of fishing for squid)	
	Chapter II Control measures	
Authorization to fish	Article 13	
Chartering Arrangements	Article 14	Part I.B FC Doc. 02/9 ¹⁰²
Vessel Register	Article 15.1 (fishing vessels)	Part III.D.1,4 FC Doc. 02/9 Part III.D.1,4,5 FC Doc. 03/1 (less requirements, list and not a register)
	Article 15.2 (Vessels subject to bare boat chartering)	
	Article 15.3-5 (Research vessels)	Part III.C FC Doc. 02/9
	Articles 15.6 and 15.7	
Vessel Requirements	Article 16	Part III.A, B.2-3 FC Doc. 02/9
Marking of Gear	Article 17	Part II.E FC Doc. 02/9
Product Labeling Requirements	Article 18	Part I.K.12 FC Doc. 02/9 Part I.K.12 FC Doc. 03/1
	Chapter III Monitoring of fisheries	
Recording of Catch	Article 19	Part I.D.1,2 FC Doc. 02/9
Reporting of Catch and Fishing Effort	Article 20.1 and 20.2	Part I.D.3 FC Doc. 02/9
	Article 20.3	
	Article 20.4	Part I.K.13 FC Doc. 02/9

¹⁰¹ Previously called "Incidental Catch Limits"

¹⁰² The Chartering operations provisions were a pilot project in 2002 (see Part I.B.8 FC Doc. 02/9)



		Part I.K.13 FC Doc. 03/1
Vessel Monitoring System (VMS)	Article 21	Part III E and Part III Annex I of FC Doc 02/9
Communication of catches	Article 22	Part III E and Part III Annex I of FC Doc 02/9
Article 23 - Observer Program	Article 23	Part III E and Part III Annex I of FC Doc 02/9
	Chapter IV Joint inspection and surveillance scheme	
General Provisions	Article 24.1	Part IV.1.(i) FC Doc. 02/9
	Article 24.2	
	Article 24.3	
	Article 24.4	
	Article 24.5	Part IV.1.(iii) FC Doc. 02/9
	Article 24.6	Part IV.2 FC Doc. 02/9
	Article 24.7	Part IV.3 FC Doc. 02/9
	Article 24.8	Part IV.5. (iv) FC Doc. 02/9
Notification Requirements	Article 24.9	Part IV.6. (iv) FC Doc. 02/9
	Article 25.1	Part IV.1.(ii) FC Doc. 02/9
	Article 25.2	Part IV.1.(v),(vii) and (viii) FC Doc. 02/9
	Article 25.3	Part IV.15 FC Doc. 02/9
	Article 25.4	Part IV.1.(ix) FC Doc. 02/9
Inspectors	Article 25.5	Part IV.3 FC Doc. 02/9
	Article 26.1	Part IV.1.(iv) FC Doc. 02/9
Surveillance Procedure	Article 26.2	Part IV.1.(vi) FC Doc. 02/9
	Article 27.1 and 27.2	Part IV.11.(i) FC Doc. 02/9
	Article 27.3	Part IV.11.(iii) FC Doc. 02/9
	Article 27.4	Part IV.11.(iv) FC Doc. 02/9
Inspection Procedure	Article 27.5	Part IV.16 FC Doc. 02/9
	Article 28.1	Part IV.4.(iii) FC Doc. 02/9
	Article 28.2	Part IV.4.(i) FC Doc. 02/9
	Article 28.3	Part IV.5.(ii) FC Doc. 02/9
	Article 28.4	Part IV.5.(iv) FC Doc. 02/9
	Article 28.5	Part IV.6. (ii). (a),(b),(c),(d) FC Doc. 02/9
	Article 28.6	Part IV.6.(i) FC Doc. 02/9
	Article 28.7	
	Article 28.8	Part IV.6. (ii).(e) FC Doc. 02/9
	Articles 28.9, 28.10 and 28.11	Part IV.6.(i) FC Doc. 02/9
Obligations of Vessel Masters During Inspection	Article 28.12	
	Article 29	Part IV.5.(ii) FC Doc. 02/9
Inspection Reports	Article 30	Part IV.6. (i) FC Doc. 02/9
Procedures to deal with Infringements	Article 31.1	Part IV.6. (iii) FC Doc. 02/9
	Article 31.2	Part IV.6. (v) FC Doc. 02/9
Serious Infringements ¹⁰³	Article 32.1	Part IV.6. (iv) and Part IV.9 FC Doc. 02/9
	Articles 32.2, 32.3, 32.4 and 32.5	Part IV.10. (i) and (v) FC Doc. 02/9
	Article 32.6	Part IV.6. (iv). (c) FC Doc. 02/9
	Article 32.7	Part IV.10. (ii) FC Doc. 02/9
	Article 32.8	Part IV.10. (iv) FC Doc. 02/9
Follow up to	Article 32.9	Part IV.10. (iii) FC Doc. 02/9
	Articles 33.1 and 33.2	Part IV.7 FC Doc. 02/9

¹⁰³ Previously called “apparent infringement”



Infringements	Article 33.3	Part IV.14 FC Doc. 02/9
	Article 33.4	Part IV.12 FC Doc. 02/9
	Article 33.5	
Treatment of Reports from Inspectors	Article 34	Part IV.14 FC Doc. 02/9
Report on Infringements	Article 35	Part IV.17 FC Doc. 02/9
Reports on Inspection and Surveillance Activities	Article 36	Part IV.16 FC Doc. 02/9
Interpretation or Application	Article 37	Part IV.18 FC Doc. 02/9
	Chapter V Inspections in port	
Port Inspection Procedures	Article 38	Part VII.1.(i) to (v) and Part VII.2 FC Doc. 02/9
Transmission of Port Inspection Reports	Article 39	Part VII.1. (vi), (vii), (viii) FC Doc. 02/9
	Chapter VI Scheme to promote compliance by non-contracting party vessels	
Sightings at sea	Article 40	
Prohibition of transhipments	Article 41	
Inspections at sea	Article 42	
Inspections in port	Article 43	
Final provisions	Article 44	
	Chapter VII Pilot project on observers, satellite tracking and electronic reporting	
Scope	Article 45	
Implementation	Article 46	
Daily reports	Article 47	
Data collection/ compilation/analysis	Articles 48.1, 48.2, 48.3	
	Article 48.4	Part VI.B.8 FC Doc. 02/9 Part VI.B.8 FC Doc. 03/1
Confidentiality	Article 49	
Costs	Article 50	Part VI.B.10 FC Doc. 02/9 Part VI.B.10 FC Doc. 03/1
Follow-up	Article 51	
	ANNEXES	
Annual Quota Table	Annex I.A	Part V-Schedule I FC Doc. 02/9 Part V-Schedule I- Appendix II FC Doc. 03/1
Effort Allocation Scheme for Shrimp Fishery in the NAFO Regulatory Area Division 3M, 2004	Annex I.B	
Rebuilding plan for Divisions 3LMNO Greenland halibut	Annex I.C	
List of species	Annex II	Part V-Schedule II-Attachment II FC Doc. 02/9
Minimum Fish Size	Annex III	Part V-Schedule VII FC Doc. 02/9
Formats for Register of Vessels	Annex IV	
	Annex IV (B)	Part III.C.3 FC Doc. 02/9
Fishing Vessel Codes	Annex V	
Gear Codes	Annex VI	Part V-Schedule II-Attachment I FC Doc. 02/9



Vessel documents	Annex VII	Part III.B.1 FC Doc. 02/9
Recording of Catch (Logbook Entries)	Annex VIII	Part V-Schedule II FC Doc. 02/9
VMS Data Format	Annex IX	Part III-Annex II FC Doc. 02/9 Part III-Annex III FC Doc. 03/1
Format for the communication of catches and reports by fishing vessels	Annex X	Part III-Annex I FC Doc. 02/9 Part III-Annex I FC Doc. 03/1
Report of Inspection	Annex XI	Part IV-Annex V FC Doc. 02/9
Surveillance Report Form	Annex XII	Part IV-Annex VIII FC Doc. 02/9
Port Inspection Report	Annex XIII	Part VII-Schedule I FC Doc. 02/9
Mesh Measurements and Gauges	Annex XIV	Part V-Schedule V FC Doc. 02/9
Authorised Topside Chafers	Annex XV	Part V-Schedule VI FC Doc. 02/9
Document of Identity	Annex XVI	Part IV-Annex I FC Doc. 02/9
Inspection Pennants	Annex XVII	Part III-Annex II FC Doc. 02/9
NAFO Inspection Seal	Annex XVIII	Part IV-Annex IV FC Doc. 02/9
List of species of relevance for Chapter VI	Annex XIX	
Rules on confidentiality	Annex XX	Part VIII FC Doc. 03/1
Daily catch report/observer report	Annex XXI(A)	
Weekly reports	Annex XXI(B)	



Annex 3 of Appendix XIII. The evolution of NAFO Conservation and Enforcement Measures in the period 2004 – 2011.

Article Title*	2004 Article No.	2005 Article No.	2006 Article No.	2007 Article No.	2008 Article No.	2009 Article No.	2010 Article No.	2011 Article No.
Scope	1	1	1	1	1	1	1	1
Definitions	2	2	2	2	2	2	2	2
Chapter I Conservation and Management Measures								
Quotas	3	3	3	3	3	3	3	3
Cod in Divisions 2J3KL	4	4	4	4	4	4	4	4
Shrimp in Division 3M	5	5	5	5	5	5	5	5
Shrimp in Division 3L	6	6	6	6	6	6	6	6
Greenland Halibut in Subareas 2 and Divisions 3KLMNO	7	7	7	7	7	7	7	7
Greenland Halibut in Subareas 2 and Divisions 3KLMNO - Additional Control measures	-	-	-	-	8	8	8	8
3NO Cod Conservation Plan and Rebuilding Strategy	-	-	-	-	9	9	9	9
Quota Adjustments	8	8	8	8	10	10	10	10
Quota Transfer	-	-	-	-	-	11	11	11
By-Catch Requirements	9	9	9	9	11	12	12	12
Gear Requirements	10	10	10	10	12	13	13	13
Minimum Fish Size Requirements	11	11	11	11	13	14	14	14
Area and Time Restrictions	12	12	12	12	14	15	15	15
Coral and Sponge Protection Zone	-	-	-	-	15	16	16	16
Conservation and Management of Sharks	-	-	13	13	16	17	17	17
Chapter Ibis Bottom Fisheries in the NAFO Regulatory Area								
Purpose and definitions	-	-	-	-	-	1bis	1bis	1bis
Identification of existing bottom fishing areas (footprint)	-	-	-	-	-	2bis	2bis	2bis
Bottom fishing activities in new fishing areas	-	-	-	-	-	3bis	3bis	3bis
Assessment of bottom fishing	-	-	-	-	-	4bis	4bis	4bis
Interim Encounter Provision	-	-	-	-	-	5bis	5bis	5bis
Review	-	-	-	-	-	6bis	6bis	6bis
Chapter II Control Measures								
Authorization to Fish	13	13	14	14	17	18	18	18
Chartering Arrangements	14	14	15	15	18	19	19	19
Vessel Register	15	15	16	16	19	20	20	20
Vessel Requirements	16	16	17	17	20	21	21	21
Marking of Gear	17	17	18	18	21	22	22	22
Product Labelling Requirements	18	18	19	19	22	23	23	23



Article Title*	2004 Article No.	2005 Article No.	2006 Article No.	2007 Article No.	2008 Article No.	2009 Article No.	2010 Article No.	2011 Article No.
Chapter III Monitoring of Fisheries								
Recording of Catch and Stowage	19	19	20	20	23	24	24	24
Reporting of Catch and Fishing Effort	20	20	21	21	24	25	25	25
Vessel Monitoring System (VMS)	21	21	22	22	25	26	26	26
Communication of Catches	22	22	23	23	26	27	27	27
Observer Program	23	23	24	24	27	28	28	28
IV Joint Inspection and Surveillance Scheme								
General Provisions	24	24	25	25	28	29	29	29
Notification Requirements	25	25	26	26	29	30	30	30
Inspectors	26	26	27	27	30	31	31	31
Surveillance Procedure	27	27	28	28	31	32	32	32
Inspection Procedure	28	28	29	29	32	33	33	33
Obligations of Vessel Masters During Inspection	29	29	30	30	33	34	34	34
Inspection Reports	30	30	31	31	34	35	35	35
Procedures to Deal with Infringements	31	31	32	32	35	36	36	36
Serious Infringements	32	32	33	33	36	37	37	37
Enhanced Follow-up with regard to certain Serious Infringements	-	-	-	34	37	38	38	38
Follow-Up to infringements	33	33	34	35	38	39	39	39
Enforcement Measures	-	-	-	36	39	40	40	40
Treatment of Reports from Inspectors	34	34	35	37	40	41	41	41
Report on Infringements	35	35	36	38	41	42	42	42
Reports on Inspection and Surveillance Activities	36	36	37	39	42	43	43	43
Interpretation or Application	37	37	38	40	43	44	44	44
V Port State Control								
Scope	38	38	39	41	44	45	45	45
Duties of the Port State Contracting Party	39	39	40	42	45	46	46	46
Duties of the Flag State Contracting Party	-	-	-	-	-	47	47	47
Obligations of the Master of a Fishing Vessel	-	-	-	-	-	48	48	48
Duties of the Executive Secretary	-	-	-	-	-	49	49	49
Serious Infringements	-	-	-	-	-	50	50	50
VI Scheme to promote Compliance by non-CP vessels with recommendations established by NAFO								
Scope and Objectives	40	40	41	43	46	51	51	51
Prohibitions of Transhipments	41	41	-	-	-	-	-	-



Article Title*	2004 Article No.	2005 Article No.	2006 Article No.	2007 Article No.	2008 Article No.	2009 Article No.	2010 Article No.	2011 Article No.
Sightings and identifications of non-CP vessels / Presumption of NCP vessels undermining NAFO CEM	-	-	42	44	47	52	52	52
Inspection at Sea	42	42	43	45	48	53	53	53
Entry and Inspection in Port	43	43	44	46	49	54	54	54
Fishing Activities	-	-	45	47	50	55	55	55
Notification of presumed IUU activities and establishment of a Provisional List	-	-	46	48	51	56	56	56
Establishment of the IUU List	-	-	47	49	52	57	57	57
Follow-up Actions	-	-	48	50	53	58	58	58
Actions vis-à-vis Flag States	-	-	49	51	54	59	59	59
Final provisions	44	44	-	-	-	-	-	-
Chapter VII Electronic reporting, Satellite tracking and Observers								
Scope	45	45	50	52	55	60	60	60
Implementation	46	46	51	53	56	61	61	61
Daily Reports	47	47	52	54	57	62	62	62
Data Collections/Compilation/Analysis	48	48	53	55	58	63	63	63
Confidentiality	49	49	54	-	-	-	-	-
Costs	50	50	55	56	59	64	64	64
Evaluation	51	51	56	57	60	65	65	65
Annexes								
Annex Title*	2004 Annex No.	2005 Annex No.	2006 Annex No.	2007 Annex No.	2008 Annex No.	2009 Annex No.	2010 Annex No.	2011 Annex No.
Annual Quota Table	I.A							
3M Shrimp Effort Allocation	I.B							
Greenland Halibut TAC 2004-2007	I.C	I.C	I.C	I.C	-	-	-	-
List of Species	II							
Minimum Fish Size	III							
Formats for Register of Vessels	IV							
Fishing Vessel Codes	V	V	V	V	V	V	V	V
Gear Codes	VI							
Vessel Documents	VII							
Recording of Catch (Logbook entries)	VIII							
VMS Data Format	IX							



Annex Title*	2004 Annex No.	2005 Annex No.	2006 Annex No.	2007 Annex No.	2008 Annex No.	2009 Annex No.	2010 Annex No.	2011 Annex No.
Format for the Communication of Catches and reports by Fishing Vessels	X	X	X	X	X	X	X	X
Report of Inspection	XI							
Surveillance Report Form	XII							
Report on port State Control Inspection	XIII							
Mesh Measurements and Gauges	XIV							
Authorized Topside Chafers	XV							
Document of Identity	XVI							
Inspection Pennants	XVII							
NAFO Inspection Seal	XVIII							
List of Species in relevance for Chapter VI	XIX	XIX	-	-	-	-	-	-
Rules of Confidentiality	XX	XX	XIX	XIX	XIX	XIX	XIX	XIX
Daily Catch Report/Observer Report	XXI-A	XXI-A	XX-A	XX-A	XX-A	XX-A	XX-A	XX-A
Weekly Reports	XXI-B	XXI-B	XX-B	XX-B	XX-B	XX-B	XX-B	XX-B
Product Form Codes	-	XXI-C	XX-C	XX-C	XX-C	XX-C	XX-C	XX-C
Shrimp Toggle Codes	-	XXII	XXI	XXI	XXIV	XXIV	XXIV	XXIV
Data Exchange Format and Protocols	-	XXIII	XXII	XXII	XXII	XXII	XXII	XXII
Construction and use of boarding ladders	-	-	-	-	XXIII	XXIII	XXIII	XXIII
Port State Control Prior Notification Forms	-	-	-	-	-	XXIV	XXIV	XXIV
Templates for the Exploratory Fishery Protocol for New Fishing Areas	-	-	-	-	-	XXV	XXV	XXV

*Certain Article and Annex titles were slightly modified through the period 2004-2011.

