

Northwest Atlantic Fisheries Organization



Report of the Ad Hoc Working Group of Fishery Managers and Scientists
on Vulnerable Marine Ecosystems (WGFMS)
17 – 18 September 2009
Bergen, Norway

NAFO
Dartmouth, N.S., Canada
2009

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Report of the ad hoc Working Group of Fishery Managers and Scientists (WGFMS)

17 – 18 September 2009

Bergen, Norway

1. Opening by the Chair

The Chair (Bill Brodie, Canada) opened the meeting at 9:35 a.m. on Thursday, September 17, 2009 and welcomed the delegates to the Directorate of Fisheries in Bergen (Annex 1).

2. Appointment of the Rapporteur

Ricardo Federizon (NAFO Secretariat) was appointed the rapporteur.

3. Adoption of Agenda

USA suggested the addition of an item – Impact assessment in relation to Article 4bis of the NAFO Conservation and Enforcement Measures. It was determined that this topic can be covered under item 5. The draft provisional agenda previously circulated was adopted (Annex 2).

4. Review of recent information on sponges (from the June 2009 Scientific Council Meeting)

In response to the 2008 Fisheries Commission request for advice, specifically on the provision of scientific information on the concentration on sponges in the NAFO Regulatory Area (items 9b and 9c of FC Doc 08/19), the Scientific Council Working Group on Ecosystem Approach to Fisheries Management (WGEAFM) met by correspondence in spring 2009. The results of the WGEAFM meeting are contained in document SCS Doc. 09/06; and the Scientific Council Response to the Fisheries Commission Request, based on this report and agreed upon during the June 2009 Meeting are contained in SCS Doc. 09/23 (pages 25-36).

Don Power (Scientific Council Chair) presented the Scientific Council response. He outlined the methodology used in identifying the locations/areas of concentration of sponges in the NRA. Sponge grounds, predominantly comprising of *Geodia spp.* were evaluated. The cumulative catch curve method and a GIS-based method were applied to research survey data to derive weight threshold criteria of 75 kg to identify the areas of significant sponge concentrations. The locations of the significant concentrations are shown in Figure 2 on page 29 of the Scientific Council June 2009 meeting report (SCS Doc. 09/23).

The Scientific Council Chair noted that:

- the 4nm buffer zone delineating the areas of significant concentrations was considered conservative and precautionary;
- high resolution habitat mapping is required in determining coral and sponge habitat boundaries with greater certainty;
- the identified high-concentration areas do not suggest an alteration of the location of the candidate VMEs previously identified (Figure 3 in page 40 of SCS Doc. 08/19).

Regarding item 9c of the Fisheries Commission request, the Scientific Council Chair indicated that it is an integration of items 9a (on corals) and 9b (on sponges). The area or location where high concentrations of both corals and sponges occur is in candidate-VME4 in the southern Flemish Pass to Eastern Canyon. The Scientific Council response to item 9a of the Fisheries Commission request had been presented in the previous meeting of this Working Group (FC Doc. 09/2).

Japan provided a critique on the Scientific Council presentation, which questioned the quantity of 75 kg used by Scientific Council as the threshold criterion. In the Japanese analysis, by using a blend of “cumulative catch curve” and “density” methods, the threshold quantity increased to 575 kg. EU expressed concern that the Scientific Council did not use commercial data which could allow a more realistic threshold quantity. Russia expressed concern that it cannot accept the Scientific Council’s threshold being used as the basis of determining encounter threshold quantity.

It was clarified that the Scientific Council threshold of 75 kg was used solely for the purpose of identifying areas of high concentration, not as an encounter threshold quantity which would be the decision of the Fisheries Commission based upon any recommendation of this Working Group.

5. Review of relevant Scientific Council advice and consideration of recommendations to prevent significant adverse impacts on vulnerable marine ecosystems (VMEs)

Discussions centered on Article 4bis of the NAFO Conservation and Enforcement Measures (NCEM), particularly on subarticle 3. Under this article, Contracting Parties intending to participate in bottom fishing shall submit information and an initial assessment of known and anticipated impacts of its bottom fishing activities on VMEs. The submissions shall be forwarded to the Scientific Council for review.

Problems were encountered during the first year of implementation of this provision. When Contracting Parties were reminded about the submission for their 2010 fishing plans earlier this year (as agreed at the Vigo meeting in March 2009), some Contracting Parties had indicated that they had difficulty in complying because of the lack of guidelines in preparing the submissions. Other Contracting Parties indicated that they could not comply because the quotas and allocations for 2010 were not yet determined, particularly on fish stocks under consideration for re-opening (e.g. cod in Division 3M). Other Contracting Parties also indicated that due to the short span of time, the submission cannot be made in time for the June meeting of the Scientific Council.

Only two submissions were received in time for the Scientific Council meeting in June. The Scientific Council examined the submissions and concluded that due to the limited scientific information in the submissions, it could not perform a scientific evaluation.

In the deliberation, it became apparent that the problem concerning implementation of this article lies on the lack of guidelines in the preparation of the impact assessment and on the timing of submissions. USA pointed out that the “*where possible*” clause in the article might be invoked in avoiding submission obligations. Norway indicated that if Contracting Parties would continue to conduct its traditional fisheries in the NAFO Regulatory Area, an impact assessment might not be necessary. Conditions that might require an impact assessment would be fishing in a new area, participating in a re-opened fishery, fishing involving a new gear, or when new information is available on VMEs.

It was determined that this article deserved closer scrutiny in order to address the problems and issues identified above. It was decided not to forward specific proposal to amend the article. Instead, the matter was brought forward to Fisheries Commission for further review and provision of guidance. The document FCWGWP 09/10, presented by USA, served as the vehicle in forwarding this issue to the Fisheries Commission (see item 7.4).

6. Review of recommendations and follow-up actions from the WGFMS March 2009 Meeting in Vigo, Spain

a. Recommendations on coral

There was no substantive change in the recommendation concerning closure of areas of significant concentrations of corals. This recommendation was formulated during the March 2009 meeting in Vigo during which time it was also recognized that the measures regarding corals might be interlinked with possible sponge fields, e.g. overlaps of significant concentration of coral and sponge areas. This linkage was put into consideration when the recommendation for closures of sponge areas was developed (see item 7.1 on corals).

In the formulation of recommendations on sponges, the key concentrations were established by grouping aggregations of significant sponge encounters. A small number of geographically isolated encounters, i.e. outliers, were excluded. The overlap of sponge and coral areas led to the proposal to combine the two recommendations (see item 7.1 on sponges).

b. Existing bottom fishing area (footprint)

The submissions of the Contracting Parties were already reviewed by the Working Group at the Vigo (March 2009) meeting and the draft footprint, based on these submissions and prepared by the Secretariat, was already reviewed by the Scientific Council. No action was taken on this matter.

c. Exploratory Data Protocol

The Exploratory Data Collection Form which was tabled at the Vigo (March 2009) meeting was reviewed and revised. The *NAFO Coral Identification Guide* was endorsed for use in identifying coral species on fishing and research vessels (see items 7.3 and 7.5).

On Thresholds:

A number of proposals to lower the threshold level from 100 kg of live coral and 1000 kg of sponges were presented and discussed.

The thresholds were proposed under the expectation that in accordance with the Working Group recommendation, the areas of significant concentration of corals and sponges will be closed to bottom fisheries and thus protected. Hence the thresholds would be applied in existing and new fishing areas, i.e., outside the closures. In proposing the revised thresholds, the Working Group expresses the view that the main objectives should be to 1) ensure detection of potential encounters of remaining and unknown concentrations, and 2) facilitate relevant data collection from commercial vessels to be applied in possible future revisions.

The Working Group recognized the lack of satisfactory scientific basis for proposing revised thresholds to be applied in commercial bottom fisheries. The recommendation for corals derived in the Vigo (March 2009) meeting was that the threshold of 100 kg per fishing operation adopted in 2008 was on the high side and should be revised downwards. For sponges, for which the threshold of 1000 kg per fishing operation was adopted 2008, new information from the Scientific Council on occurrence in scientific surveys was presented in this meeting but no specific advice on levels for commercial fisheries was available. Observations of coral and sponge catch levels in commercial fisheries were not available to the Scientific Council or to the Working Group.

Despite the lack of satisfactory information, the Working Group decided to propose the threshold level of 60 kg of corals and 800 kg of sponges (see item 7.2). The proposal was based on the following considerations:

The Scientific Council, in applying data from survey trawl with a trawl path width of around 19 m and duration of 15 or 30 minutes, found around 4 kg/tow of corals (all taxa polled) and 75 kg/tow of sponges were appropriate for delineating areas of significant concentrations of these VME indicators. As an example, scaling these survey trawl catch quantities to commercial tows (with a 40 m wide trawl towed for 4 hours) would produce levels of at least 60 kg/tow coral and 1200 kg/tow of sponges. In this scaling-up calculation, a single trawl was used whereas in commercial fisheries both double and triple trawls are common. The Working Group recognized the uncertainty in any scaling-up exercise. However, the example may illustrate the scale of commercial catches.

For corals, a threshold level of 60 kg/tow would represent a value at the level obtained by this simple scaling-up exercise. For sponges, a level of 800 kg/tow would be more conservative and precautionary than the corresponding levels proposed for corals.

7. Recommendations to be forwarded to the Fisheries Commission

The Working Group agreed on the following recommendations which were formulated at the Vigo (March 2009) meeting and at this meeting:

1) Mitigation Measures

On Corals:

The WGFMS recommends to the Fisheries Commission the consideration of the proposal to close areas of high concentration of corals in the NAFO Regulatory Area. The specific mitigation measures in the proposal are contained in FCWGWP 09/03 Rev. 2 (Annex 3).

On Sponges:

The WGFMS recommends to the Fisheries Commission the adoption of the proposal to close areas of high concentration of sponges in the NAFO Regulatory Area. The specific mitigation measures in the proposal are contained in FCWGWP 09/11 Revised (Annex 4).

Further, the WGFMS recommends to the Fisheries Commission the consideration of combining the recommendations on the Report of the WGFMS of March 2009 on corals [Annex 6 of NAFO Doc. 09/2) and sponges as defined in item 1 “Establishment of sponge protection zones in Division 3L, 3M and 3N” of FCWGWP 09/11 Revised (Annex 4).

2) Encounter threshold levels

The WGFMS recommends to the Fisheries Commission the adoption of the proposal establishing the threshold levels of 60 kg live corals and 800 kg for sponges in the encounter provisions in the protection of the Vulnerable Marine Ecosystems in the NAFO Regulatory Area. The specifics of the proposal are contained in FCWGWP 09/12 (Annex 5).

3) Exploratory Fishery Data Collection Form

The WGFMS recommends to the Fisheries Commission the adoption of standard form to be used during exploratory fishery in accordance with Article 5bis 2(b) of the NAFO Conservation and Enforcement Measures (NCEM). The form captures all the information required as stipulated in the template Data Collection Plan described in Annex XXV of the NCEM (Annex 6).

4) Impact Assessment of Bottom Fishing

The WGFMS recommends to the Fisheries Commission the review and provision of guidance in relation to Article 4bis – Assessment of bottom fishing, particularly subarticle 3. Under this article, Contracting Parties proposing to participate in bottom fishing in the NAFO Regulatory Area shall submit to the Executive Secretary an initial assessment of the known and anticipated impacts of its bottom fishing activities on vulnerable marine ecosystem, as well as mitigation measures to prevent such impacts.

There is no guiding document to inform Contracting Parties as to what needs to be included in an assessment. Consequently, the submissions of the Contracting Parties lack uniformity. The Fisheries Commission guidance should include the type of information to be contained in these assessments, so that the Scientific Council can consider and provide advice on these, and that the WGFMS can then advise on mitigation measures to prevent Significant Adverse Impacts (SAIs) on Vulnerable Marine Ecosystems (VMEs).

The FCWGWP 09/10 is forwarded to the Fisheries Commission as a springboard for deliberation when the Fisheries Commission conducts the review and provides guidance (Annex 7).

5) NAFO Coral Identification Guide

The WGFMS recommends to the Fisheries Commission the endorsement of the use of the NAFO Coral Identification Guide (Annex 8) in identifying coral correctly on fishing and research vessels.

8. Other Matters

The Chair opened a discussion on the future of this ad hoc Working Group. It was agreed not to forward specific recommendations, and instead, this ad hoc Working Group should await further instructions from the Fisheries Commission.

9. Adoption of report

This report was adopted through correspondence after the meeting.

10. Adjournment

The Chair thanked the participants from all Contracting Parties for their work over the course of the meeting, the Scientific Council Chair for his presentation and contributions, and the NAFO Secretariat for their usual excellent support at the meeting, including the work done by the Rapporteur. He also thanked Norway for hosting the meeting and expressed appreciation for the excellent meeting facilities Norway provided. EU on behalf of the other Contracting Parties thanked the Chair for his efficient work in chairing the session.

The meeting was adjourned at 5:00 PM on September 18, 2009.

Annex 1. List of Participants

Working Group Chair:

Bill Brodie, Senior Science Coordinator/Advisor for NAFO, Fisheries and Oceans Canada, Newfoundland and Labrador Region, Science Br., 80 East White Hills Rd., P. O. Box 5667, St. John's, NL A1C 5X1
Phone: +1 709 772 3288 – Fax: +1 709 772 4105 – E-mail: bill.brodie@dfo-mpo.gc.ca

Scientific Council Chair:

Don Power, Science Br., Fisheries and Oceans Canada, Newfoundland & Labrador Region, 80 East White Hills Rd., P. O. Box 5667, St. John's, NL A1C 5X1
Phone: +1 709 772 4935 – Fax: +1 709 772 4105 – E-mail: don.power@dfo-mpo.gc.ca

CANADA

Head of Delegation:

Morley Knight, Regional Director, Fisheries Management, NL Region, Fisheries and Oceans Canada, P. O. Box 5667, St. John's, NL A1C 5X1
Phone: +709 772 4543 – Fax: +709 772 2046 – E-mail: morley.knight@dfo-mpo.gc.ca

Advisers:

Bruce Chapman, Executive Director, Groundfish Enterprise Allocation Council, 1362 Revell Dr., Manotick, Ontario K4M 1K8

Phone: +1 613 692 8249 – Fax: +1 613 692 8250 – E-mail: bchapman@sympatico.ca

Estelle Couture, Senior Science Adviser, Fish Population Science, Fisheries and Oceans Canada, 200 Kent Street (Stn. 12S45), Ottawa, Ontario K1A 0E6

Phone: +613 990 0259 – Fax: +613 954 0807 – E-mail: estelle.couture@dfo-mpo.gc.ca

Brett Gilchrist, International Fisheries Officer, Straddling and Highly Migratory Fish Stocks, Fisheries and Oceans Canada, 200 Kent St., Ottawa, Ontario K1A 0E6

Phone: +1 613 991 0192 – Fax: +1 613 993 5995 – E-mail: brett.gilchrist@dfo-mpo.gc.ca

Ellen Kenchington, Research Scientist, Fisheries and Oceans Canada, Bedford Institute of Oceanography, 1 Challenger Dr., P. O. Box 1006, Dartmouth, N. S. B2Y 4A2

Phone: +1 902 426 2030 – E-mail: Ellen.Kenchington@dfo-mpo.gc.ca

Ray Walsh, Resource Manager, Fisheries and Aquaculture Management Br., Fisheries and Oceans Canada, P.O. Box 5667, St. John's, NL A1C 5X1

Phone: +709 772 4472 – Fax: +709 772 3628 – E-mail: ray.walsh@dfo-mpo.gc.ca

DENMARK (IN RESPECT OF THE FAROE ISLANDS AND GREENLAND)

Head of Delegation:

Helle I. Ø. Jørgensbye Hansen, Head of Section, Gronlands Fiskerilicenskontrol, Greenland Self Rule, Postbox 501, DK-3900 Nuuk, Greenland

Phone: +299 34 53 76 – Fax: +299 32 32 35 – E-mail: hhan@gh.gl

EUROPEAN UNION

Head of Delegation:

Constantin Alexandrou, Head of Unit, International Affairs, Law of the Sea and Regional Fisheries Organizations, European Commission, Directorate-General for Maritime Affairs and Fisheries (DG MARE.B.1), 200 Rue de la Loi/Wetstraat, B-1049 Brussels, Belgium

Phone: +32 2 296 9493 - Fax: +32 2 295 5700 – E-mail: constantin.alexandrou@ec.europa.eu

Alternate:

Alan Gray, Senior Assistant, European Commission, Directorate-General for Maritime Affairs and Fisheries (DG MARE), International Affairs, Law of the Sea and Regional Fisheries Organisations, Rue Joseph II, 99 (03/34), B-1000 Brussels, Belgium

Phone: +32 2 299 0077 – Fax: +32 2 295 5700 – E-mail: alan.gray@ec.europa.eu

Advisers:**(EU-Portugal)**

Emilia Batista, Directora de Servicos, Departamento dos Recursos, Direccao Geral das Pescas e Aquicultura, Avenida da Brasilia, 1449-030 Lisbon

Phone: +351 213 035 850 – Fax: +351 213 035 922 – E-mail: ebatista@dgpa.min-agriculture.pt

(EU-Spain)

Antonio Vazquez, Instituto de Investigaciones Marinas, Eduardo Cabello 6, 36208 Vigo

Phone: +34 9 86 23 1930 – Fax: +34 9 86 29 2762 – E-mail: avazquez@iim.csic.es

Sagrario Moset, Acuerdos y Organizaciones Regionales de Pesca, Ministerio de Medio Ambiente y Medio Rural y Marino, Velázquez, 144, 2ª Planta, 28006 Madrid

Phone: +34 91 347 61 38 – Fax: +34 91 347 60 42 – E-mail: smosetma@mapya.es

Mar Sacau-Cuadrado, Instituto Español de Oceanografía (IEO), E-36200 Vigo (Pontevedra)

Phone: +34 98 649 2111 – Fax: +34 98 649 86 26 – E-mail: mar.sacau@vi.ieo.es

Juan Manuel Liria Franch, Vicepresidente, Confederación Española de Pesca, C/Velázquez, 41, 4º C, 28001 Madrid

Phone: +34 91 432 34 89 – Fax: + 34 91 435 52 01 – E-mail: jmliria@feope.com

(EU-United Kingdom)

Andy Carroll, Sea Fisheries Conservation Div., Dept. For Environment, Food and Rural Affairs, Area D, 2nd Floor, Nobel House, 17 Smith Square, London SW1P 3JR

Phone: +44 (0)20 7238 3316 – Fax: +44 (0)20 7238 4699 – E-mail: andy.p.carroll@defra.gsi.gov.uk

ICELAND**Head of Delegation:**

Hrefna Karlsdóttir, Special Adviser, Department of International Affairs, Ministry of Fisheries and Agriculture, Skulagata 4, 150 Reykjavik

Phone: +354 545 8300 – Fax: +354 552 1160 – E-mail: hrefna.karlsdottir@slr.stjr.is

JAPAN**Head of Delegation**

Takeru Iida, Far Seas Fisheries Division, Resources Management Dept., Fisheries Agency, Government of Japan, 1-2-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8907

Phone: +81 3 3502 8111 ext. 6726 – Fax: + 81 3 3591 5824 – E-mail: takeru_iida@nm.maff.go.jp

Advisers

Tsutomu Nishida, National Research Institute of Far Seas Fisheries, 5-7-1, Orido, Shimizu-ward, Shizuoka City, 424-8633

Phone: +81 54 336-6052 – E-mail: tnishida@affrc.go.jp

Noriaki Takagi, Director, Executive Secretary, Japan Overseas Fishing Association, NK-Bldg., 6F, 3-6 Kanda Ogawa-cho, Chiyoda-ku, Tokyo 101-0052

Phone: +81 3 3291 8508 – Fax: + 81 3 3233 3267 – E-mail: ntakagi@jdsta.or.jp

NORWAY**Head of Delegation:**

Snorri Runar Palmason, Adviser, Fisheries Regulations Section, Directorate of Fisheries, Strandgaten 229, P. O. Box 2009 Nordnes, NO-5817 Bergen

Phone: +47 55 23 80 00 / 8394 – Fax: +47 55 23 80 90 – E-mail: snorri.palmason@fiskeridir.no

Advisers:

Odd Aksel Bergstad, Principal Research Scientist, Institute of Marine Research Flødevigen, N-4817 His

Phone: +47 37 05 90 19 – Fax: +47 37 05 90 01 – E-mail: oddaksel@imr.no

Webjørn Barstad, Head of Department, Norwegian Fishermen's Association, P.O. Box 67 Sentrum, 6001 Aalesund

Phone: +47 70 10 14 60 – Fax: +47 70 10 14 80 – E-mail: webjorn@fiskebat.no

RUSSIAN FEDERATION**Head of Delegation:**

Temur Tairov, Representative of the Russian Federation on Fisheries in Canada, 47 Oceanview Drive, Bedford, Nova Scotia, Canada B4A 4C4

Phone: +1 902 832 9225 – Fax: +1 902 832 9608 – E-mail: rusfish@ns.sympatico.ca

Advisers:

Konstantin Gorchinsky, The Barents and White Seas Regional Department of Fisheries, str. Komintern 7, 183038 Murmansk

Phone: +7 815 2 450 268 – Fax: +7 815 2 451 945 – E-mail: k_gor@rambler.ru

Vladimir Vinnichenko, Knipovich Polar Research Institute of Marine Fisheries and Oceanography (PINRO), 6 Knipovich St., Murmansk 183038

Phone: + 7 8152 47 21 92 – Fax: + 7 8152 47 33 31 – E-mail: vinn@pinro.ru

UNITED STATES OF AMERICA (USA)**Head of Delegation:**

Dean Swanson, Chief, International Fisheries Affairs Div., F/IA1, National Marine Fisheries Service, U.S. Dept. of Commerce, 1315 East-West Highway, Silver Spring, MD 20910

Phone: +301 713 2276 – Fax: +301 713 2313 – E-mail: dean.swanson@noaa.gov

Adviser:

Elizabethann English, Foreign Affairs Adviser, Office of International Affairs, F/IA-2, National Marine Fisheries Service, U.S. Dept. of Commerce, 1315 East-West Hwy., Silver Spring, MD 20910

Phone: +301 713 2276 – E-mail: liz.english@noaa.gov

NAFO SECRETARIAT

Ricardo Federizon, Fisheries Commission Coordinator rfederizon@nafo.int

Anthony Thompson, Scientific Council Coordinator athompson@nafo.int

Bev McLoon, Senior Personal Assistant to the Executive Secretary bmcloon@nafo.int

Annex 2. Agenda

1. Opening by the Chair, Bill Brodie (Canada)
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Review of recent information on sponges (from the June 2009 SC Meeting)
5. Review of relevant Scientific Council advice and consideration of recommendations to prevent significant adverse impacts on vulnerable marine ecosystems
6. Review of recommendations and follow-up actions from the WGFMS March 2009 Meeting in Vigo, Spain
 - a. Recommendations on corals
 - b. Existing bottom fishing area (footprint)
 - c. Exploratory Data Protocol
7. Recommendations to be forwarded to the Fisheries Commission
 - a. From the March 2009 Meeting in Vigo, Spain
 - b. From this meeting
8. Other Matters
9. Adoption of report
10. Adjournment

Annex 3. Interim Measures to Protect Significant Coral Concentrations (FCWGWP 09/3 Rev.2)

Background

In 2006, the United National General Assembly (UNGA) in its Sustainable Fisheries Resolution 61/105 called for States and Regional Fisheries Management Organizations (RFMOs) to adopt conservation and management measures in order to prevent significant adverse impacts on vulnerable marine ecosystems. UNGA will review the actions of States and RFMO in this respect in the fall of 2009.

Mindful of the work of the FAO in facilitating the development of international guidelines for the management of deep-sea fisheries operating in the high seas that serve to guide the identification of VMEs

Noting the commitment of NAFO Contracting Parties to implement an ecosystem approach and implement measures following the precautionary approach to address the impacts of fishing on VMEs

Recognizing the significant steps already taken by NAFO to protect Vulnerable Marine Ecosystems (VMEs) in the NAFO Regulatory Area (NRA) including inter alia:

- the closure of four seamounts to commercial fishing (2006)
- the establishment of a 30 Coral Protection Zone (2007)
- the closure of the Fogo Seamounts (2008)
- the adoption of a comprehensive framework for the implementation of UNGA Resolution 61/105 including provisions for the identification of existing bottom fishing areas (footprint), assessment of bottom fishing, Exploratory Fishery Protocol for new fishing areas and the interim Encounter provisions for VMEs in both fished and unfished areas of the NRA (2008)

Further recognizing the numerous international scientific research efforts that are designed to enhance knowledge in the area of VMEs, in particular with respect to addressing knowledge gaps on benthic habitat, communities and species in the NAFO Regulatory Area, especially the upcoming Spanish survey in 2009 and the Canadian survey in 2010

Conscious of the 2008 Intersessional Fisheries Commission Meeting which established a process to determine the boundary for existing fisheries and non-fished areas, and the 2008 NAFO Annual Meeting Fisheries Commission request to Scientific Council to more precisely identify significant concentrations of corals at its October 2008 meeting and significant concentrations of sponge at its June 2009 meeting

Recognizing the SC response which identified remaining concentrations of corals in its October 2008 report

It is proposed that, as part of a continuing commitment to implement the UNGA Resolution, the Working Group of Fisheries Managers and Scientists recommends to the Fisheries Commission for adoption in September 2009:

1. Establishment of additional coral protection zones in Divisions 3L and 3M:

Insert new Article 16 (2) of NCEM:

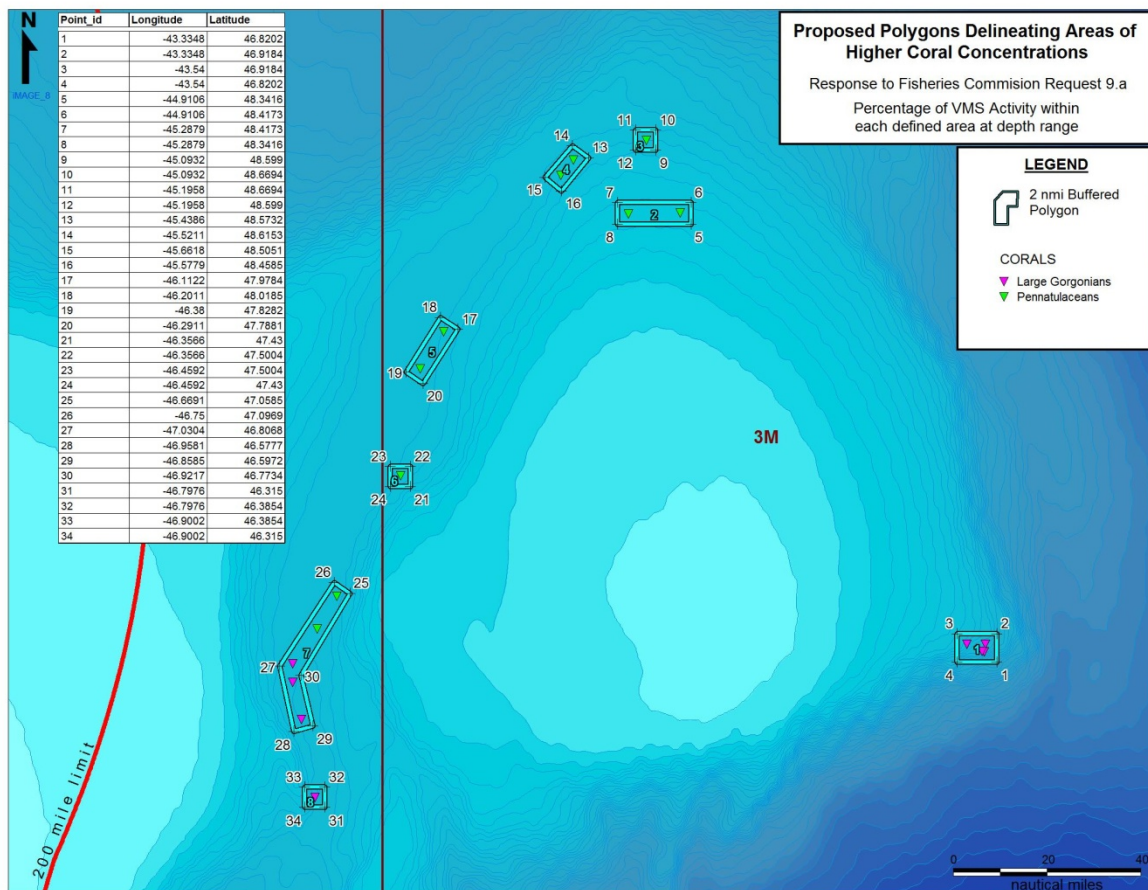
2. As of January 1, 2010 the following areas shall be closed on an interim basis to all bottom fishing activities until December 31, 2011. The closed areas are defined by connecting the following coordinates (in numerical order and back to coordinate 1).

Revoke current Article 16 (2) as this work has been completed.

Amendment to Article 16 (3)

3. The measures referred to in Article 16(1) shall be reviewed in 2012 by the Fisheries Commission taking account the advice from the Scientific Council and the Working Group of Fisheries Managers and Scientists, and a decision shall be taken on future management measures.

Area	Sub-Area	Coordinate 1	Coordinate 2	Coordinate 3	Coordinate 4
Eastern Flemish Cap	1	46°49'13"N 43°20'05"W	46°55'06"N 43°20'05"W	46°55'06"N 43°32'24"W	46°49'13"N 43°32'24"W
Northern Flemish Cap	1	48°20'30"N 44°54'38"W	48°25'02"N 44°54'38"W	48°25'02"N 45°17'16"W	48°20'30"N 45°17'16"W
Northern Flemish Cap	2	48°35'56"N 45°05'36"W	48°40'10"N 45°05'36"W	48°40'10"N 45°11'45"W	48°35'56"N 45°11'45"W
Northern Flemish Cap	3	48°34'24"N 45°26'19"W	48°36'55"N 45°31'16"W	48°30'18"N 45°39'42"W	48°27'31"N 45°34'40"W
Northwest Flemish Cap	1	47°58'42"N 46°06'44"W	48°01'07"N 46°12'04"W	47°49'42"N 46°22'48"W	47°47'17"N 46°17'28"W
Northwest Flemish Cap	2	47°25'48"N 46°21'24"W	47°30'01"N 46°21'24"W	47°30'01"N 46°27'33"W	47°25'48"N 46°27'33"W
Southwest Flemish Pass	1	47°03'31"N 46°40'09"W	47°05'49"N 46°45'00"W	46°48'24"N 47°01'49"W	46°34'40"N 46°57'29"W
		Coordinate 5	46°35'50"N 46°51'31"W	Coordinate 6	46°46'24"N 46°55'18"W
Southwest Flemish Pass	2	46°18'54"N 46°47'51"W	46°23'07"N 46°47'51"W	46°23'07"N 46°54'01"W	46°18'54"N 46°54'01"W



Annex 4. Interim Measures to Protect Significant Sponge Concentrations (FCWGWP 09/11 Revised)

Background

In 2006, the United National General Assembly (UNGA) in its Sustainable Fisheries Resolution 61/105 called for States and Regional Fisheries Management Organizations (RFMOs) to adopt conservation and management measures in order to prevent significant adverse impacts on vulnerable marine ecosystems. UNGA will review the actions of States and RFMO in this respect in the fall of 2009.

Mindful of the work of the FAO in facilitating the development of the International Guidelines for the Management of Deep-sea Fisheries operating in the high seas that serve inter alia to guide the identification of VMEs;

Noting the commitment of NAFO Contracting Parties to implement an ecosystem approach and implement measures following the precautionary approach to address the impacts of fishing on VMEs;

Recognizing the significant steps already taken by NAFO to protect Vulnerable Marine Ecosystems (VMEs) in the NAFO Regulatory Area (NRA) including inter alia:

- the closure of four seamount areas to commercial fishing (2006)
- the establishment of a 30 Coral Protection Zone (2007)
- the closure of the Fogo Seamounts (2008)
- the adoption of a comprehensive framework for the implementation of UNGA Resolution 61/105 including provisions for the identification of existing bottom fishing areas (footprint), assessment of bottom fishing, Exploratory Fishery Protocol for new fishing areas and the interim Encounter provisions for VMEs in both fished and unfished areas of the NRA (2008);

Further recognizing the numerous international scientific research efforts that are designed to enhance knowledge in the area of VMEs, in particular with respect to addressing knowledge gaps on benthic habitat, communities and species in the NAFO Regulatory Area, especially the Spanish lead international survey in 2009-2010;

Conscious of the 2008 Annual Meeting in Vigo, where the Fisheries Commission requested advice from the Scientific Council regarding significant concentrations of sponges (FC Doc. 08/19).

Recognizing the SC response which identified significant sponge concentrations in the NAFO Regulatory Area in its June 2009 report.

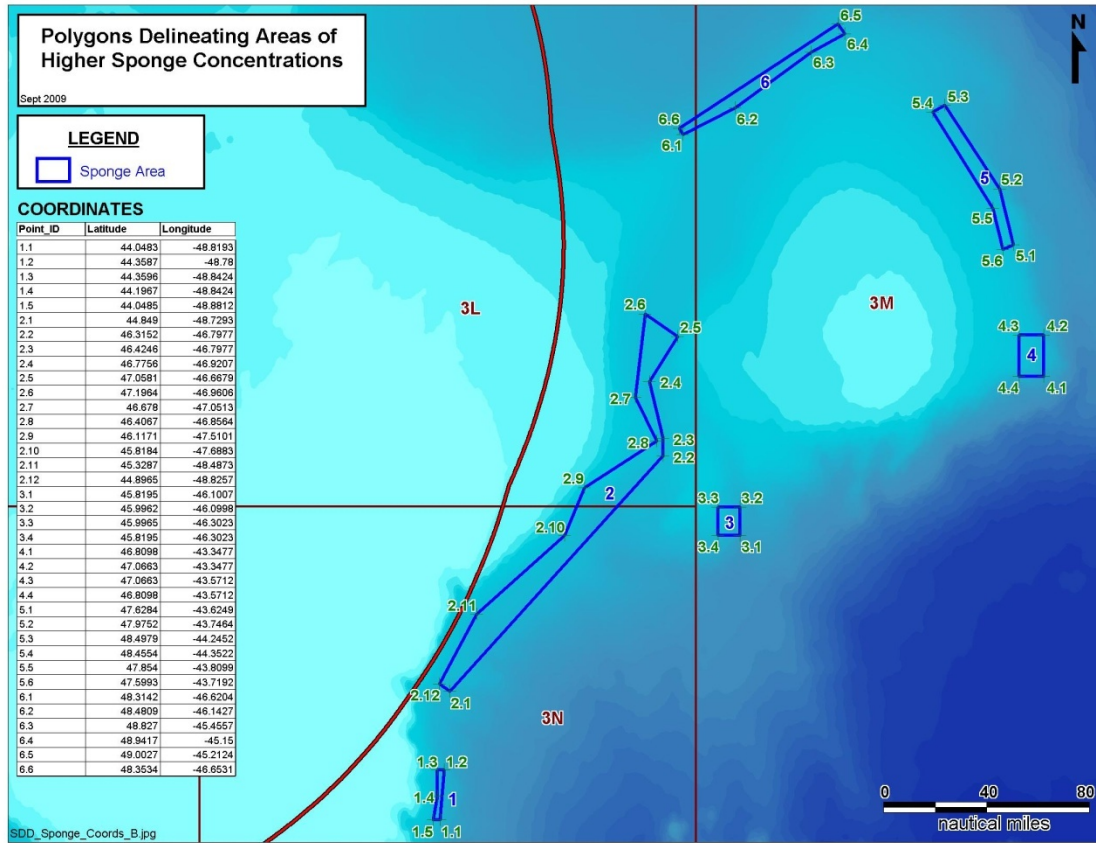
It is proposed that, as part of a continuing commitment to implement the UNGA Resolution, the Working Group of Fisheries Managers and Scientists recommends to the Fisheries Commission for adoption in September 2009:

1. Establishment of sponge protection zones in Divisions 3L, 3M and 3N:

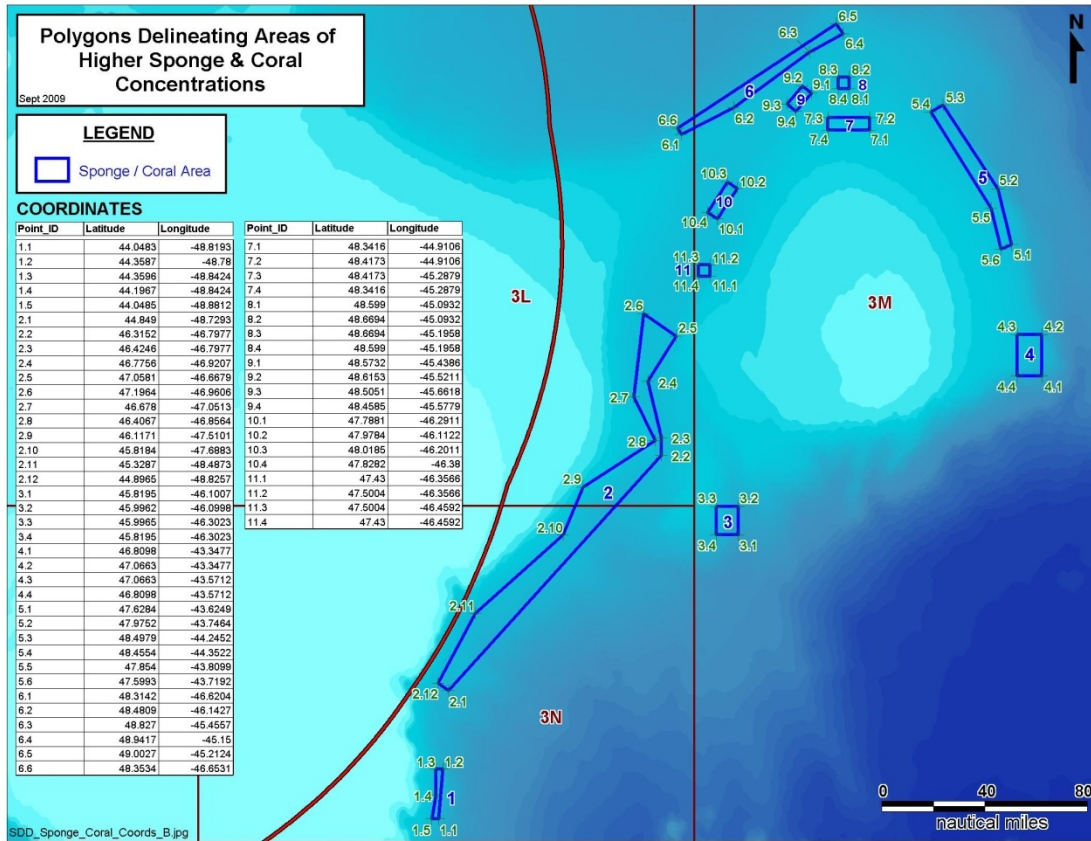
Establish Article 16 bis of NCEM “Sponge Protection Zones”

1. As of January 1, 2010 the following areas shall be closed on an interim basis to all bottom fishing activities until **December 31, 2011**. The closed areas are defined by connecting the following coordinates (in numerical order and back to coordinate 1).

2. The measures referred to in **Article 16 bis (1)** shall be reviewed before 2012 by the Fisheries Commission taking account the advice from the Scientific Council and the Working Group of Fisheries Managers and Scientists, and a decision shall be taken on future management measures.



2. The WGFMS further recommends that the Fisheries Commission considers combining the recommendations of the Report of the WGFMS of March 2009 on corals [Annex 6 of NAFO/FC Doc. 09/2] and sponges as defined in paragraph 1 above, "Establishment of sponge protection zones in Divisions 3L, 3M and 3N".



Annex 5. Encounter Provisions for Vulnerable Marine Ecosystems (FCWGWP 09/12)

Encounter Provisions for Vulnerable Marine Ecosystems

In 2006, the United National General Assembly (UNGA) in its Sustainable Fisheries Resolution 61/105 called for States and Regional Fisheries Management Organizations (RFMOs) to adopt conservation and management measures in order to prevent significant adverse impacts on vulnerable marine ecosystems.

Mindful of the work of the FAO in facilitating the development of International Guidelines for the Management of Deep-sea Fisheries operating in the high seas that serve *inter alia* to guide the identification of VMEs;

Noting the commitment of NAFO Contracting Parties to implement an ecosystem approach and implement measures following the precautionary approach to address the impacts of fishing on VMEs;

Recognizing the significant steps already taken by NAFO to protect Vulnerable Marine Ecosystems (VMEs) in the NAFO Regulatory Area (NRA) including *inter alia*:

- the closure of four seamount areas to commercial fishing (2006)
- the establishment of a 30 Coral Protection Zone (2007)
- the closure of the Fogo Seamounts (2008)
- the adoption of a comprehensive framework for the implementation of UNGA Resolution 61/105 including provisions for the identification of existing bottom fishing areas (footprint), assessment of bottom fishing, Exploratory Fishery Protocol for new fishing areas and the interim Encounter provisions for VMEs in both existing and new fishing area of the NRA (2008);

Further recognizing the numerous international scientific research efforts that are designed to enhance knowledge in the area of VMEs, in particular with respect to addressing knowledge gaps on benthic habitat, communities and species in the NAFO Regulatory Area, especially the Spanish lead international survey in 2009-2010; and

Further recognizing the proposal for closed areas for corals and sponges put forward by the September 2009 meeting of the Working Group of Fisheries Managers and Scientists to Fisheries Commission.

The Working Group of Fisheries Managers and Scientists strongly believed that the recommended coral and sponge closed areas and the interim encounter provision thresholds are integral and therefore urged that the Fisheries Commission consider these recommendations as a package.

Therefore, it is proposed that, as part of a continuing commitment to implement the UNGA Resolution, the Working Group of Fisheries Managers and Scientists recommends to the Fisheries Commission for adoption in September 2009:

1. The Fisheries Commission amend the text of Article 5bis 3) as follows:

For both existing and new fishing areas, an encounter with primary VME indicator species is defined as a catch per set (e.g. trawl tow, longline set, or gillnet set) of more than **60** kg of live coral and/or **800** kg of live sponge. These thresholds are set on a provisional basis and may be adjusted as experience is gained in the application of this measure.

Flag state		Day	Month	Year		Trawl 1	Trawl 2	Trawl 3
Vessel					Trawl type			
Call sign					Number of meshes			
					Mesh size			

TOW START								TOW END							
GMT time		Pos		Depth m				GMT time		Pos		Depth m			
hour	min	grd	min					hour	min	grd	min				

Corals total kg.				
Sponges total kg.				

[illegible]

Bio Sa. Biological Sampling	Tick for biological sample taken	Refer to annex 1 FAO international guidelines for the management of deep-sea fisheries in the high seas
VI Sp. Vulnerable Indicator species	Tick for biological sample taken	
Weight	Tick for weight estimated or actual	

*Use NAFO Coral Identification Guide

Annex 7. Consideration for Amendment of Chapter Ibis (FCWGWP 09/10)

Explanatory Memorandum

Under Chapter 1 bis, Article 4 bis of the NAFO Conservation and Enforcement Measures, Contracting Parties proposing to participate in bottom fishing in the NRA shall submit to the Executive Secretary an initial assessment of the known and anticipated impacts of its bottom fishing activities on vulnerable marine ecosystems, as well as the mitigation measures proposed by the Contracting Party to prevent such impacts. While assessments submitted to the Executive Secretary to date have included many of the same elements (proposed fishing area and target stocks, gear type, etc), there is no guiding document to inform Contracting Parties as to what needs to be included in an assessment. This lack of uniformity may impede the ability of the Scientific Council and subsequently, the WG of Fishery Managers and Scientists on Vulnerable Marine Ecosystems, to develop guidance on this issue for the Fishery Commission.

Paragraph 47 of the *International Guidelines for the Management of Deep-sea Fisheries in the High Seas*, adopted on 29 August 2008 at the FAO, outlines what should be included in an assessment of bottom fishing activities and should be used as a basis for the NAFO assessment requirement.

Proposal

Against this background, it is proposed that Article 1 in Chapter Ibis be amended by adding the following to Article 4bis - Assessment of bottom fishing:

3. i bis. Assessments shall include the following elements:

- a. Type(s) of fishing conducted or contemplated, including vessels and gear types, fishing areas, target and potential bycatch species, fishing effort levels and duration of fishing (harvesting plan);
- b. Best available scientific and technical information on the current state of fishery resources and baseline information on the ecosystems, habitats and communities in the fishing area, against which future changes are to be compared;
- c. Identification, description and mapping of VMEs known or likely to occur in the fishing area;
- d. Data and methods used to identify, describe and assess the impacts of the activity, the identification of gaps in knowledge, and an evaluation of uncertainties in the information presented in the assessment;
- e. Identification, description and evaluation of the occurrence, scale and duration of likely impacts, including cumulative impacts of activities covered by the assessment on VMEs and low productivity fishery resources in the fishing area;
- f. Risk assessment of likely impacts by the fishing operations to determine which impacts are likely to be significant adverse impacts, particularly impacts on VMEs and low-productivity fishery resources; and
- g. The proposed mitigation and management measures to be used to prevent significant adverse impacts on VMEs and ensure long term conservation and sustainable utilization of low-productivity fishery resources, and the measures to be used to monitor effects of the fishing operations.

Annex 8. NAFO Coral Identification Guide (cover page)

