

Northwest Atlantic Fisheries Organization



Report of the Fisheries Commission Working Group of Fishery Managers and Scientists  
on Vulnerable Marine Ecosystems (WGFMS-VME)  
23-25 April 2013  
Halifax, Nova Scotia, Canada

NAFO  
Dartmouth, N.S., Canada  
2013

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**Report of the FC Working Group of Fishery Managers and Scientists  
on Vulnerable Marine Ecosystems (WGFMS-VME)**

**23-25 April 2013  
Halifax, Nova Scotia, Canada**

**1. Opening of the Meeting**

Vladimir Shibarov (Executive Secretary, NAFO Secretariat) opened the meeting at 1015 hrs on Tuesday, 23 April 2013. He welcomed the participants from Canada, European Union, Iceland, Japan, Norway, Russian Federation, and the USA (Annex 1).

**2. Election of Chair**

Bill Brodie (Canada) was elected chair. The chair presided over the subsequent agenda items.

**3. Appointment of Rapporteur**

Ricardo Federizon (NAFO Secretariat) was appointed rapporteur.

**4. Adoption of Agenda**

The provisional agenda as previously circulated was adopted (Annex 2). Under Others Matters is an update-presentation on the NEREIDA project.

**5. Consideration of amendments to the closed areas (as defined in Article 16 of the NCEM) in view of the latest available scientific information**

The consideration of amendments to the closed areas represents a follow-up evaluation of the three proposals, first tabled and discussed at the 2012 Fisheries Commission Annual Meeting in St. Petersburg Russia, to modify the boundaries of some existing closed areas and to create new closed areas. The common purpose is to protect the areas where significant concentrations of VME indicator species were discovered during the scientific surveys of the NAFO Regulatory Area. The three proposals are

- *Proposal for a conservation measure concerning the extension of Closed Area 2 in order to protect significant concentrations of large gorgonians (Corals) (FC WP 12/17)*
- *Proposal for a conservation measure concerning the extension of Closed Area 10 and the creation of a Closed Area 12 in order to protect significant concentrations of sea pens (FC WP 12/18)*
- *Proposal for a conservation measure concerning the extension of Closed Area 7 and 8, and the creation of Closed areas 13 and 14 in order to protect significant concentrations of large sea pens (FC WP 12/28 Rev.)*

In addition to the review of the scientific information (e.g. the maps of the location of significant concentrations in Annex 6 of the WG Meeting Report of September 2012), a re-examination of the historical VMS data (fishing vessel position reports) covering the years 2003-2012 was made (Annex 3). The analysis of the VMS data concludes that impact of the proposed extension of boundaries and closures on fishing operations appears to be very limited.

The WG was in agreement on the proposed modification of the existing closures (Areas 2, 7, and 8) and on the proposed creation of new closed Area 12. Regarding Area 10, the agreed coordinates represents a slight modification from the original proposal to simplify the shape of the polygon (see

Slides 11-13 of Annex 3). Recommendations to this effect will be forwarded to the Fisheries Commission for adoption (see item 8).

Regarding Areas 13 and 14, scientific survey data indicate the presence of significant concentrations of sea pens in these areas. Most CPs agree that these areas should be protected from bottom fishing. However, no consensus was reached on specific management measures that are best suited in protecting the areas. Arguments were brought forward for and against recommendations for closures of the areas as presently defined, as well as for and against maintaining threshold values which trigger the application of the “move-on” rule. There was also no agreement on how the boundaries of the areas under consideration should be defined, either for closure or for application of threshold values.

The following two paragraphs represent two differing views presented at the meeting, which the WG was not able to reach consensus on:

- 1) Some CPs considered that VMEs are likely to occur in the east of Flemish Cap, but that only one survey catch above the threshold was observed for each of areas 13 and 14. No consistent and contiguous observations of VME indicators above the threshold were made. From a conservation point of view it would be more effective to have larger closed areas rather than smaller scattered ones, and that annual adjustments to area closures should be avoided if possible. It is not expected that fishing activity will occur in Areas 13 and 14, given the VMS data of the last 10 years. It is expected that new information on sea pens will be available later in 2013, including data from areas 13 and 14. Such scientific information is necessary before a decision is taken on VME presence in the eastern area of Flemish Cap, and is necessary to define the most appropriate delineation of the area to be closed to prevent significant adverse impacts on VMEs.
- 2) Norway, supported by Iceland, Canada, the US and other CPs proposed to recommend closing Areas 13 and 14. The Scientific Council (SC) has, based on extensive survey information, provided a map of distribution areas of sea pens. The SC has furthermore documented that, within the continuous large sea pen areas on the western Flemish Cap, these two proposed closure areas have significant concentrations, i.e. concentrations above the threshold densities used as basis for closure recommendations accepted by the WG on the eastern and northern flanks of the Flemish Cap. The view was expressed that the SC documentation is comparatively extensive and sufficient to conclude that there are VMEs in the areas, or at least that it is likely that this is the case. On this basis, taking protective action by closing the two areas to bottom fishing would be the only action compatible with the FAO guidelines. The two proposed closures lie within the NAFO fishing footprint, hence taking no action to close the areas in 2013 would effectively leave the likely VMEs accessible to bottom fisheries. It is appreciated that the high sea pen concentrations are observed in few survey trawls, and it is recognized that new scientific information and evaluation may become available. It is unlikely, however, that significant new information will be available in 2013. It was also noted that VMS data examined at the meeting showed an increase in fishing in the vicinity of these areas in 2010, 2011, and 2012. A precautionary approach would therefore to close the two areas where VMEs are likely, and then, following established rules of NAFO Bottom Fishing, reconsider closure boundaries if and when scientific advice to that effect become available. It is also noted that a comprehensive review of all measures, including closures, is scheduled for 2014.

It was decided that the issue concerning Areas 13 and 14 be forwarded to FC, as presented in these two options outlined above, with a recommendation that a decision on specific management measures applicable to the areas be made as soon as possible.

## 6. Preliminary discussions on the evaluation of conservation effect of applying thresholds and move-on rules

The WG recalled the SC advice from SC June 2012 meeting:

*Scientific Council notes that the encounter thresholds are a very useful tool to identify VMEs in areas where there is little survey information and the fishing activity is the main source of data. This applies especially to new fishing areas outside of the fishing footprint. However, as the locations of the benthic VMEs become increasingly well-defined in the NRA to support informed management through closed areas the need to implement encounter protocols gradually become redundant. Scientific Council considers a management through the closing of areas with significant concentrations of VME is the most effective measure for protecting VMEs in the NRA as it would avoid issues associated with the implementation of complex move-on rules.*

The WG also noted that 2012 FC Request for SC Advice includes encounter thresholds and move-on rules for small gorgonian corals, large gorgonian corals, sea squirts, erect bryozoans, crinoids and cerianthid anemone which are VME indicator species that meet the FAO Guidelines for VME and Significant Adverse Impact (SAI). Advice is expected to be available after the SC June 2013 Meeting.

There were discussions on the merit of withdrawing thresholds in instances where appropriate closures have been adopted. Specific consideration was given to removing the encounter protocol for sea pens in the portion of the Regulatory Area where closures are agreed upon (West Flemish Cap). Noting the logistical challenges associated with such an approach and in the absence of closures for all the significant sea pen locations CPs could not agree to withdraw some of the existing thresholds, which would therefore be maintained. CPs agreed to further consider this issue in September 2013 if agreement could be reached on the remaining areas. Further discussion on the issue would take place in the context of the broader review of existing closures scheduled for 2014.

## 7. Discussion on the draft Terms of Reference and workplan of the proposed Joint Fisheries Commission-Scientific Council Working Group on the Ecosystem Approach Framework to Fisheries Management

Following the 2012 recommendation of this WG that FC modify the Terms of Reference (ToR) for this WG to expand its mandate to include broader aspects of Ecosystem Approach to Fisheries (EAF), the FC tasked the FC Chair in collaboration with the Chairs of SC and other relevant WGs to draft the ToR of the proposed Joint Fisheries Commission-Scientific Council Working Group on the Ecosystem Approach Framework to Fisheries Management.

The FC Chair introduced the draft ToR contained in FCWG-VME WP 13/1. The following represents a compilation of the feedback and comments from one or more CPs:

On Structure:

- A more structured debate, rather than a complete "open forum/dialogue " format is preferred. It was suggested the dynamics of this joint WG should be based on the dynamics of WGFMS-VME as it has been proven to be effective.
- The second paragraph should be modified to read: The Working Group shall be comprised of fishery managers and scientists from Contracting Parties supported by experts and advisors. The meeting shall be structured by Contracting Parties, with the participation of the chairs of the Scientific Council and the Fisheries Commission. The work form shall be an open forum/dialogue at the discretion of the chairs and with the consent of Contracting Parties.
- The issue of observers in working groups is under discussion in other RFMOs, e.g. NEAFC. Iceland will come back to this issue at the Annual Meeting in September 2013.

On Objective:

- The Objective is too general, and that the scope of work needed to be clarified. For example, in its current text, "ecosystem approach" can also cover mesh size issues, TACs, and quota allocation which should be beyond the ambit/mandate of the Joint Working Group.

On Specific Duties:

- The 1st bullet concerns general aspects of ecosystem approach roadmap and may need to be elaborated, and the next 5 bullets all are related to VMEs.
- Specific duties should defined in two categories: 1) Ecosystem Approach, and 2) VME-related work (see FCWG-VME WP 13/3).
- The ToR have to be general to allow flexibility, considering that ecosystem approaches are constantly evolving. Specific duties may be better contained in a workplan to be developed.

On Meetings:

- A meeting may be convened at the request FC or SC. Participants acknowledge the difficulty in reaching agreement on meeting dates. There was a suggestion to schedule the meeting back-to-back with the Annual meeting for practical and travel purposes. However, some CPs noted this meeting schedule would not allow sufficient time to finalize the meeting report and to prepare for the Annual meeting.

On Reporting:

- Meeting reports should go to the NAFO Bodies and CPs and not to the FC and SC Chairs.

Concerning the comment on Objective, the FC Chair clarified that under the specific duties, the tasks of the working group are more clearly defined and they do not cover the management measures regarding TACs, quotas, mesh sizes, etc.

The draft will also be presented at the SC June Meeting. CPs were encouraged to provide further comments preferably before the SC June meeting. A revised draft by the FC Chair incorporating the comments will be presented to FC and SC at the September Annual Meeting for consideration and approval.

## 8. Recommendations to be forwarded to the Fisheries Commission

The following are the agreed recommendations to be forwarded to the FC at the 2013 Annual Meeting:

### 1. Extension of the Existing Closed Areas

1.1 The WG recommends to extend the boundaries of Closed Area 2 to protect significant concentrations of large gorgonians; amend the coordinates of Closed Area 2 in Article 16.5 NCEM as follows (see Figure 1):

Point No.	Latitude	Longitude
2.1	44° 50' 56.4" N	48° 43' 45.48" W
2.2	46° 18' 54.72" N	46° 47' 51.72" W
2.3	46° 25' 28.56" N	46° 47' 51.72" W
2.4	46° 46' 32.16" N	46° 55' 14.52" W
2.5	47° 03' 29.16" N	46° 40' 4.44" W
2.6	47° 11' 47.04" N	46° 57' 38.16" W
2.7	46° 40' 40.8" N	47° 03' 4.68" W

2.8	46° 24' 24.12" N	46° 51' 23.04" W
2.9	46° 21' 4.78" N	46° 58' 53" W
2.10	46° 26' 32" N	46° 58' 53" W
2.11	46° 30' 22.20" N	47° 11' 2.93" W
2.12	46° 17' 13.30" N	47° 15' 46.64" W
2.13	46° 07' 1.56" N	47° 30' 36.36" W
2.14	45° 49' 6.24" N	47° 41' 17.88" W
2.15	45° 19' 43.32" N	48° 29' 14.28" W
2.16	44° 53' 47.4" N	48° 49' 32.52" W

and adjust the map in Figure 3 of the NCEM accordingly.

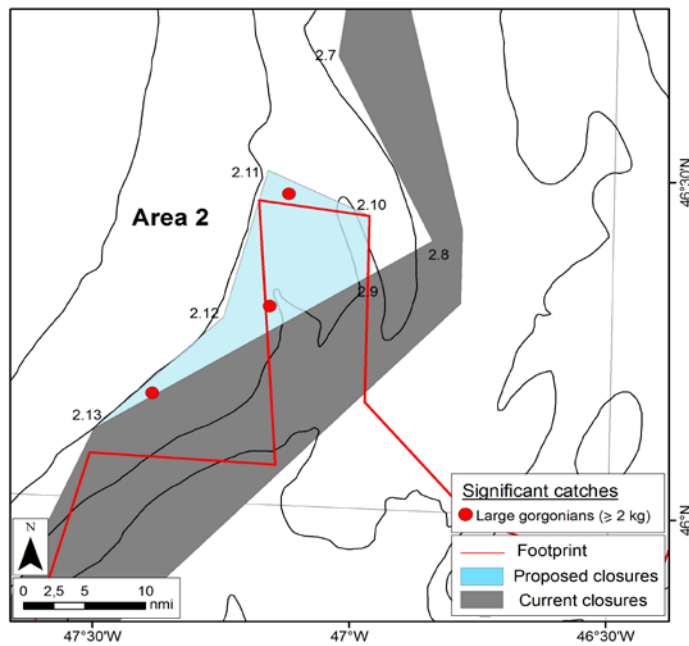


Figure 1. Polygons Delineating the Extention of Area 2

1.2 The WG recommends to extend the boundaries of Area 7 to protect significant concentrations of sea pens; amend the coordinates of Closed Area 7 in Article 16.5 of the NCEM as follows (see Figure 2):

Point No.	Latitude	Longitude
7.1	48° 25' 02.28"N	45° 17' 16.44"W
7.2	48° 25' 02.28"N	44° 54' 38.16"W
7.3	48° 19' 08.76"N	44° 54' 38.16"W
7.4	48° 19' 08.76"N	45° 01' 58.56"W
7.5	48° 20' 29.76"N	45° 01' 58.56"W
7.6	48° 20' 29.76"N	45° 17' 16.44"W

and adjust the map in Figure 3 of the NCEM accordingly.

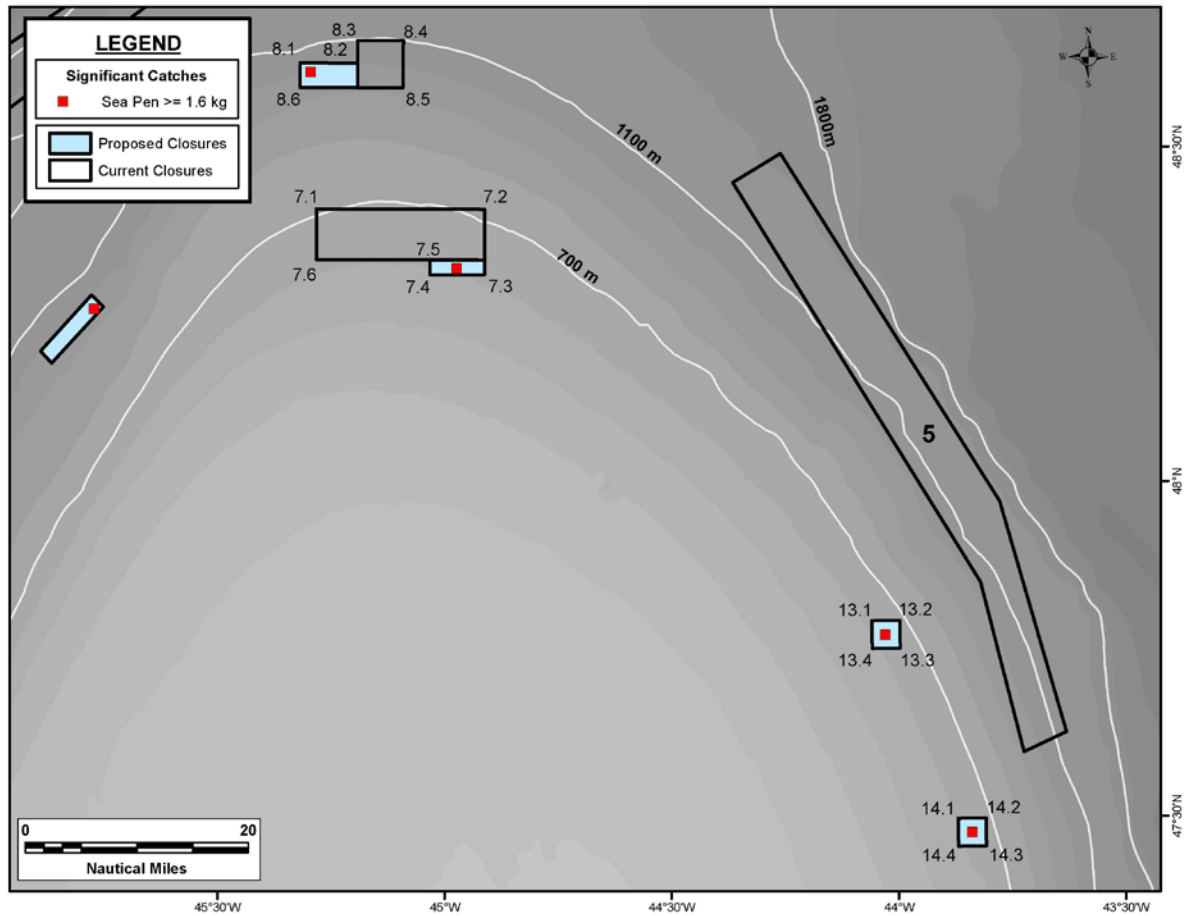


Fig. 2. Polygons Delineating Polygons Delineating the Extention of Areas 7 and 8 and the Creation of Closed Area 13 and 14.

1.3. The WG recommends to extend the boundaries of Area 8 to protect significant concentrations of sea pens; amend the coordinates of Closed Area 8 in Article 16.5 of the NCEM as follows (see Figure 2):

Point No.	Latitude	Longitude
8.1	48° 38' 07.95"N	45° 19' 31.92"W
8.2	48° 38' 07.95"N	45° 11' 44.36"W
8.3	48° 40' 9.84"N	45° 11' 44.88"W
8.4	48° 40' 9.84"N	45° 05' 35.52"W
8.5	48° 35' 56.4"N	45° 05' 35.52"W
8.6	48° 35' 56.4"N	45° 19' 31.92"W



1.4 The WG recommends to extend the boundaries of Closed Area 10 to protect significant concentrations of sea pens; amend the coordinates of Closed Area 10 in Article 16.5 of the NCEM as follows (see Figure 3):

Point No.	Latitude	Longitude
10.1	47° 49' 41.51" N	46° 22' 48.18" W
10.2	47° 47' 17.14" N	46° 17' 27.91" W
10.3	47° 58' 42.28" N	46° 6' 43.74" W
10.4	47° 59' 15.77" N	46° 7' 57.76" W
10.5	48° 7' 48.97" N	45° 59' 58.46" W
10.6	48° 9' 34.66" N	46° 4' 8.54" W

and adjust the map in Figure 3 of the NCEM accordingly.

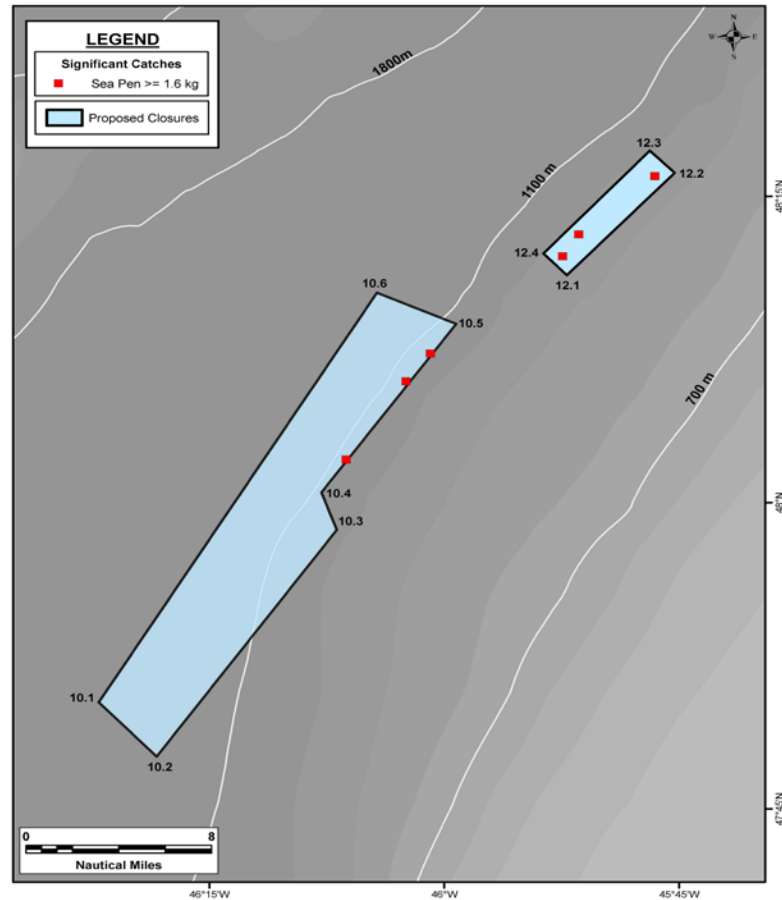


Figure 3. Polygons Delineating the Extension of Area 10 and the Addition of New Closed Area 12.

## 2. Addition of New Closed Area

The WG recommends to add Closed Area 12 to protect significant concentrations of sea pens; with coordinates as follows (see Figure 3):

Point No.	Latitude	Longitude
12.1	48° 12' 6.60" N	45° 54' 12.94" W
12.2	48° 17' 11.82" N	45° 47' 25.36" W
12.3	48° 16' 7.06" N	45° 45' 48.19" W
12.4	48° 11' 3.32" N	45° 52' 40.63" W

## 3. Management Measures for Areas 13 and 14 (see Figure 2)

The WG recommends that FC further reflect on the management options presented above (see item 5) and decide which is best suited for Areas 13 and 14 in the protection of areas with significant concentrations of sea pens.

The coordinates of Areas 13 and 14, as reflected in Figure 2 are:

Point No.	Latitude	Longitude
13.1	47° 47' 54.33"N	44° 03' 06.46"W
13.2	47° 47' 54.33"N	43° 59' 23.40"W
13.3	47° 45' 24.44"N	43° 59' 23.40"W
13.4	47° 45' 24.44"N	44° 03' 06.46"W
14.1	47° 30' 04.80"N	43° 52' 00.35"W
14.2	47° 30' 04.80"N	43° 48' 18.54"W
14.3	47° 27' 34.89"N	43° 48' 18.54"W
14.4	47° 27' 34.89"N	43° 52' 00.35"W

## **9. Other Matters**

### Update on NEREIDA Project

Andrew Kenny (EU) made an update-presentation on the research survey project NEREIDA (NAFO Potential Vulnerable Marine Ecosystems: Impact of Deep-sea Fisheries).

Six multidisciplinary surveys have been conducted. Using multibeam echosounders, the surveys covered an area of 68 950 km<sup>2</sup>. Rock dredges for hard bottoms and box corers for soft bottoms were used in collecting benthic samples. Of the 328 samples collected, 40 have been processed. Results were published in ICES Journal of Marine Science. The first priority of the project was to analyze the data associated with the closed areas, i.e. Sackville Spur and Flemish Pass/Eastern Canyon.

The four key topics which need to be addressed through a full analysis of the remaining unprocessed samples and data are: biodiversity, function, fishing impacts, and closed areas. Each key topic is led by a participating research institution.

For the review of the current VME closed areas by the Fisheries Commission in 2014, the requirements are new video analysis of the Flemish Cap closures and complete analysis of rock dredge box corer samples. All these analyses are critical for the delivery of the review of NAFO fisheries closures since it is the only source of benthic community data available which covers all of the closures in the fishing footprint and adjacent areas.

The extent of work on these topics depends on funding and commitments of the participating CPs.

#### **10. Time and place of the next meeting**

Time and place of the next meeting was not decided. It was recognized that the need for a next meeting would depend on the results of the SC June 2013 Meeting. The Secretariat will consult the WG and FC Chairs after the SC Meeting.

#### **11. Adoption of the Report**

This report was adopted through correspondence after the meeting.

#### **12. Adjournment**

The meeting adjourned at 1130 hours on Thursday, 25 April 2013. The Chair thanked the participants for their input and the Secretariat for organizing the meeting and providing excellent facilities and service.

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**Annex 2. Agenda**

1. Opening of the Meeting
2. Election of Chair
3. Appointment of Rapporteur
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5. Consideration of amendments to the closed areas (as defined in Article 16 of the NCEM) in view of the latest available scientific information
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**Annex 3. VMS Analysis in relation to fishing activities (2004-2012) and closed areas and concentrations of VME indicator species.**

Fisheries and Oceans Canada / Pêches et Océans Canada  
Halifax, Nova Scotia  
April 23-25, 2013

**NAFO Working Group of Fisheries Managers and Scientists on VME**



Canada

Fisheries and Oceans Canada / Pêches et Océans Canada

**Recap**

- Seamount, Coral, and Sponge Protection Zones (Article 16)
  - Six (6) Seamounts (2006 & 2008)
  - Coral protection zone in Div. 30 (2007)
  - Eleven (11) areas of higher sponge and coral concentrations near the Flemish Cap/ Flemish Pass (2009)
- Sea Pens (2012)
  - SC Advice: Significant Catches/ Areas
  - Consideration of amendments to existing closures

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**Overview**

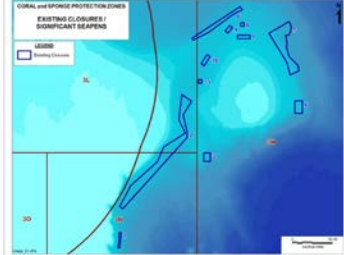
- Existing Closures
- Review of sea pen data/ distribution
- Assessment of 2012 Proposals
- Sourced NAFO VMS data
- Consideration of Alternate Boundaries
- Recommendation
- Next Steps

3

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**Current Coral/ Sponge Closures**

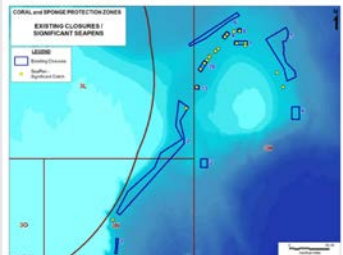


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**SC Advice – Significant Sea Pen Areas**




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**Recap of 2012 Proposals**

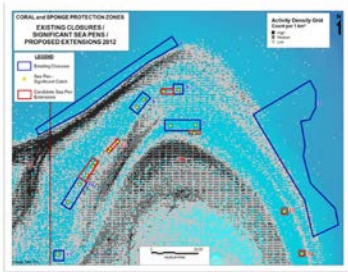


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Canada



### Assessment of 2012 Proposals



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Canada

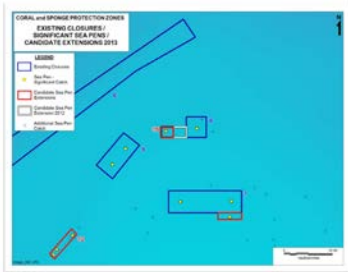
### Alternate Boundary – Area 8



8

Canada

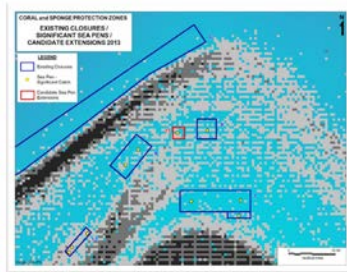
### Alternate Boundaries – Area 8



9

Canada

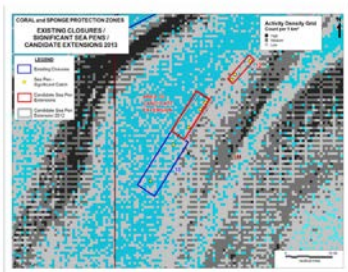
### Alternate Boundaries – Area 8



10

Canada

### Alternate Boundaries – Area 10



11

Canada

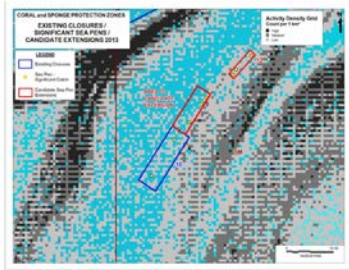
### Alternate Boundaries – Area 10



12

Canada

### Alternate Boundaries – Area 10



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### Assessment of Alternate Options

	Area 7	Area 8	Area 10	Area 12	Area 13	Area 14
Proposals 2012	27	103	290	132	4	4
Alternates		49*	192			

\* New/ Separate Area 15

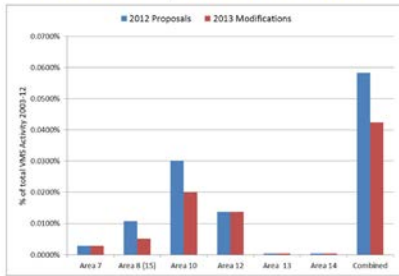
#### Summary

- Total # of VMS positions (2003-12): 961 651
- # of VMS positions taken in by 2012 proposed extensions: 560
- # of VMS position taken in by 2013 modified extensions: 408
- < 1/25<sup>th</sup> of 1%

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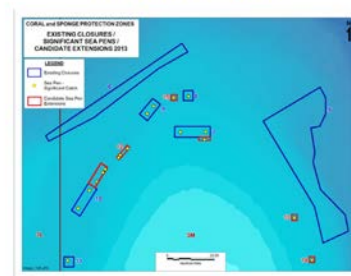
### Relative Impact - Extensions



15



### Modified Areas



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### Summary/ Conclusions

- Analysis completed using 'real' data (not simulations)
- Impact of candidate closures on fishing operations appears to be very limited
- Closures may provide basis for eliminating 7kg threshold for sea pen

Questions/ Comments ...

Thank You

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