Northwest Atlantic Fisheries Organization

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SCIENTIFIC COUNCIL MEETING - 2013

Report to the NAFO Scientific Council
ICES/NAFO Joint Working Group on Deep-water Ecology (WGDEC)
11–15 March 2013, Institute of Marine Research, Flødevigen, Norway

Odd Aksel Bergstad, Institute of Marine Research, Norway

Meeting and attendance

WGDEC met in the Institute of Marine Research, Flødevigen in Norway under the chairmanship of Dr Francis Neat from Scotland, UK.

A sub-set of the appointed members to the group attended (Annex 2) and some contributed on the sharepoint site. Full membership list is available on the ICES website. Carlos Pinto attended from ICES, especially to assist with database issues.

The European Commission's DGMARE had asked for permission to attend as observers, and the meeting was attended by one representative from 12th through 15th March.

Deliberations primarily focused on what was being asked of the group by NEAFC and ICES. The Terms of Reference are attached to this report as Annex 1. ICES had not received any special requests from NAFO, but the request from NEAFC with relevance to its review of the bottom fishing regulations may be relevant to NAFO. Some of the experiences from NAFO had a bearing on WGDEC's considerations of the relevant ToRs.

No new data on VMEs had been received from the NAFO RA, and WGDEC did not discuss further measures for that area.

Conclusions from the meeting are well reflected in the executive summary and recommendation given below (extracts from the final draft of the report). The full report provides ample background information and will be available from ICES in due course.

Extracts from WGDEC report (final draft):
Executive summary

WGDEC was requested to update all records of deep-water vulnerable marine ecosystems (VMEs) in the North Atlantic. New data from a range of sources including multibeam echosounder surveys, fisheries surveys, habitat modelling and seabed imagery surveys was provided. For several areas across the North Atlantic, WGDEC makes recommendations for areas to be closed to bottom fisheries for the purposes of conservation of VMEs.

Within the NEAFC regulatory area the following areas were considered;

- **N-W Rockall.** New data further support the boundary revision proposed by WGDEC in 2012. WGDEC therefore reiterates its recommendation from 2012, i.e. to modify the existing boundary to better protect VMEs.
- **S-W Rockall**. New data suggest the presence of VMEs outside the current closures in this area. Two closures to bottom fisheries are recommended.
- **The Hatton-Rockall Basin**. New data suggest significant aggregations of deep-sea sponges in this area. A closure to bottom fishing is recommended. Notice is also drawn to a potential cold-seep VME, but due to uncertainty in location and extent of the ecosystem, no closure to bottom fisheries is recommended at present.
- **The Hatton Bank.** Although no new information on VMEs were available, new information on bottom fishing vessel activity was provided allowing for better definition of the area in the SW of the bank that was proposed for closure in 2012. Two closures to bottom fisheries for protection of VMEs in this area are recommended.
- **The Josephine Seamount**. This is a NEAFC existing fishing area and an OSPAR MPA site. Although no new VME indicator data were available to the group, WGDEC considers that VMEs are very likely to be present in this area. A closure to bottom fishing for their protection is recommended.

Within the EEZs of various countries the following areas were considered;

- **Rosemary Bank** (EC EEZ). New information on trawl bycatch of deep-sea sponges was available. A closure to bottom fisheries for protection of VMEs in this area is recommended.
- **Faroese Waters** (Faroe Islands EEZ). New information from longline and trawl bycatch of coral and gorgonians were available. Significant amounts of coral indicate the presence of VMEs in two areas. Two closures to bottom fisheries for protection of VMEs in this area are recommended.
- **North Shetland-Tampen ground** (EC EEZ). New information on a significant trawl bycatch of deep-sea sponges was available. The record is close to other historical records of deep-sea sponges suggesting a wider area of this VME. A closure to bottom fisheries for protection of VMEs in this area is recommended.
- **Hebridean Terrace Seamount** (EC EEZ). New information from ROV surveys indicates the presence of coral gardens on the steep slopes of this seamount. A closure to bottom fisheries around the steep flanks for protection of VMEs is recommended.

- **Whittard Canyon, Irish Margin/Bay of Biscay** (EC EEZ). New information from ROV surveys suggested the presence of VMEs in this area. A closure to bottom fisheries for protection of VMEs in this area is recommended.

Within the Northwest Atlantic (NAFO regulated) the following areas were considered;

- **The Grand Banks and Flemish Cap**. New Russian records of bycatch levels of VME indicators were presented but they were very low (not exceeding 1 kg of VME indicator species). No recommendations are made for closures to bottom fisheries.

WGDEC was asked if buffer zones around areas closed to bottom fishing are appropriate and to explain the criteria used to apply buffer zones. In the past WGDEC has drawn closure boundaries inclusive of a buffer zone and thus considers that current and proposed closure boundaries are appropriately delineated. The 'rule-of-thumb' for applying a buffer zone is to horizontally extend the closure around the records of VME indicator species by two to three times the depth of the water. The outer extents of these points are then joined to form the boundary. In some situations boundaries are drawn according to geomorphological features or 'VME elements', rather than actual records of VME indicators, in which case a precise buffer zone cannot be defined. Buffer zones adopted in new recommendations will be illustrated.

WGDEC was asked to assess the list of VME indicator species with a view to whether it is exhaustive and can be harmonized with the NAFO list of VME indicator species. WGDEC did not think an exhaustive list of species associated with VMEs in the NEAFC RA was necessary. Instead a list of VME types that encompass those species was thought to be more useful. Such a list was developed and it is described how those species on the NAFO list be integrated and harmonized.

WGDEC mapped VME elements (i.e. geomorphological features) in the NEAFC RA at depths <2000 m. The Mid-Atlantic Ridge is highlighted as one contiguous VME element. VME elements within the Rockall-Hatton area are mapped and those without current protection measures are highlighted. An analysis of all isolated seamounts with summits <2000 m in the NEAFC area was undertaken and a map is presented. Attention is drawn to six areas. In addition all known hydrothermal vents in the NEAFC RA were mapped. It was clear that most are too deep to be at risk from bottom fishing impacts. The few that are at depths <2000 m are highlighted as they are potentially at risk.

WGDEC was asked to assess whether the regulations for longline fishing as adopted by SEAFO and CCMLAR would be appropriate to vessels operating in the NEAFC RA. WGDEC concluded that the CCAMLR regulations are appropriate to the large industrialized longline vessels operating in the NEAFC area. If adopted by NEAFC these regulations would result in improved VME conservation objectives. The success, however, of the CCAMLR regulations appears to be

contingent upon observer coverage which at present in NEAFC only applies to exploratory fisheries.

WGDEC was requested to incorporate data on known hydrothermal vents and cold-seeps in the North Atlantic into the ICES VME database. This was done and the sites are described together with a list of the associated fauna. The chapter concludes with an appraisal of potential threats from anthropogenic pressures.

WGDEC generated cumulative bycatch curves for sponges, sea-pens, and *Lophelia pertusa* (stony coral) using a subset of survey data from the ICES VME database. These analyses are discussed in relation to similar work undertaken by NAFO Scientific Council. While informative for WGDEC in defining VME encounters during scientific surveys, it was not possible to extrapolate this to generate confident estimates of VME thresholds for commercial vessels.

WGDEC reviewed the ecosystem section of the area overviews that WGDEEP uses in its reports. A suggestion for standardization of content and restructuring is made and it is emphasized that specific attention should be given to the occurrence of VMEs in each area.

Recommendations

Recommendation	***Adressed to***
WGDEC recommends that the ICES Data Centre continue to assist in developing an online GIS functionality of the ICES VME database.	*ICES Data Centre*
WGDEC recommends that recent (post 2009) VMS data are provided to ICES in advance of the 2014 WGDEC meeting. NEAFC areas of interest include fisheries in the Rockall-Hatton area, all seamounts with summits < 2000 m and the Mid-Atlantic Ridge. EU EEZ areas of interest include the continental slope including the Bay of Biscay and all seamounts/banks. All form of identification of vessel, nationality and any information on catch should be removed from the data, WGDEC will however need the data to be resolved at the finest possible temporal and spatial scale (not aggregated) and provided with information on fishing gear type, e.g. bottom trawl.	*NEAFC and EC*

Arendal, Norway 29 April 2013.

Appendix 1. Terms of reference for ICES/NAFO WGDEC 2013.

The ICES/NAFO Joint Working Group on Deep-water Ecology (WGDEC), Chaired by Francis Neat, UK, met 11–15 February 2013 at IMR, Floedevigen, Norway to:

a) Provide all available new information on distribution of VMEs in the North Atlantic and update maps with a view to advising on any boundary modifications of existing closures to bottom fisheries (NEAFC request[1]).

b) Evaluate whether buffer zones applied in the current bottom fishing closures are appropriate. Additionally, ICES is requested to include, specify and illustrate buffer zones in its future advice on closures in the Regulatory Area as appropriate (NEAFC request).

c) Assess whether the list of VME indicator species is exhaustive and suggest possible addition to that list. The basis for the assessment should be the FAO Guidelines specifying taxa and habitats that may be relevant. ICES should focus on taxa (species or assemblages of species) that tend to form dense aggregations of assumed particular functional significance. NAFO SC has in 2012 conducted a similar assessment and revision and to the extent scientifically valid harmonization with NAFO lists would be beneficial. ICES is furthermore asked to map VME elements (i.e. geomorphological features) in the NEAFC RA. This would include seamounts and knolls at fishable depths (with summits shallower than 2000 m), canyons, and steep flanks. Also in this exercise, harmonization with NAFO SC evaluations would be beneficial. ICES is specifically requested to advice NEAFC on the occurrence of hydrothermal vents and measures applicable to protect hydrothermal vents and associated communities in the RA (NEAFC request).

d) Advice on the appropriateness of applying the threshold levels for VME indicator species for longline fishing as adopted in the SEAFO, and CCMLAR, in the NEAFC RA (NEAFC request).

e) Incorporate data on known hydrothermal vents and seeps in the ICES area into the ICES WGDEC VME database and maps and review the associated fauna and potential threats from anthropogenic pressures.

f) Explore the use of survey data from the ICES VME database to address bycatch thresholds in different regions, e.g. NAFO and NEAFC RA's.

g) Review and, if necessary, update the ecosystem section of the area overviews in the WGDEEP report in advance of WGDEEP so that WGDEEP can take greater account of ecosystem aspects (WGDEEP recommendation).

WGDEC will report by 14 April for the attention of the Advisory Committee.

[1] "to provide all available new information on distribution of vulnerable habitats in the NEAFC Convention Area and fisheries activities in and in the vicinity of such habitats."

Appendix 2. List of members of WGDEC participating in person or by correspondence in the 2013 meeting.

NAME	ADDRESS	PHONE/FAX	E-MAIL
Peter J. Auster By correspondence	University of Connecticut Dept of Marine Sciences and Sea Research Foundation-Mystic Aquarium 1080 Shennecosset Rd Groton CT 06340 United States	Phone +1 860 405 9121 Fax +1 860 445 2969	peter.auster@uconn.edu and pauster@searesearch.org
Odd Aksel Bergstad	Institute of Marine Research Flødevigen Marine Research Station PO Box 1870 4817 His Norway	Phone +47 37059019 Fax +47 37059001	oddaksel@imr.no
Robert Brock By correspondence	National Oceanic and Atmospheric Administration NOAA National Marine Protected Areas Center 1305 East West Highway Silver Spring MD 20910-3282 United States	Phone +1 301 563 1144 Fax +1 301 713 3110	Robert.Brock@noaa.gov
Ana Colaço	University of the Azores Department of Oceanography and Fisheries Rua Prof. Doutor Frederico Machado, No. 4 PT-9901 862 Horta Portugal	Phone +351 292200427 Fax +351 292200411	acolaco@uac.pt
Pablo Duran Muñoz By correspondence	Instituto Español de Oceanografía Centro Oceanográfico de Vigo PO Box 1552 36200 Vigo (Pontevedra) Spain	Phone 34 986 492111 Fax 34 986 498626	pablo.duran@vi.ieo.es
Helen Ellwood By correspondence	Joint Nature Conservation Committee Monkstone House City Road PE1 1JY Peterborough United Kingdom	Phone +44 Fax +44	helen.ellwood@jncc.gov.uk
Neil Golding	Joint Nature Conservation Committee Monkstone House City Road PE1 1JY Peterborough United Kingdom	Phone: +44 1733 866840	neil.golding@jncc.gov.uk
Anthony Grehan By correspondence	National University of Ireland Galway Martin Ryan Institute University Road Galway Ireland		Anthony.Grehan@nuigalway.ie

NAME	ADDRESS	PHONE/FAX	E-MAIL
Jason Hall-Spencer By correspondence	University of Plymouth School of Marine Science and Engineering Drake Circus PL4 8AA Plymouth Devon United Kingdom		jason.hall-spencer@plymouth.ac.uk
Kerry Howell By correspondence	University of Plymouth School of Marine Science and Engineering Drake Circus PL4 8AA Plymouth Devon United Kingdom		kerry.howell@plymouth.ac.uk
Jeroen Ingels	Plymouth Marine Laboratory Prospect Place, The Hoe PL1 3DH Plymouth Devon United Kingdom	Phone +44 1752 633 476 Fax +44	Jein@pml.ac.uk
Ellen Kenchington By correspondence	Fisheries and Oceans Canada Bedford Institute of Oceanography PO Box 1006 Dartmouth NS B2Y 4A2 Canada	Phone 1 902 426 2030	ellen.kenchington@dfo-mpo.gc.ca
Fiona McIntyre	Marine Scotland-Science Marine Laboratory Aberdeen AB11 9DB Scotland UK	Phone +44 1224 295516	f.mcintyre@marlab.ac.uk
Lenaïck Menot By correspondence	Ifremer Centre de Brest PO Box 70 29280 Plouzané France	Phone +33 Fax +33	lenaick.menot@ifremer.fr
Pål Buhl Mortensen	Institute of Marine Research PO Box 1870 Nordnes 5817 Bergen Norway		paal.buhl.mortensen@imr.no
Francis Neat Chair	Marine Scotland-Science Marine Laboratory PO Box 101 AB11 9DB Aberdeen Scotland United Kingdom	Phone +44 1224 295516 Fax +44 1224 295511	F.Neat@MARLAB.AC.UK
Fernando Nieto-Conde Observer	European Commission Directorate for Maritime Affairs and Fisheries rue Joseph II, 79 J-79, 02/064 B-1000 Brussels Belgium	Phone +32 2-29-99755 Fax +32 2-29-79549	Fernando.NIETO-CONDE@ec.europa.eu
Carlos Pinto	International Council for the Exploration of the Sea H. C. Andersens Boulevard 44–46	Phone +45 Fax +45	carlos@ices.dk

NAME	ADDRESS	PHONE/FAX	E-MAIL
	1553 Copenhagen V Denmark		
Steve Ross By correspondence	University of North Carolina Wilmington Center for Marine Science CMS South Annex Campus Box 5928 Wilmington NC 28409 United States	Phone +1 901 395-3905	rosss@uncw.edu
Vladimir Vinnichenko	Knipovich Polar Research Institute of Marine Fisheries and Oceanography(PINRO) 6 Knipovitch Street 183038 Murmansk Russian Federation	Phone 7 8152 472192 47 789 10423 Fax 7 8152 473331	vinn@pinro.ru
Les Watling	University of Hawaii at Manoa Honolulu Hawaii 96822 United States	Phone +1 808 956 8621 Fax +1 808 956 9812	watling@hawaii.edu