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WESTERN CENTRAL ATLANTIC FISHERY COMMISSION

Report of the

TECHNICAL WORKSHOP ON BOTTOM FISHERIES IN THE HIGH SEAS OF THE WESTERN CENTRAL ATLANTIC

Barbados, 30 September–2 October 2014



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PREPARATION OF THIS DOCUMENT

The Working Group on the Management of Deep-sea Fisheries of the Western Central Atlantic Fishery Commission (WECAFC) was established by the fourteenth session of WECAFC in February 2012. Its first meeting took the form of a “Technical Workshop on Bottom Fisheries in the High Seas Areas of the Western Central Atlantic”. This Technical Workshop was co-organized by WECAFC, FAO and the Ministry of Agriculture, Food, Fisheries and Water Resource Management of Barbados. The meeting was made possible through a financial contribution from the Government of Japan under the project Fisheries Management and Marine Conservation within a Changing Ecosystem Context (GCP/INT/253/JPN). The meeting was held in Christ Church, Barbados, from 30 September to 2 October 2014.

The documents included as Appendices 5–7 are reproduced as submitted.

FAO/Western Central Atlantic Fishery Commission. 2015. *Report of the first meeting of the WECAFC Working Group on the Management of Deep-sea Fisheries, Christ Church, Barbados, 30 September – 2 October 2014.* FAO Fisheries and Aquaculture Report No. 1087. Bridgetown, FAO. 61 pp.

ABSTRACT

The first meeting of the Working Group on the Management of Deep-sea fisheries of the Western Central Atlantic Fishery Commission (WECAFC) took the form of a “Technical Workshop on Bottom Fisheries in the High Seas Areas of the Western Central Atlantic”. The meeting was held in Christ Church, Barbados, from 30 September to 2 October 2014. This report contains a summary of the presentations, discussions, conclusions and recommendations of the meeting. The report is organized along topics rather than in chronological order.

The meeting brought together 31 fisheries experts from 17 WECAFC member States and 4 institutions. The Working Group compiled available information on the high seas fisheries in the WECAFC area and noted that deep-sea fisheries in the High Seas had been and were occurring, and that they were likely to increase in the future. The Working Group also noted the international instruments and recommendations related to protecting vulnerable marine ecosystems (VMEs) in the high seas of the WECAFC area. The group also noted with some concern that some of their shallow water fisheries were expanding into deeper waters.

FAO outlined the mechanisms currently used to manage deep-sea fisheries and VMEs that could be affected by deep-sea fisheries. The FAO Deep-sea Fisheries Guidelines were presented to the group, which then applied them to VME elements within the region. The Working Group proposed a total of five potential VMEs within the WECAFC area.

The recommendations of this workshop/working group will be presented for review to the seventh meeting of the WECAFC Scientific Advisory Group and to the sixteenth session of WECAFC.

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ABBREVIATIONS AND ACRONYMS

ABNJ	areas beyond national jurisdiction
CBD	Convention on Biological Diversity
CECAF	Fishery Committee for the Eastern Central Atlantic
CERMES	Centre for Resource Management and Environmental Studies
CFNO	Caribbean Fisherfolk Network of Organisations
COFI	FAO Committee on Fisheries
CRFM	Caribbean Regional Fisheries Mechanism
EBSA	ecological or biological significant area (CBD)
EEZ	exclusive economic zone
EFH	essential fish habitat (United States of America)
FAO Deep-sea Fisheries Guidelines	FAO International Guidelines on Deep-sea Fisheries in the High Seas
FIRMS	Fishery Resources Monitoring System (FAO)
HAPC	habitat areas of particular concern (United States of America)
GEF	Global Environment Facility
ICCAT	International Commission for the Conservation of Atlantic Tunas
IUU	illegal, unreported and unregulated (fishing)
MPA	marine protected area
NAFO	Northwest Atlantic Fisheries Organization
NEAFC	North East Atlantic Fisheries Commission
NEREIDA	NAFO Potential Vulnerable Marine Ecosystems-Impacts of Deep-sea Fisheries
NGO	non-governmental organization
NOAA	National Oceanic and Atmospheric Administration
RFB	regional fishery body
RFMO/A	regional management organization/arrangement
SAG	Scientific Advisory Group (WECAFC)
SAI	significant adverse impact
SEAFO	South East Atlantic Fisheries Organisation
SICA/OSPESCA	Organización del Sector Pesquero y Acuícola del Istmo Centro Americano
SIODFA	Southern Indian Ocean Deepsea Fishers Association
SLC	FAO Subregional Office for the Caribbean
TAC	total allowable catch
UNCLOS	United Nations Convention on the Law of the Sea
UNGA	United Nations General Assembly
VME	vulnerable marine ecosystem
VMS	vessel monitoring system
WECAFC	Western Central Atlantic Fishery Commission

OPENING SESSIONS

1. The first meeting of the Working Group on the Management of Deep-sea Fisheries of FAO/Western Central Atlantic Fishery Commission (WECAFC) was the “Technical Workshop on Bottom Fisheries in the High Seas Areas of the Western Central Atlantic” held in Christ Church, Barbados, from 30 September to 2 October 2014. The meeting was hosted by the FAO/WECAFC Secretariat at United Nations House, Christ Church. The opening address was delivered by Mr Deep Ford, the FAO Subregional Coordinator for the Caribbean, and welcoming remarks were delivered by Mr Stephen Willoughby, Chief Fisheries Officer, Fisheries Division of the Ministry of Agriculture, Food, Fisheries and Water Resource Management of Barbados.

2. Representatives of the following countries and territories attended the meeting: Antigua and Barbuda, Bahamas, Barbados, Belize, Colombia, the Dominican Republic, Grenada, Guyana, Nicaragua, Panama, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, the United Kingdom of Great Britain and Northern Ireland (Bermuda), the United States of America, and Venezuela (Bolivarian republic of). Also in attendance were representatives of the Caribbean Regional Fisheries Mechanism (CRFM), the Organización del Sector Pesquero y Acuicola del Istmo Centro Americano (SICA/OSPESCA), the Centre for Resource Management and Environmental Studies (CERMES) of the University of the West Indies, the Caribbean Fisherfolk Network of Organisations (CFNO), WECAFC, FAO and an invited FAO resource person. The list of 31 participants, including Working Group members, observers and other participants, can be found in Appendix 1.

3. Mr Stephen Willoughby, Chief Fisheries Officer from the Fisheries Division, Barbados, was elected Chairperson of the Meeting. Dr Tony Thompson from FAO agreed to act as rapporteur, with the assistance of Dr Raymon van Anrooy and other FAO participants present.

4. The meeting adopted the agenda as shown in Appendix 2.

5. Jessica Sanders presented the objectives of this workshop, which were based on the terms of reference for the WECAFC Working Group on the Management of Deep-sea Fisheries as provided at the fourteenth Commission meeting¹ and as circulated in the prospectus sent to WECAFC members. The objectives were:

- Raise awareness on the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Sea (FAO Deep-sea Fisheries Guidelines) and various United Nations General Assembly (UNGA) resolutions for WECAFC members.
- Identify initial deep-sea fisheries.
- Review initial information on vulnerable marine ecosystems (VMEs) from the WECAFC area.
- Recommendations for medium- to longer-term priorities and collaboration identified.

6. The outputs of the meeting were identified as:

- a workshop report;

¹ FAO Western Central Atlantic Fishery Commission. 2012. *Report of the fourteenth session of the Commission, Panama City, Panama, 6–9 February 2012. Rapport de la quatorzième session de la Commission, Panama, Panama, 6-9 février 2012. Informe de la decimocuarta reunión de la Comisión, Ciudad de Panamá, Panamá, 6-9 de febrero de 2012*, Appendix L, pp. 94–96. FAO Fisheries and Aquaculture Report/FAO Rapport sur les pêches et l'aquaculture/FAO Informe de Pesca y Acuicultura No. 1000. Bridgetown, FAO. 2012. 99 pp. (also available at www.fao.org/docrep/017/i2677t/i2677t.pdf).

- draft recommendations to WECAFC 16 on bottom fisheries in areas beyond national jurisdiction (ABNJ);
- WECAFC-relevant information added to the Global Database of Information on VMEs in ABNJ, to the next edition of the Worldwide Review of Bottom Fisheries in the High Seas, and as appropriate to the upcoming VME Processes and Practices report.

7. The plan of work for the workshop was explained, noting that the meeting would start with introductions of international instruments relevant to the WECAFC region and a global overview of deep-sea fisheries and VMEs on Day 1. Selected examples from other regions of the Atlantic Ocean would be provided and information from within the ABNJ of the WECAFC region on deep-sea fisheries and VMEs during Day 2. Finally, the workshop was tasked with identifying supplementary information supporting deep-sea fisheries in the WECAFC region, including data requirements, the drafting of recommendations, and revising terms of reference, during Day 3.

INTRODUCTION

8. Dr Raymon van Anrooy, WECAFC Secretary and FAO Fisheries and Aquaculture Officer for the Caribbean provided an “Introduction of the Working Group”. He started off with an introduction to the WECAFC, detailing its history, objectives, guiding principles and membership. He then continued by outlining the mandate area of WECAFC (Figure 1) and noted that 86 percent of the mandate area could be considered deep sea.

Figure 1

Map of the WECAFC mandate area



9. Information was provided on the organizational structure of WECAFC and the outcomes of the fifteenth session of WECAFC, which was held in Trinidad and Tobago in March 2014. He mentioned that the fifteenth session of WECAFC: (i) adopted 9 of the 10 presented regional fisheries management recommendations and resolutions; (ii) thanked FAO for the performance review conducted on this regional fishery body (RFB); (iii) adopted the Strategic Plan 2014–2020; (iv) approved the programme of work (2014–15); (v) endorsed the partnership between WECAFC – Fishery Resources Monitoring System (FIRMS); (vi) adopted the revised rules of procedures; and (vii) discussed the options for strategic reorientation.

10. Reference was made to the report of WECAFC 14 (2012), which issued a “Resolution of the members of the Western Central Atlantic Fishery Commission on strengthening the implementation of international fisheries instruments” (WECAFC/14/2012/1). This resolution requested that members agree to take actions and measures to strengthen implementation of existing international fisheries

instruments and those that may be developed in the future, including the FAO Deep-sea Fisheries Guidelines. In the same resolution, members agreed to establish a WECAFC Working Group on the Management of Deep-sea Fisheries to inform the management of such fisheries by WECAFC members in such a manner as to promote responsible fisheries that provide economic opportunities while ensuring the conservation of marine living resources and the protection of marine biodiversity and to facilitate the implementation of the FAO Deep-sea Fisheries Guidelines.

11. The updated terms of reference of the Working Group on the Management of Deep-sea Fisheries, as agreed by WECAFC 15, included the following tasks:

- Collection and review of existing (past and present) data and information on the deep-sea fisheries in the WECAFC area, in addition to identifying the potential of such fisheries in the region.
- Meet and analyse the data and information collected and make recommendations for the sustainability of the deep-sea fisheries in the WECAFC region.
- Identify priority areas for future work and international funding and support for the work identified.
- Organize in 2014 a WECAFC Technical Workshop on Bottom Fisheries in the ABNJ of the Western Central Atlantic to present and discuss the findings and recommendations of the Working Group, and to obtain inputs from the WECAFC members.
- Develop a chapter on the Western Central Atlantic for the 2014/2015 FAO Worldwide Review of Bottom Fisheries in the High Seas.
- Report to the Commission, at its next session, its conclusions and recommendations for further activities.

12. Dr Van Anrooy noted that among the ten joint working groups established in 2012 and 2014, the Working Group on the Management of Deep-sea Fisheries was the least active, owing to funding constraints and relatively less interest in ABNJ fisheries by the WECAFC membership. The WECAFC Secretary finalized his introductory presentation by mentioning that the Secretariat had developed and circulated to potential members a draft work plan (in May 2012), established contacts with the Deep Sea Conservation Coalition and various non-governmental organizations (NGOs) (in 2012), drafted a proposal and submitted it to France and the United States of America for supporting some initial research on deep-sea fisheries in the WECAFC area (in 2013) and continued the search for funding in support of the first meeting (2013–14).

13. Finally, he welcomed this technical workshop as the first real activity of the Working Group, and emphasized that this was only made possible owing to generous support from the Government of Japan, active participation from WECAFC members and the many efforts made by FAO colleagues.

INSTRUMENTS AND CONCEPTS

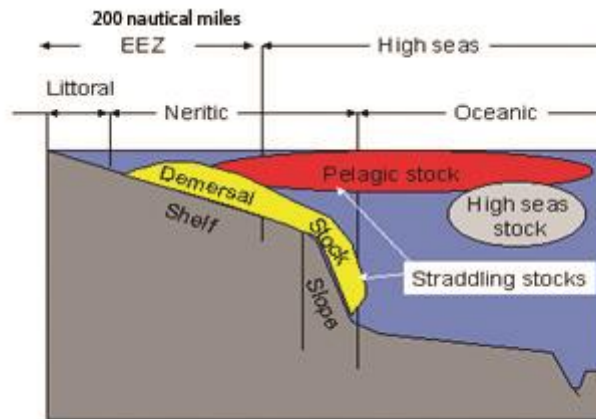
International fisheries instruments of importance to fisheries in the ABNJ of the WECAFC region

14. Dr Raymon van Anrooy, WECAFC Secretary, presented “International fisheries instruments of importance to fisheries in the ABNJ of the WECAFC region”. He discussed binding and non-binding instruments of relevance to ABNJ fisheries; the main instrument being the United Nations Convention on the Law of the Sea (UNCLOS), which lays down a comprehensive regime of law and order in the world’s oceans and seas establishing rules governing all uses of the oceans and their resources. Opened for signature on 10 December 1982 in Jamaica, UNCLOS entered into force on 16 November 1994 – after the sixtieth ratification. The presentation described the main relevant articles of UNCLOS for fisheries, responsibilities of coastal States and flag States, and highlighted the differences in regimes for the exclusive economic zones (EEZs) and ABNJ areas.

15. He referred to the commonly used fisheries terminology, which is detailed in Figure 2.

Figure 2

Fishery terminology



Source: www.fao.org/fishery/en

16. After discussing various articles of UNCLOS relevant for WECAFC members active or planning to become active in deep-sea fisheries, he then provided an overview of ratification of the relevant binding instruments by the 34 WECAFC members (Table 1).

Table 1

Ratification status of WECAFC-relevant binding instruments

Agreements	Ratifications	
	Total	Among WECAFC membership
1982 UN Convention on the Law of the Sea	166	32
1995 UN Fish Stocks Agreement	59	17
1993 FAO Compliance Agreement	39	12
2009 FAO Agreement on Port State Measures	13	1

17. He described the common characteristics of the international instruments, as well as the focus, objectives and main issues addressed by the FAO Compliance Agreement, the UN Fish Stocks Agreement and the FAO Port State Measures Agreement.

18. Challenges for the management of shared fish stocks in the WECAFC area were discussed, which included:

- high concentration of countries;
- large geographical area;

- unresolved maritime boundaries among WECAFC members;
- lack of information, particularly in relation to fishing in the eastern ABNJ region of the WECAFC area.

19. Reference was also made to various important parts of the UN Fish Stocks Agreement, including the mechanisms for international cooperation, and to the possibility for developing States to utilize resources made available under the Part VII Assistance Fund.² It was noted that WECAFC could serve as a “mechanism for international cooperation” among WECAFC members, in support of implementation of the various international fisheries instruments in the region.

20. In this regard, it was also noted that various regional resolutions, declarations and policies emphasize the awareness of governments and other stakeholders towards increased efforts on implementation. The main policy documents are:

- Resolution of the members of the Western Central Atlantic Fishery Commission on strengthening the implementation of international fisheries instruments” (WECAFC/14/2012/1);
- CRFM (2010) Castries, Saint Lucia, Declaration on illegal, unreported and unregulated fishing;
- The Caribbean Community Common Fisheries Policy.

21. Dr van Anrooy also provided a short overview of the non-binding fisheries instruments that relate to the FAO Code of Conduct for Responsible Fisheries, including international plans of action (sharks, capacity, seabirds, and illegal, unreported and unregulated [IUU] fishing), international guidelines and technical guidelines.

22. Finally, he showed world maps depicting the tuna and non-tuna regional fisheries management organizations (RFMO). He described in short the role of RFMO/As and explained that WECAFC was not an RFMO/A but a regional fishery advisory body and that its fisheries management decisions are non-binding.

FAO Deep-sea Fisheries Guidelines

23. Jessica Sanders presented the “FAO International Guidelines on Deep-sea Fisheries in the High Seas” (FAO Deep-sea Fisheries Guidelines)³ that were developed following a request from the FAO Committee on Fisheries (COFI) at its Twenty-seventh Session in 2007 to assist States and RFMO/As to implement UNGA Resolution 61/105 (principally paragraphs 80–90) on deep-sea fisheries and VMEs. The FAO Deep-sea Fisheries Guidelines were developed through a series of international consultations in 2006–08 and adopted in 2008.

24. The FAO Deep-sea Fisheries Guidelines are designed for fisheries that occur beyond national jurisdiction, and where the catch includes species that can only sustain low exploitation rates, and for fishing gear that are likely to contact the seafloor during normal use. The objective of the Guidelines is to provide tools and guidance for sustainable deep-sea fisheries, and to facilitate and encourage the efforts of States and RFMO/As towards:

² More information on this fund is available at:
www.un.org/depts/los/convention_agreements/fishstocktrustfund/fishstocktrustfund.htm

³ FAO. 2009. *International Guidelines for the Management of Deep-sea Fisheries in the High Seas. Directives internationales sur la gestion de la pêche profonde en haute mer. Directrices Internacionales para la Ordenación de las Pesquerías de Aguas Profundas en Alta Mar*. Rome/Roma. 73 pp. (also available at <ftp://ftp.fao.org/docrep/fao/011/i0816t/i0816t.pdf>).

- sustainable use of marine living resources;
- prevention of significant adverse impacts (SAIs) on deep sea VMEs;
- protection of marine biodiversity that these ecosystems contain.

25. Many marine living resources exploited directly or caught as bycatch by deep-sea fisheries in ABNJ have biological characteristics that create specific challenges for their sustainable utilization and exploitation. These include:

- maturation at relatively old ages;
- slow growth;
- long life expectancies;
- low natural mortality rates;
- intermittent recruitment of successful year classes;
- spawning that may not occur every year.

26. As a result, many deep-sea marine living resources have low productivity and are only able to sustain very low exploitation rates. Moreover, when these resources are depleted, recovery can take more than 20 years, and is not assured. The greatest concern is about the impact of deep-sea fisheries on VMEs, which are areas containing organisms with these challenging characteristics and defined by a set of five criteria:

- uniqueness or rarity;
- functional significance of the habitat;
- fragility;
- life-history traits of component species that make recovery difficult;
- structural complexity.

27. The FAO Deep-sea Fisheries Guidelines explain that VMEs are principally areas that contain ecosystems whose structure and function can be vulnerable to and compromised by SAIs. Vulnerability is related to the likelihood that a population, community or habitat will experience substantial alteration from short-term or chronic disturbance, and the likelihood that it would recover and in what time frame. These are, in turn, related to the characteristics of the ecosystems themselves, especially biological and structural aspects. Ecosystem integrity (i.e. ecosystem structure or function) is compromised by SAIs in a manner that:

- impairs the ability of affected populations to replace themselves;
- degrades the long-term natural productivity of habitats;
- causes, on more than a temporary basis, significant loss of species richness, habitat or community types. Impacts should be evaluated individually, in combination and cumulatively.

28. The FAO Deep-sea Fisheries Guidelines provide details of protocols to assess VMEs and SAIs, and this has developed the need for fisheries scientists and benthic ecologists to work closely together. With VMEs, there has been a need to map fisheries into existing and new fishing areas in an attempt: to halt uncontrolled expansion and freeze effort at current levels; to introduce exploratory fishing protocols in new fisheries areas to assess possible impacts prior to the commencement of any commercial operation; to quantitatively monitor bycatch of corals and sponges and to relate this to the activation of encounter protocols that trigger move-on rules or area closures; and to assess fisheries at a much finer spatial scale than previously undertaken.

29. The implementation of the FAO Deep-sea Fisheries Guidelines was the subject of an FAO workshop in Busan, the Republic of Korea, in 2010.⁴ Although the workshop occurred only two years after the deadlines imposed by UNGA Resolution 61/105, it was already observed that there was a need to develop further guidance on: impacts and risk assessment, encounter protocols and related mitigation measures, and the move-on rule; and the use of the VME criteria, including triggers for what degree of presence constitutes a “significant concentration”. It has also become clear that the state of knowledge of deep-sea fisheries needs to be improved in order to understand more fully the overlap and relationships between the various deep-sea fisheries using longlines, gillnets pots and bottom trawls, and the VMEs.

30. Initial discussions focused on placing deep-sea fisheries within the context of the current regional fisheries programmes within the Caribbean that focus on inshore areas. Deep-sea fisheries are not generally considered a priority for the region. However, members felt that developing a process to safeguard fish stocks and VMEs within the ABNJ of the WECAFC region, now and for the future as a common heritage, is the responsibility of all WECAFC members and, according to the approach taken, may not in fact require that much time or cost, especially if costs can be borne by the industry. It was also explained that most of the content of the FAO Deep-sea Fisheries Guidelines can also be applied by States within national waters, and examples of parallel processes being developed within national waters of Canada, the European Union (Member Organization), the United States of America, and others, were provided. Another discussion point was that the FAO Deep-sea Fisheries Guidelines refer to collaboration with industry and the use of fishing vessels as sampling platforms. Paragraph 80 of the FAO Deep-sea Fisheries Guidelines states “States should encourage dialogue and collaboration with responsible deep-sea fisheries operators in the development of fishery management plans, recognising the value of industry information and experience in resource assessment and fisheries management, identification of VMEs, responsible fishing techniques, gear development, and implementation methods to avoid or mitigate significant adverse impacts on VMEs.” The management of deep-sea fisheries and the collection of information on the deep seas, where there are few widely dispersed vessels operating far from land, mean that operators need to be involved. There are good examples of where interviews with deep-sea operators have been the starting point for understanding the processes and management of deep-sea fisheries, and operators often want to be seen as responsible fishers. An example of this can be seen in the Indian Ocean with the Southern Indian Ocean Deepsea Fishers Association (SIODFA). Another example comes from the Canadian industry, which declared a voluntary closure in 2007.⁵ The offshore shrimp and groundfish sectors introduced a 12 500 km² coral protection zone in the northern Labrador Sea to protect coral concentrations in that area. This is part of an industry-led initiative that also includes other conservation measures designed to promote marine stewardship and the preservation of sensitive marine ecological features. For example, fishing captains will collect data on other coldwater coral they encounter and communicate this information to the fleets so that gear can be removed and/or fishing activity halted in those regions.

Introduction to VMEs

31. Jessica Sanders presented a summary of the VME process to provide participants with an overview that would be helpful when discussing possible VMEs within the WECAFC ABNJ. The

⁴ FAO. 2011. *Report of the FAO Workshop on the Implementation of the International Guidelines for the Management of Deep-sea Fisheries in the High Seas – Challenges and Ways Forward, Busan, Republic of Korea, 10–12 May 2010*. FAO Fisheries and Aquaculture Report No. 948. Rome. 74 pp. (also available at www.fao.org/docrep/014/i2135e/i2135e00.pdf).

⁵ Fisheries and Oceans Canada. 2010. Northern Shrimp (SFAs) 0-7 and the Flemish Cap. In: *Fisheries and Oceans Canada* [online]. [Cited 30 September 2014]. www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/ifmp-gmp/shrimp-crevette/shrimp-crevette-2007-eng.htm#n3.2

concept of VMEs was developed for deep-sea fisheries that use fishing gear that contact the seafloor during the normal course of operation. The process is designed to identify areas where there may be SAIs on VMEs during the fishing operations, and to develop and implement measures to mitigate such SAI. The VMEs meet one or more of the following criteria:

1. uniqueness or rarity;
2. functional significance of the habitat;
3. fragility;
4. life-history traits of component species that make recovery difficult;
5. structural complexity;

32. Examples of species groups, communities and habitat that can be identified as VMEs are certain coldwater corals and hydroids, e.g. reef builders and coral forest, sponge-dominated communities, communities composed of dense emergent fauna, and seep and vent communities. These typically occur on certain topographical, hydrophysical or geological features such as: submerged edges and slopes, seamounts, guyots, banks, knolls, and hills, canyons and trenches, hydrothermal vents, and cold seeps. It was noted that the criteria for identifying VMEs and ecological or biological significant areas (EBSAs) were broadly similar, and arose from a common beginning. However, there are important differences in their rationale and application. While VMEs are a management tool applied by RFMO/As and States to protect certain benthic communities from SAIs caused by bottom-contact fishing gear, EBSAs describe and catalogue, as the name implies, areas of ecological or biological significance in the world's oceans, and they are shown in the EBSA repository.⁶ The EBSAs are independent of management measures, although appropriate authorities can use the EBSA repository as a source of information and apply measures, when and where necessary, to ensure that the essential characteristics of the area are maintained.

33. The group also asked whether the VME concept within the FAO Deep-sea Fisheries Guidelines could be applied to aggregations of fish, to turtles, or to other non-benthic animals. The FAO Deep-sea Fisheries Guidelines do not limit themselves to benthic invertebrates, and paragraph 42 talks about fish spawning areas and nursery areas. To date, VMEs have not been identified for such vertebrate aggregations, and it is felt that there are generally more appropriate protective measures that can be used by RFMO/As. However, the Northwest Atlantic Fisheries Organization (NAFO) Scientific Council (NAFO SC Report 2013, p. 42) has identified the Southeast Shoal as an area important for spawning aggregations of capelin, a nursery area for yellow tail flounder and American plaice, an important habitat for wedge clam, cod, striped wolfish, and humpback whales. It is also listed as a VME element based on its physical characteristics (NAFO CEM 2014). This area crosses the international boundary with Canada and requires joint discussions between Canada and NAFO for its full protection.⁷ As yet, it has not been listed as a VME based on these attributes.

34. As WECAFC has only an advisory mandate, it is difficult to draw parallels with areas that have RFMO/As. However, in regions with functioning RFMO/As that have divided their areas into existing and unfished areas, the costs of any exploratory fishing in unfished areas are borne by the industry. Encounters by commercial vessels also help map VMEs. However, the costs of detailed research surveys are normally borne by the State undertaking the survey.

⁶ Convention on Biological Diversity. 2014. Ecologically or biologically significant marine areas. In: *Convention on Biological Diversity* [online]. [Cited 30 September 2014]. www.cbd.int/ebsa/

⁷ Fisheries and Oceans Canada. 2013. Capelin on the Grand Banks. In: *Fisheries and Oceans Canada* [online]. [Cited 30 September 2014]. www.dfo-mpo.gc.ca/science/Publications/article/2008/03-06-2008-eng.html

35. The FAO Deep-sea Fisheries Guidelines (paragraph 63) state that “Until a functioning regulatory framework is developed to prevent significant adverse impacts ... i. closing of areas to deep-sea fisheries where VMEs are known or likely to occur, ...”. As VMEs to date have mainly been for the protection of attached corals and sponges, and as the Guidelines are written for fisheries where “the fishing gear is likely to contact the seafloor during the normal course of fishing operations.” (paragraph 8ii), the closures tend to be for gear types that contact the seafloor during normal use. This includes bottom trawls, bottom-set longlines, gillnets and traps. In addition, bottom gear that could come into contact with the seafloor also includes deep mid-water trawls that are designed to fish close to the seafloor. The RFMO/As are free to select whatever mitigation measures they see appropriate to avoid SAI, and this could further specify gear restrictions.

Data requirements for deep-sea fisheries management

36. The management of deep-sea fisheries, the identification of VMEs, and an assessment of the risk of SAIs require information that is invariably difficult and expensive to acquire. Moreover, once acquired, this information needs to be shared with the appropriate committees and working groups, so that scientific assessments can be undertaken, advice formulated, and measures adopted. Information on deep-sea fisheries is scarce in the Caribbean; however, it is known that there has been some deep-sea fishing within the WECAFC area. Indeed, there is evidence from the answers to the questions circulated before and during this workshop, that some of the shallow-water snapper and shrimp fisheries are moving into deeper waters.

37. WECAFC is an FAO RFB, and is the competent authority in the ABNJ of the Caribbean and Western Central Atlantic. It can assist its member States and non-member flag States of vessels fishing in the region in the collection of information from the region to help them in their efforts to assess deep-sea fisheries and manage their vessels fishing in the ABNJ portion of the WECAFC region. The current data collection procedures used by neighbouring RFMO/As were presented but deemed to be too complex for WECAFC, given its advisory mandate. It was suggested that a simplified data collection procedure would increase the chances of member and non-member flag States providing information on deep-sea fisheries to WECAFC. The basic information required to fulfil the requirements of implementing the FAO Deep-sea Fisheries Guidelines is:

- fishing location;
- gear used;
- depth and duration of deployment;
- catch (tonnes by species);
- effort (days fished);
- discards;
- bycatch (seabirds, turtles, corals, sponges).

38. Participants at the workshop discussed the means by which “fishing location” should be submitted. The WECAFC major fishing area (Area 31 and the northern part of Area 41) is not divided into subareas or divisions. Suggestions were made to use statistical areas of the International Commission for the Conservation of Atlantic Tunas (ICCAT), but subsequent investigations show that these vary according to the stock being reported on. No decision was made at the meeting, and the WECAFC Secretariat was asked to consider the matter further. Until such a decision is made on the reporting resolution, a sentence has been included in the data collection form that, as per FAO Deep-sea Fisheries Guidelines (paragraph 32), it should be at as fine-scale as possible. The participants suggested that the above data requirements should be developed into a data reporting form (Appendix 3).

39. Participants also asked whether such a data request could be used to collect information on both historical and current fisheries activities. It was noted that the form could be used for either, but that it may be better to start with a request for the current fisheries and to review this at the next

meeting of the Working Group. Historical fishing locations would be important if there was going to be a benefit from dividing the WECAFC area into fished and unfished areas to allow for the application of an exploratory fishing protocol.

DEEP-SEA FISHERIES AND VMES

VMES in the ABNJ of the Atlantic since the adoption of the FAO Deep-sea Fisheries Guidelines

40. Dr Ellen Kenchington presented an overview of “Vulnerable Marine Ecosystems in the ABNJ of the Atlantic since the adoption of the FAO Deep-Sea Guidelines”. A timeline for the resolutions was presented along with the actions taken by the RFMO/As. It was noted how quickly RFMO/As moved to close areas, particularly seamounts. An example was given where an area had been negotiated between a State and an RFMO to protect coral from the harmful impacts of bottom-contact fishing gear. This area was partly within the EEZ of Canada and partly within the NAFO regulatory area in ABNJ (the 3O Coral Closure⁸). Key points from UNGA Resolutions and the FAO Deep-sea Fisheries Guidelines were provided, and it was noted that, for many areas of the deep sea, RFMO/As have been guided by the precautionary approach and the language of the UNGA Resolutions that call for actions where VMES are known or likely to occur. The use of topographical features, such as seamounts, hydrothermal vents, canyons and ridges, as proxies for VMES was explained and justified. Progress since the publication of the FAO Deep-sea Fisheries Guidelines was summarized, including the establishment of new RFMO/As and the move by the European Union (Member Organization – Spain) and the Republic of Korea to adopt regulations to implement UNGA Resolutions in non-RFMO/A areas. Lastly, the suite of conservation and management tools used by RFMO/As to protect VMES and facilitate recovery of deep-sea fish stocks were discussed. These included: effort restrictions, vessel licensing, vessel monitoring system (VMS) monitoring and improved data reporting, total allowable catch (TACs) for selected species, bycatch limits, gear modifications (e.g. exclusion devices), closed areas to certain gear types, freezing of the fishing footprint, encounter protocols and move-on rules, gillnet ban > 200 m, and port State control and blacklisting to reduce IUU fishing. For each of these, the context within the UNGA Resolutions and the FAO Deep-sea Fisheries Guidelines was provided and an example of RFMO action was discussed. It was noted that not all of these tools were used by every RFMO and that management actions were implemented according to individual circumstances.

41. The group thanked Dr Kenchington for a very interesting, clear and comprehensive presentation. The first question related to the impacts that VMES have on the fisheries by way of displacing effort off traditional fishing areas. It was explained that, in 2004–06, there had been a general belief that bottom trawl fisheries were severely impacting on and destroying deepwater corals, and that all seamounts contained extensive coral habitats. While there has been documented damage, the overall impression that is now emerging is that the demersal fisheries tend not to occur in areas with high concentrations of corals or sponges (although in some areas, research vessel trawls have landed several tonnes of coral or sponge in a 1 km tow) and that fishers often avoid such areas so as not to lose gear or contaminate catches. Therefore, the impact on the fisheries of the current bottom closures in the Atlantic, for example, has typically resulted in only a very minor impact on the fishery. Indeed, some fisheries are prosecuted close to current VME boundaries, indicating that VMES may be supporting the fishery production.

42. There was also a question on why current VME closures tend to be for 2–5 years when the organisms they are protecting live for decades and sometimes centuries. It was explained that VMES were the result of fisheries measures based on knowledge available at the time of the adoption of the

⁸ Northwest Atlantic Fisheries Organization. 2014. *Northwest Atlantic Fisheries Organization: Conservation and Enforcement Measures* [online]. [Cited 30 September 2014]. <http://archive.nafo.int/open/fc/2014/fcdoc14-01.pdf>

measure to mitigate against threats that are currently seen to have a high risk of occurring. The VME measures are part of the suite of measures aimed at sustainable fisheries. As circumstances change and knowledge increases, it is appropriate to review VME information and measures on VMEs (and on the relevant fisheries) to see whether they are still appropriate. In most cases, the reviews have resulted in modification to boundaries or creation of new closures to afford greater protection to VMEs.

Deep-sea fisheries in the ABNJ of the Atlantic since 2006

43. Dr Tony Thompson from FAO gave a presentation outlining some more specific examples of actions that have occurred in the Atlantic since 2006. The UNGA, in its Resolutions on sustainable fisheries from 2003 onwards, started to include actions focusing on the management of deep-sea fisheries in ABNJ. This included both the management of the targeted deep-sea fish stocks and investigations on SAIs that deep-sea fisheries may cause, with an emphasis on deep-sea corals. This presentation outlined some of the international instruments adopted to facilitate data collection for stock assessment, and then looked at three examples in the Atlantic Ocean where changing practices had improved sustainable fisheries management for certain deep-sea target species. Examples were drawn from occasional seamount fisheries in the Northwest Atlantic, the provision of quantitative advice on deep-sea stocks in the Northeast Atlantic, and the application of exploratory fishing protocols and impact assessments in the Southeast Atlantic. The above examples were discussed with reference to deep-sea fisheries in the Western Central Atlantic and on how mechanisms could be established to collect and collate basic fisheries information that could be used collectively in the region.

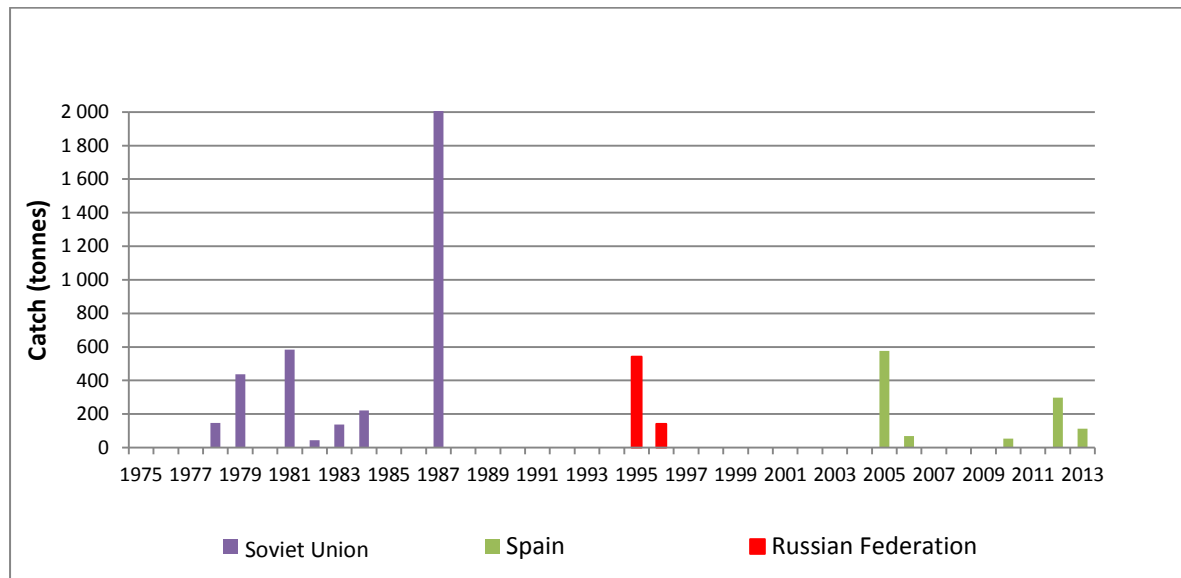
44. It was noted during the discussions that these actions require considerable amounts of information and participants asked how this information was collected. The broad answer to this question is that information comes from a variety of sources but often originates from the flag State of the fishing vessel for compilation and for sharing, possibly in summary form, in accordance with the measures of the appropriate RFMO/As via the secretariats. Much supporting information, often of a detailed and technical nature, and again from various sources, is also brought to the RFMO/A working groups directly by working group participants. Some information used for compliance passes directly to regional monitoring centres or to the RFMO/As, such as VMS information, electronic logbook reporting, and certain regular catch reporting. The information is usually divided into that used for compliance and that used for scientific purposes. In the past, this information used to be kept separate, but there has been a tendency in recent times for information collected for compliance purposes to be shared with scientific bodies, but usually in summary form. Overall, the information usually comes from VMS, which now includes a range of gear, catch and effort information, including electronic logbook reporting, compliance and scientific observers (when carried), logbooks, port sampling, and biological sampling either on board by observers or in the ports. The sharing and access permissions to this information vary and can require more formal data sharing agreements. The information used for scientific stock assessments is usually supplemented by additional information where available, such as scientific surveys and independent estimates.

45. It was further noted that there were few deep-sea fisheries being undertaken by the countries represented at the workshop, and the deep-sea fisheries that representatives were involved in were normally an extension of shallower-water fisheries into deeper waters, typically within the EEZ of the country concerned. There is information from a few countries (see figure below) that have been engaged in deep-sea fisheries in FAO Area 31 (Western Central Atlantic). Other countries may have done so or may do so in the future. Previous fisheries are believed to have all occurred on the Corner Seamounts, which is an area where deep-sea fisheries for alfonso occur within both Area 21

(Northwest Atlantic) and Area 31 (Western Central Atlantic).⁹ There have also been catches of alfonsino in the Southwestern Atlantic. These fisheries can be conducted by both bottom trawls and deeper mid-water trawls, and so are not confined to a fishery using bottom-contact gear and, therefore, may not impact on VMEs. Figures 3–5 show catches of alfonsino in the Northwest, Western Central and Southwest Atlantic derived from the FAO FishStatJ database¹⁰ with, respectively, maximum annual reported catches of 2 012, 278 and 749 tonnes from the three areas. Vinnichenko (1977)¹¹ provides a good summary of exploratory Russian fisheries on the Corner Seamounts between 1976 and 1996, where 10 200 tonnes of deep-water fish (mainly alfonsino but also other possible commercial species including black scabbard fish, black cardinal fish, wreckfish, and flint-perch [Mediterranean slimefish; silver roughy]) were taken off the Corner Seamounts in 1976 and smaller amounts since that were not recorded in the FishStatJ database (although the catches reported from 1977 onwards by Vinnichenko follow closely those provided by FishStatJ for alfonsino).

Figure 3

Alfonsino catch in the Northwest Atlantic (Area 21)



⁹ Thompson, A.B. & Campanis, G.M. 2007. *NAFO SCR 07/06* [online]. [Cited 30 September 2014]. <http://archive.nafo.int/open/sc/2007/scr07-006.pdf>; and *Worldwide review of bottom fisheries in the high seas, 2009*, p. 39.

¹⁰ FAO. 2011–2014. Fisheries and aquaculture software. FishStatJ - software for fishery statistical time series. In: *FAO Fisheries and Aquaculture Department* [online]. Rome. Updated 22 July 2014. [Cited 30 September 2014]. www.fao.org/fishery/statistics/software/fishstatj/en

¹¹ Vinnichenko, V.I. 1997. Russian Investigations and Deep Water Fishery on the Corner Rising Seamount in Subarea 6. *NAFO Sci. Coun. Studies*, 30: 41–49. (also available at <http://archive.nafo.int/open/studies/s30/Vinnichenko.pdf>).

Figure 4

Alfonsino catch in the Western Central Atlantic (Area 31)

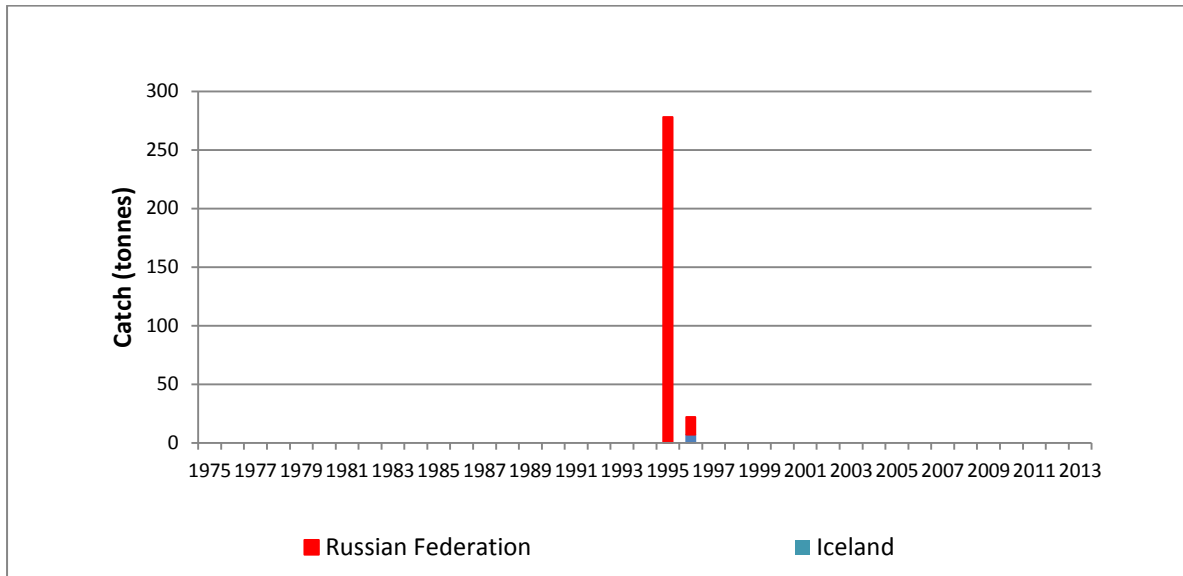
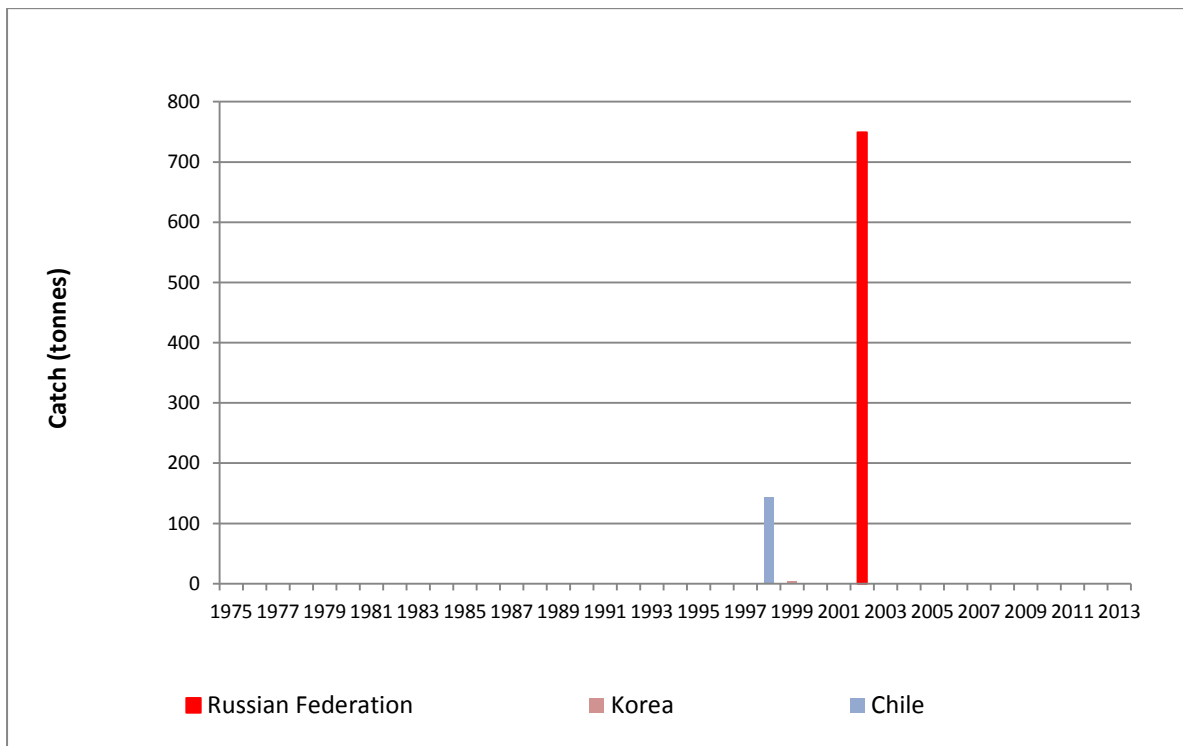


Figure 5

Alfonsino catch in the Southwest Atlantic (Area 41)



46. Participants asked whether there was a method of collecting and collating such information within the WECAFC area. Participants felt that flag States should be collecting information on their vessels flying their flag, conducting fishing operations anywhere in ABNJ, as already provided for in a number of international legal instruments. Participants reiterated that WECAFC does not require its member States to provide information on vessels operating in the ABNJ of the WECAFC area of competence. Any information provided by flag States on vessels operating in the ABNJ of the WECAFC competence area should therefore be considered as being provided on a voluntary basis. Participants pointed out that while many States have legislation that provides for the obligation of vessels flying their flag and operating in ABNJ to submit information, possibly in a summary form, to responsible authorities, WECAFC should request flag States to provide information on any vessel operating in, or with an interest in the ABNJ of the WECAFC competence area. This topic was discussed again on the last day and a recommendation was made for the collecting of such information for Area 31.

Sharing of experiences from the Northwest Atlantic (NAFO)

47. Dr Andrew Kenny, Co-Chair, NAFO Working Group on Ecosystem Science and Assessment (formerly the Working Group on Ecosystem Approaches to Fisheries Management) presented an overview of VME-related research in the NAFO regulatory area through Skype. Work started on VMEs in NAFO in 2007, when it was agreed to establish a scientific working group to focus on meeting the requirements of UNGA Resolution 61/105, specifically in identifying and protecting VMEs by 2008. There are two main sources of data and information that support the ongoing studies in NAFO: (i) a collaborative international research and development programme – the NAFO Potential Vulnerable Marine Ecosystems-Impacts of Deep-sea Fisheries (NEREIDA) – which completed surveys of the entire fishing footprint in 2009 and 2010, resulting in large numbers of biological samples (dredges, cores, video), which continue to be analysed today; and (ii) the fishery-independent trawl surveys conducted by the European Union (Member Organization) and Canadian authorities each year, which document all the catch contents include invertebrates, e.g. VME indicator species. The results of these surveys have allowed detailed maps of VME distribution to be produced. From these maps, a set of closed areas have been agreed. As this process evolves each year, with the addition of new sample data and updated analyses, revisions to the number and extent of fishery closures are agreed, taking into account areas of active and historical fishing effort – details of some of the most recent outcomes can be found on the NAFO website and in the booklet describing NAFO's conservation and enforcement measures.¹²

48. As VMEs are protected through area closures, the need to implement and rely upon VME encounter thresholds to protect VME within the fishing footprint is greatly reduced. Currently, NAFO is in the process of assessing the potential extent of SAIs likely to be caused by bottom fishing activities on VMEs and VME indicator species. Some preliminary results indicate that a high proportion of the recent fishing effort is exerted in relatively small regions within the fishing footprint. At least for some areas, this fishing effort seems to be concentrated in the near neighbourhood of VMEs, suggesting a potential functional connection between some VMEs and commercially exploited fish species. A key requirement to perform an appropriate assessment of SAIs is to understand and quantify the functional importance of VMEs.

49. The initial discussions centred on the extensive information and surveys that existed for the Northwest Atlantic and how this allowed NAFO to undertake analyses that were not possible in the Caribbean region. However, it was clarified that, although there had been a good bank of information in 2006, the early closures to protect the benthos had been precautionary and based on only limited

¹² Northwest Atlantic Fisheries Organization. 2014. NAFO publications. In: Northwest Atlantic Fisheries Organization [online]. [Cited 30 November 2014]. www.nafo.int/publications/frames/publications.html

information within these areas derived mainly from their physical attributes (seamounts and knolls). It was mentioned that, in Canada, the initial information on coral and sponge distribution had been acquired by interviewing fishers to find out the extent of their fishing areas and where they believed corals and sponges might occur. The detailed survey work from the NEREIDA programme has been extremely valuable in confirming the NAFO closures, making adjustments to boundaries, and developing the important science base needed to implement the FAO Deep-sea Fisheries Guidelines. The importance of identifying the fishing footprint within the NAFO region was also stressed, as this allowed fishing to continue in previously fished areas with minimal or no changes to current practices, and then stricter measures involving exploratory fishing protocols to apply in areas that had not been subject to prior bottom fishing activities. Exploratory fishing protocols also apply within existing fishing areas when an existing fishery changes gear or shows a significant increase in effort. In NAFO's opinion, closures to bottom-contact fishing gear are the best way to protect VMEs, but it also notes that careful use of the encounter protocols and exploratory fishing protocols provide important supporting mechanisms where detailed mapping is not available.

50. The choice of indicator species was discussed. It was noted that this had initially been based on the FAO criteria and the examples provided in the FAO Deep-sea Fisheries Guidelines annex of the broad species groups and physical elements. Later, these have been refined by reviewing more than 500 invertebrate taxa caught in research vessel surveys, and these are now listed in NAFO's control and enforcement measures as VME indicator species and VME indicator elements.¹³ However, the encounter protocols used by NAFO require only the reporting of the catch of VME indicator species above a threshold, and the threshold levels are set for sea pens, other live corals, and sponges. Thus, although NAFO has onboard identification guides for corals¹⁴ and sponges,¹⁵ the initial notification that a VME may be present is by using fairly large groupings. In other words, the initial reporting requirements required from commercial bottom-fishing vessels are very simple.

51. A question was also asked as to whether closed areas were beneficial to the fishing industry. This question is very difficult to answer directly, as there are still many unknowns about the advantages of healthy ecosystems. Dr Kenchington reported that there was growing evidence that redfish larvae utilize sea pen fields. She further noted that some of these benthic habitats (sponge grounds, for example) had increased abundance and number of invertebrate species compared with surrounding areas, and that all fish species ate invertebrates as juveniles and that some continued to eat invertebrates as adults, even if they became piscivorous. Therefore, these VME areas may be important for local fish productivity. In addition, VMS information shows that bottom fishing can occur right up to the edge of a closure, indicating that there may be a positive spillover effect from the closure. This in turn requires further investigations to better understand how bottom fishing activities on the edge of closures can affect organisms within the closure itself, for example, by sediment disturbance.

¹³ Northwest Atlantic Fisheries Organization. 2014. *Northwest Atlantic Fisheries Organization: Conservation and Enforcement Measures*, Appendix 1.E. [online]. [Cited 30 September 2014]. <http://archive.nafo.int/open/fc/2014/fcdoc14-01.pdf>

¹⁴ Kenchington, E., Best, M., Cogswell, A., MacIsaac, K., Murillo-Perez, F.J., MacDonald, B., Wareham, V., Fuller, S.D., Jørgensbye, H.I.Ø., Sklyar, V. & Thompson, A.B. 2009. Coral Identification Guide NAFO Area. *Sci. Coun. Studies*, 42: 1–35. doi:10.2960/S.v42.m1 (also available at www.nafo.int/publications/studies/coral-guide.html).

¹⁵ Best, M., Kenchington, E., MacIsaac, K., Wareham, V., Fuller, S.D. & Thompson, A.B. 2010. Sponge Identification Guide NAFO Area. *Sci. Coun. Studies*, 43: 1–50. doi:10.2960/S.v43.m1 (also available at www.nafo.int/publications/studies/sponge-guide.html).

52. The use and sharing of VMS information among regions was also discussed, although with no conclusions being made. It was believed that VMS information was the property of the vessel's flag State, and as such its use and distribution would be controlled by the flag State. The acquisition of VMS information, for example, relating to the occasional Corner Rise alfonsino fishery that uses a deep mid-water trawl that does not normally contact the sea floor, in the WECAFC area would probably need to be discussed with the flag State. Observer reports and logbooks also provide useful information, and the sharing of these is typically easier than developing VMS sharing agreements.





WECAFC MEMBER PRESENTATIONS

Deep-sea fishery in the Colombian Caribbean Sea: management and conservation strategies for an ecosystem approach to fisheries

53. Dr Jorge Paramo's presentation was on "Deep-sea fishery in the Colombian Caribbean Sea: management and conservation strategies for an ecosystem approach to fisheries". He presented the results of exploratory fish surveys and how such fisheries could be managed should commercial interests develop. The aim of this research was to identify the potential of new deep-sea fisheries in the Colombian Caribbean Sea, determining their biomass and spatial distribution in order to advise management and conservation strategies, based on the ecosystem approach to fisheries management. The research investigated possible new fishing areas, exploring the poorly understood deep-sea habitats in the Colombian Caribbean Sea, to determine the potential for a viable deep-sea crustacean fishery. The sampling area extended from the 100 m isobath to a depth of 550 m. In two experimental trawl surveys carried out in November and December 2009, the investigation found high abundances of the giant red shrimp (*Aristaeomorpha foliacea*), the royal red shrimp (*Pleoticus robustus*), the pink speckled deep sea shrimp (*Penaeopsis serrata*) and the deep sea lobster (*Metanephrops binghami*) (Table 2), all of which are important commercially. The highest biomasses of these deep-sea crustacean species were found mainly in the northern zone of the Colombian Caribbean Sea, where the local oceanography is modulated by highly productive seasonal upwelling. The size structure of these deep-sea crustaceans of commercial importance showed that the majority of adult individuals reflect the non-fished populations in the study area. However, further scientific assessment is necessary to determine population life-cycle parameters of these deep-sea crustaceans and associated biodiversity before initiating a new commercial fishery. Therefore, studies of deep-sea biodiversity are necessary in order to understand the degree of stability and vulnerability of deep-sea environments and enable comparison of conditions before and after exploitation of the fishery. This will enable a better understanding of the ecosystem – to advise ecosystem-based conservation and fisheries management strategies. Then, the research work identified deep-sea fish assemblages across a depth range of 200–550 m from the Colombian Caribbean Sea and their implications for an ecosystem approach to fisheries management. A total of 102 species (13 Chondrichthyes and 89 Teleosteans) from 58 families (9 Chondrichthyes and 49 Teleosteans) of deep-sea fish were sampled. The catch composition of deep-sea crustaceans of commercial importance in the Colombian Caribbean Sea showed that crustaceans of commercial importance comprise only 16.6 percent by abundance (individuals per square kilometre) and 13.5 percent by biomass (kilograms per square kilometre). They concluded that the management of the potential new deep-sea crustacean fishery should be based on an ecosystem approach that considers population dynamics and structure, the optimum allocation of catches and effort, protection of nursery and spawning areas, the development of monitoring strategies, and the care of ecosystems. Therefore, commercial exploitation cannot begin until scientific assessment suggests strategies of ecosystem conservation and sustainable use.

Table 2

Taxonomic information on deep-sea crustaceans of commercial importance in the Colombian Caribbean Sea

<p>Class: Malacostraca Order: Decapoda Suborder: Dendrobranchiata Family: Aristeidae Species: <i>Aristaeomorpha foliacea</i> (Risso, 1827) Common name: Giant red shrimp</p>	
<p>Class: Malacostraca Order: Decapoda Suborder: Dendrobranchiata Family: Solenoceridae Species: <i>Pleoticus robustus</i> (Smith, 1885) Common name: Royal red shrimp</p>	
<p>Class: Malacostraca Order: Decapoda Suborder: Dendrobranchiata Family: Penaeidae Species: <i>Penaeopsis serrata</i> (Bate, 1881) Common name: Pink speckled shrimp</p>	 <p>Picture used with permission of Perry and Larsen © 2004 (www.gsmfc.org)</p>
<p>Class: Malacostraca Order: Decapoda Suborder: Pleocyemata Family: Nephropidae Species: <i>Metanephrops binghami</i> (Boone, 1927) Common name: Caribbean lobster</p>	

54. The discussions focused on two aspects of the presentations: (i) why deep-sea fisheries had not really developed within the Caribbean; and (ii) how to manage the fish/crustacean stock and bycatch impacts of a developing deep-sea fishery. Participants generally felt that the first issue was caused by a combination of factors, such as little experience of deep-sea fisheries, a fleet composed of fishing vessels that are not designed to be away from port for longer periods, poorly adapted market infrastructure, and, in general, catch rates that are expected to yield only low economic returns. It was noted that some of the existing shallower snapper, grouper and shrimp fisheries were expanding their range and moving into waters deeper than 200 m, and that this might eventually result in the development of deep-sea fisheries capabilities. The second point is perhaps not one that is preventing new fisheries from occurring, although some States do have strong regulations within their EEZs, but one that would have to be considered if a licence were to be granted for a new fishery. To this end, it was noted that trap fisheries may be a more appropriate starting point than bottom trawl fisheries, as they can operate from smaller vessels, tend to have a lower operational cost, and have fewer bycatch

concerns. Some bottom-set longline fisheries do occur, and these may also offer opportunities for expansion into deeper waters.

Venezuelan deep-sea fisheries

55. Dr José Javier Alió, currently an emeritus researcher and consultant at the Instituto Nacional de Investigaciones Agrícolas and the Instituto Socialista de la Pesca y Acuicultura, Venezuela (Bolivarian Republic of), presented work undertaken by a team of scientists that led to a publication on the current and potential deep sea fishing in jurisdictional waters of Venezuela (Bolivarian Republic of).¹⁶ Deep-sea fishery resources are considered to be those inhabiting the continental shelf and the abyssal realm, below 200 m. Their presence has been recorded in Venezuela (Bolivarian Republic of) from exploratory campaigns, and they have been commercially exploited only in recent years. Between February and November 1988, R/V *Fridtjof Nansen* made four surveys of fishery resources between northern Colombia and Suriname, at depths of 5–900 m. Later, two private companies also undertook deep-sea trawling. They identified 870 species or taxa, of which 409 were found in the depth range 100–900 m. Among the latter, there are at least 36 fish species, 5 lobsters, 5 shrimps and 2 crabs and 2 squids that may have commercial interest owing to their size or quality of meat, in particular: the fish *Epinephelus* spp., *Lutjanus* spp., *Rhomboplites aurorubens*, *Erythrochles monody*, *Merluccius albidus*, *Lophius gastrophysus* and *Zenopsis conchifera*; the lobsters *Acanthocaris caeca*, *Metanephrops binghami*, *Nephropsis rosea*, *N. aculeata* and *N. neglecta*; the shrimps *Aristaeomorpha foliacea*, *Aristeus virilis*, *A. antillensis*, *Plesiopenaeus edwardsianus* and *Benthescymus bartletti*; and the crabs *Chaceon quinquedens* and *C. eldorado*. In recent years, fishers from La Guaira, central coast of Venezuela (Bolivarian Republic of), and Margarita Island, that traditionally target snappers and groupers in the Venezuela-Brazil shelf at depths of 30–150 m, started fishing for these species in the northern sector of the island beyond this depth range and down to 430 m. The fishing methods and gear types used by these fishers were described. Considering the sparse distribution of the deep-sea resources, their slow growth rate and the lack of knowledge about key elements of their biology, the management strategy of their fisheries should involve a very limited and highly controlled exploitation, along with research programmes using observers on board.

56. There was considerable discussion around many aspects of this presentation. First, the work and indeed similar exploratory fishing surveys in other parts of the region (e.g. crustaceans off Colombia, and crabs and shrimp off Bermuda also reported at this workshop) have indicated that there are potential resources in deeper waters, but that the “inshore” fishing vessels and local markets may need to adapt to a new fishery and potentially new products. Export markets for frozen products may need to be explored, if local demand is low, for example, for offshore hake (*Merluccius albidus*). There are also uncertainties on the economic potential of such deep-sea fisheries. The management aspects need to be addressed if the fisheries are to be sustainable, with minimum impact on bycatch species. It was also commented that trawl bans exist in some waters of the Caribbean and that trawls are an expensive method requiring larger vessels. Under such circumstances, trap fisheries for crabs, snappers or groupers, can be a viable alternative.

57. Also discussed were the partnerships that sometimes exist with taxonomists and that this was in fact the first indication that fishers were moving into deeper waters. New species were being caught and identified that do not occur in shallower waters. Such partnerships with taxonomists are considered important and an initial step in the identification of new resources and in the monitoring of bycatch. It was mentioned further that if identification of species is problematic DNA barcoding may

¹⁶ Alió, J.J., Lárez, A. & Trujillo, E. 2009. Especies marinas de profundidad como pesquerías potenciales en el talud continental de Venezuela. *BuenasTareas.com* [online]. [Cited 30 July 2013]. www.buenastareas.com/ensayos/Especies-Marinas-De-Profundidad-Como-Pesquer%C3%ADas/31438333.html

be a useful means of identification. Moreover, the Internet now hosts many user groups formed around species groups, which may respond to identification requests.

58. Also discussed was the potential for FAO to provide a neutral platform to work with Governments and provide a forum whereby managers and scientists can come together to discuss information relating to shared-stock fisheries or to the sharing of information on existing fisheries. It was also felt that the current WECAFC workshop, combined with input from FAO headquarters, supported this and raised the profile of important global issues that need to be understood and acted upon within the region, even if they are not currently seen as a priority.

Mechanisms available for protecting fish and habitat in the waters of the United States of America

59. Dr Robert Brock from the National Oceanic and Atmospheric Administration (NOAA), the United States of America, gave a presentation and highlighted some of the mechanisms available for protecting fish and habitat in the waters of the United States of America. The United States of America possesses the largest EEZ in the world (11 351 000 km²). Although representing only 17 percent of the land area, 53 percent of the population of the United States of America (about 168 million people) live within 80 km of the coast. The ocean provides many economic, recreational and cultural benefits to the nation. The NOAA is the federal agency legally mandated to responsibly manage the living marine resources of the EEZ and the habitats they depend on. There are almost 30 legal authorities and additional guidance that drive the ocean conservation programmes of the United States of America. The Magnuson-Stevens Fishery Conservation and Management Act is the chief legal mechanism for the conservation and management of the nation's fishery resources through the preparation and implementation of fishery management plans. The Sanctuaries Act allows the Secretary of Commerce (the NOAA is in the Department of Commerce) to designate areas of national significance national marine sanctuaries and to protect the natural and cultural resources there within. The Antiquities Act allows the President of the United States of America to sign an executive order to protect the marine environment by designating national monuments without the need for congressional approval. On 25 September 2014, President Obama created the world's largest fully protected marine reserve in the central Pacific Ocean, signing an executive order that expanded the existing Pacific Remote Islands National Marine Monument from almost 225 330 km² to about 1 270 000 km². Essential fish habitat (EFH) includes all types of aquatic habitat – wetlands, coral reefs, seagrasses, rivers – where fish spawn, breed, feed, or grow to maturity. The EFH has been described for about 1 000 managed species to date. Habitat areas of particular concern (HAPC) are considered high-priority areas for conservation, management or research because they are rare, sensitive, stressed by development, or important to ecosystem function. Impacts from certain fishing practices as well as coastal and marine development threaten to alter, damage or destroy these habitats. The HAPCs are designated throughout the United States of America, with particularly large designations (about 325 000 km²) appearing in the Aleutian Archipelago, Bering Sea and Gulf of Alaska. Many of these areas are closed to all mobile fishing gear that contacts the bottom, and they strive to protect the habitats (e.g. corals, sponges, seagrass) that species depend upon. The habitat blueprint provides a forward-looking framework for NOAA to think and act strategically across programmes and with partner organizations to address the growing challenge of coastal and marine habitat loss and degradation. Together, NOAA, the regional fishery management councils and other federal agencies work to minimize threats to the marine environment, and they have several statutory instruments at their disposal to do so.

60. A general discussion followed the presentation. It was noted that the United States of America has similar marine area categories to VMEs, EBSAs, etc., but uses different names, as mentioned above. The setting up and establishment of these areas can follow many different processes. Monitoring their use tends to be by tracking of vessels using VMS and then investigating permissions to see whether their activities are consistent with the area designation and the licences that the vessels operate under. The designated areas within the United States of America can be no-take zones where

there is no removal of organisms by human activities allowed, or they can allow limited harvests under controlled conditions and regulations. The whole system within the United States of America is one of transparency and this leads to a better understanding of the importance of marine areas both as providers of a resource and as areas to be protected for their biodiversity and conservation value.

Summary responses to national questionnaires – deep-sea fisheries

61. A questionnaire on deep-sea fisheries was distributed to members of WECAFC to acquire information on their involvement of deep-sea fisheries both within and outside of their EEZs. More than 40 percent of the members replied, providing details of their past, current and possible future deep-sea fisheries. Many respondents noted that they have little or no deep-sea fisheries in ABNJ, but have similar fisheries within their EEZs. The wide range of replies was encouraging and has started the process of collaboration to develop the chapter on the deep-sea fisheries of the Western Central Atlantic for the updated worldwide review. In addition to the above, the information contained within the questionnaire can be used to support the marine resource and fishery factsheets in FIRMS and provide a knowledge base for the WECAFC Working Group on the Management of Deep-sea Fisheries.

62. The replies to the circulated questionnaires included information on large pelagic fisheries as well as information from within and outside of EEZs. It was difficult to identify which components related to deep-sea fisheries using bottom-contact gear at depths of 200 m and greater. Therefore, it was decided to circulate a simplified questionnaire to the workshop participants and discuss these in smaller groups. The questionnaire asked participants to:

- list the deep-sea bottom fisheries below 200 m within the EEZ and in the WECAFC ABNJ area;
- indicate the use of the catch from the deep-sea fisheries listed above;
- identify sources of information relevant to deep-sea fisheries in the WECAFC area.

63. The replies increased the information available to the meeting and further contacts were provided to gain additional information after the close of the meeting. Replies were received from Antigua and Barbuda, Bahamas, Barbados, Belize, Colombia, the Dominican Republic, Grenada, Guyana, Nicaragua, Panama, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Bermuda, and the United States of America. None of these countries reported having deep-sea fisheries in the WECAFC ABNJ area, although Belize does have some distant deep-sea fisheries in other regions. Japan, replying to the circulated questionnaire and not present at the meeting, noted that it did have any fisheries within the WECAFC area. Within EEZs, Barbados reported the occasional use of traps to catch silk snapper (*Lutjanus vivanus*) and vermilion snapper (*Rhomboplites aurorubens*), and handlines to catch queen snapper (*Etelis oculans*) below 200 m, but noted that the maximum depth of these fisheries was normally about 100 m. Colombia reported the existence of deepwater crustaceans down to 550 m, but that there were no commercial deep-sea fisheries. The Dominican Republic reported the occasional use of bottom set longlines for snapper below 200 m, and Nicaragua reported using traps below 200 m for snappers and groupers. Suriname reported a bottom trawl fishery for big sea shrimps down to 380 m. Bermuda reported an experimental trap fishery for crabs at 800 m depth in 2013. Venezuela (Bolivarian Republic of) has no commercial deep-sea fisheries within its EEZ, although surveys have indicated that crustacean, snappers and groupers may be present in commercial quantities.

64. FAO keeps global fisheries catch statistics that can be extracted through the FAO FishStatJ software. The catches are assigned to FAO major statistical areas, and are not divided into EEZ and ABNJ, or by depth or fishing gear. Therefore, it was difficult to interpret the information extracted for the purposes of this report. A search for alfonsino and orange roughy, two typical deep-water species,

in the Western Central Atlantic returned catches of alfonsino of 278 tonnes (1995) and 15 tonnes (1996) by the Russian Federation and 7 tonnes (1996) by Iceland. The location of these catches within Area 31 is unknown. No orange roughy catches were reported.

65. The Dominican Republic, Bermuda and Barbados, all reported that their occasional catches in deep-sea fisheries were sold fresh to the local market, whereas Suriname and Nicaragua also exported some of their deep-sea fisheries products.

66. The simplified questionnaires also asked for sources of information from participants that may be useful when accessing deep-sea fisheries and VMEs in the WECAFC area. In general, there is a paucity of published information on the deep-sea benthos of this area. This is mainly due to the apparent lack of demersal fisheries. The information within the EEZ of the United States of America is likely to be more extensive. The sources in Table 3 may provide initial direction, and these need to be combined with references contained within this report and in the recent “Report of the Wider Caribbean and Western Mid-Atlantic Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas” published by the Convention on Biological Diversity (see web link in Table 3).

Table 3

Information sources

Source	Subject	Web link
Caribbean Large Marine Ecosystem Project (CLME)	Regional project. Ecosystem approach to fisheries (EAF) with emphasis on reef fisheries, flying squid and large pelagic species.	http://clmeproject.org/
Caribbean Marine Atlas	Online database that includes bathymetry	http://www.caribbeanmarineatlas.net/
CBD	Ecological or biological significant area (EBSA) report on Caribbean region (and see references therein)	http://www.cbd.int/doc/meetings/mar/rwebsa-wcar-01/official/rwebsa-wcar-01-sbstta-16-inf-07-en.pdf
Census of Marine Life (CoML)	Results from the first census, CoML 2000–2010	http://www.coml.org/
Central America and Fisheries and Aquaculture Organization (OSPESCA)	A deep-sea survey in 2011 (Belize to Panama) – Report and database	http://www.sica.int/ospesca/
E/V <i>Nautilus</i> , United States of America	Various cruises to the Caribbean	e.g. http://www.nautiluslive.org/mission/2013
EBSA repository	Wider Caribbean and western mid-Atlantic region included	http://www.cbd.int/ebsa/
FAO FishStatJ	Global fish catches, including Area 31 (not subdivided)	http://www.fao.org/fishery/statistics/software/fishstatj/en
Geological surveys	Oil and gas industry	Sources unknown
IFREMER	Possible survey in Caribbean finding six gill shark and using deep-water traps	Source unknown
MPA Global database	Part of the Pew-funded Seas Around Us project	http://www.mpaglobal.org

NOAA Fisheries Service Office of Habitat Conservation	NOAA National Database of Deep-sea Corals and Sponges	http://www.habitat.noaa.gov/
NOAA Office of Ocean Exploration	Research on deep-sea habitats in the Atlantic	
Ocean Biographic Information System	Database including CoML	http://www.iobis.org/
Publication	Lutz & Ginsburg. 2007. <i>State of Deep Coral Ecosystems in the Caribbean Region: Puerto Rico and the U.S. Virgin Islands</i> . The State of Deep Coral Ecosystems of the United States. NOA Technical Memorandum CRCP-3. Silver Spring MD. pp. 307–363	http://www.readbag.com/coris-noaa-activities-deeppcoral-rpt-chapter8-caribbean
Publication	<i>Deep seas fishery in the Columbian Caribbean Sea: Management and Conservation strategies for an ecosystem approach to Fisheries</i>	Paramo, Jorge , CITEPT
Publication	<i>Informe de Resultados de la Campana de Investigacion Pesquera Centroamerica Caribe 2011</i>	B/O Miguel Oliver, Spain
Publication	Cervigón, F. 1991-2011. <i>Los Peces Marinos de Venezuela</i> . Vol. I-VI.	Fundación Científica Los Roques, Cromotip, and ExLibris, Caracas, Venezuela (Bolivarian Republic of).
R/V Dr. Fridtjof Nansen surveys	Surveys in the Caribbean Sea off Northern South America in Feb-Dec 1988. Mainly within EEZs for pelagic and demersal species. Some deeper tows, e.g. in Colombia and Venezuela (Bolivarian Republic of) between 200 and 800 m.	http://www.fao.org/docrep/004/X3950E/x3950e13.htm#ch9
Russian surveys	Reported to occur in Grenada in early 1980s.	Source unknown
Scripps Institute of Oceanography, United States of America	Global Gravity Map (released soon after meeting)	http://topex.ucsd.edu/grav Outreach/
UN World Ocean Assessment	Chapters currently in draft	http://www.worldoceanassessment.org/
Wood's Hole Oceanographic Institute	Research on deep-sea habitats in the Atlantic, including seamounts within Bermudan waters	

VMES IN THE WECAFC AREA

Identifying VMEs in the WECAFC area

67. Dr Ellen Kenchington provided the workshop with an overview of “Identifying VMEs in the WECAFC area” drawing on the experiences and practices of RFMO/As. This began with a review of the FAO Deep-sea Fisheries Guidelines focusing on the criteria used for identification of VMEs and the concept of SAIs. She then reviewed the concept of working under the precautionary approach,

both for identification of VMEs using topographical features and for assuming the degree of SAIs. She discussed the concept of VME indicator species and species groups (taxa) and noted that the groups identified in NAFO to the north of WECAFC could probably be used in the WECAFC area. Specifically, these were: large gorgonian corals, small gorgonian corals, sea pens, stony corals, black corals, sponge grounds, tube dwelling anemones, bryozoans, stalked tunicates and crinoids. Many of the species within these groupings are probably the same, but others could be added given the experience of WECAFC members. A VME indicator list is the first step in developing encounter protocols. Potential VME areas in the WECAFC ABNJ were presented to the meeting for discussion. These drew on published literature, including a review of CBD EBSAs that used its vulnerability criterion, which has similarities with the VME criteria.

68. This presentation yielded specific discussions relating to the application of the VME criteria in the FAO Deep-sea fisheries Guidelines to the areas proposed as being candidate VMEs in the WECAFC area. A summary of the discussions is that the VME criteria should be set within a framework of deep-sea fisheries using bottom-contact fishing gear and SAIs, although the impacts should include potential impacts from expanding fisheries, which in the current context usually means fisheries expanding into deeper waters. This is consistent with some of the closures made by NAFO, North East Atlantic Fisheries Commission (NEAFC) and South East Atlantic Fisheries Organisation (SEAFO) that are beyond current fishing depths but there to provide protection against uncontrolled future expansion. The typical lower limits to commercial fisheries are about 1 500–2 000 m, although in most cases the depth fished is within the 300–1 000 m depth range.

69. It was mentioned that deep-sea fisheries in ABNJ are documented to occur on the Corner Seamounts and probably represent the area where deep-sea fisheries for alfonsino occur within both Area 21 (Northwest Atlantic) and Area 31 (Western Central Atlantic).¹⁷ However, this fishery can be conducted by both bottom trawls and deepwater mid-water trawls, and so it is not necessarily confined to a fishery using bottom-contact gear, although alfonsino is regarded as a deep-water fish species. Hence, impacts have probably occurred and are likely to continue to occur.

70. Participants were supportive of the proposed areas for the candidate VMEs, but felt that the Atlantic Equatorial Fracture Zone in Area 41 required further research and justification than was currently available. Moreover, the fact that this area borders directly the EEZ of Brazil and no Brazilian expert was at the workshop made the participants decide to include this area in the report but not to recommend it as a candidate VME. It was noted that this and other areas within the WECAFC Area could contain VMEs and that these would be further discussed in future meetings should more information become available.

71. It was decided that the workshop should focus on potential VMEs within the WECAFC ABNJ, and that member States could if they wished apply a similar process within their national jurisdiction (FAO Deep-sea Fisheries Guidelines, paragraph 10).

FAO PROJECTS OF INTEREST TO THE WORKSHOP

Introduction to the Worldwide Review of Bottom Fisheries

72. Jessica Sanders presented an “Introduction to the Worldwide Review of Bottom Fisheries” and the future plans for FAO to update the *Worldwide Review of Bottom Fisheries in the High Seas* that was published in 2009 based on information collected in 2003–06. This was the first publication to document the major global ABNJ deep-sea fisheries using bottom-contact fishing gear at depths of

¹⁷ Thompson, A.B. & Campanis, G.M. 2007. *NAFO SCR 07/06* [online]. [Cited 30 September 2014]. <http://archive.nafo.int/open/sc/2007/scr07-006.pdf>; and *Worldwide review of bottom fisheries in the high seas, 2009*, p. 39.

200 m and below. The main chapters were organized by region and described the geography and bathymetry, management regimes, major deep-sea fisheries, stock status, impacts on VMEs, IUU fishing, measures and reporting gaps. A similar format will be used to update this review based on information provided for 2007–2013. The first edition covered 9 regions, and this will be extended to 11 regions in the updated edition, including the Western Central Atlantic, which was relevant to this workshop but not included in the first edition. This review is expected to detail the wider initiatives to reduce bycatch, leaving the more specific VME-related issues that were in the first review to a new “sister” publication on VME processes and practices (described below). The hope was expressed that a mechanism could be developed with participants at the workshop to allow for the drafting of the chapter on the Western Central Atlantic.

VME current processes and practices report

73. Dr Tony Thompson presented an overview of a new synthesis of VME information that FAO plans to develop as a follow on from the 2010 meeting “FAO Workshop on the Implementation of the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas – Challenges and Ways Forward”. It is also expected that the publication will be useful to States during their preparation for the next UN Review on deep-sea fisheries. It is expected that this publication will provide a useful overview to policy-makers, managers and scientists.

74. Participants noted the importance of such a publication, especially when combined with the update of the *Worldwide Review of Bottom Fisheries in the High Seas*. Participants agreed that it would be helpful for FAO to provide an initial draft of the chapter for the WECAFC area, but noted that the draft should be completed by experts within the WECAFC community to provide the details. It is appreciated that there is little information within the WECAFC region and that any expansion from the deep-sea fisheries in the North Atlantic could result in the development of an unknown and uncontrolled fishery in the Western Central Atlantic. It was therefore seen as important to investigate further what has happened and may happen in the WECAFC ABNJ. The group felt that “ownership” of the WECAFC ABNJ by member States was important and that the UN Part VII Assistance Fund¹⁸ could be used to support this.

FAO Global VME DataBase

75. Dr Tony Thompson briefly presented information on the VME DataBase, its structure, content and functionality. The information on VMEs will be disseminated through the VME DataBase website comprising web pages, images, video, documents, etc., and VME records that can be viewed in map and factsheet format. The creation of the VME DataBase followed an invitation from the UNGA to FAO in 2006 to provide “a global database of information on vulnerable marine ecosystems in areas beyond national jurisdiction to assist States in assessing any impacts of bottom fisheries on vulnerable marine ecosystems” UNGA 61/105, paragraph 89). The VME DataBase is a global inventory of fisheries measures adopted in ABNJ to prevent SAIs of bottom fisheries on VMEs and associated information. Information is provided on the oceanic regions and the management authorities dealing with fisheries, and on the closed areas that satisfy the criteria for VMEs given in the FAO Deep-sea Fisheries Guidelines. The DataBase only includes areas associated with VMEs that have been identified by the competent authority managing fisheries in the region. It includes information in areas where there is no functioning RFMO/A, providing that flag States have identified

¹⁸ Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations. 2011. Assistance Fund under Part VII of the 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. In: *Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations* [online]. [Cited 30 September 2014]. www.un.org/depts/los/convention_agreements/fishstocktrustfund/fishstocktrustfund.htm

the areas as VMEs and set measures for their flagged vessels. The VME DataBase was demonstrated live using the web link. Its launch is scheduled for the near future, and RFMO/As have entered and verified much of the information it holds.

76. There was a general comment from the group, following the live demonstration of this pre-release version, that some of the language in the text could be more informative. For example, there was confusion over the term “closed area”, and it was not clear whether the use of certain fishing gear types is restricted. It was explained that this was a database that was developed upon specific requests to assist States in their deliberations on VMEs. It is noted that there are other databases that cover other spatial management measures in marine areas, and these are included in the table on sources of information provided in this report. The content of the VME DataBase is primarily derived from RFMO/As that have adopted measures to delineate areas where VMEs occur and to apply restrictions as to the use of bottom-contact fishing gear within these areas. The VME DataBase also includes supporting State measures where these apply to areas in ABNJ that have the characteristics of VME areas, and these are made usually when there is no RFMO/A within a region.

Deep-sea fisheries project information session

77. Jessica Sanders informed participants about the upcoming “Sustainable fisheries management and biodiversity conservation of deep-sea living marine resources and ecosystems in the Areas Beyond National Jurisdiction” (ABNJ Deep-seas) project (funded by the Global Environment Facility [GEF]). The project was approved on 7 June 2014, and the project document can be found on the web.¹⁹ The project is one of four projects within the “Global Sustainable Fisheries Management and Biodiversity Conservation in the Areas Beyond National Jurisdiction (ABNJ)” Programme, which promotes efficient and sustainable management of fisheries resources and biodiversity conservation in the ABNJ. The ABNJ deep-seas project has four main components: policy and legal frameworks; VMEs and EBSAs; deep-sea fisheries management; and area-based planning. Under legal and policy frameworks, there is the development of a guide to implementing existing fisheries frameworks, and activities relating to networking and the sharing of global practices. Under VMEs and EBSAs, there is the compilation and analysis of existing information, the worldwide review of deep-sea fisheries, the VME processes and practices review, and the development of data collection and training manuals. There are also capacity-building activities for VMEs and EBSAs that may be applicable in the Western Central Atlantic and in which WECAFC members could participate. The presentation concluded with a brief introduction to the “Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction”,²⁰ where ongoing discussions are in progress at the UNGA. In addition, the draft Sustainable Development Goals were presented, including one for oceans (Goal 14), which will be adopted and released in 2015²¹ and build upon the current Millennium Development Goals.

¹⁹ Available at: [www.thegef.org/gef/sites/thegef.org/files/gef_prj_docs/GEFProjectDocuments/Multi%20Focal%20Area/Global%20-%20\(4660\)%20-%20ABNJ-%20Sustainable%20Fisheries%20Management%20and%20Biodive/06-02-14_Project_Document_PAD_Final.pdf](http://www.thegef.org/gef/sites/thegef.org/files/gef_prj_docs/GEFProjectDocuments/Multi%20Focal%20Area/Global%20-%20(4660)%20-%20ABNJ-%20Sustainable%20Fisheries%20Management%20and%20Biodive/06-02-14_Project_Document_PAD_Final.pdf)

²⁰ Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations. 2014. Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction. In: *Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations* [online]. [Cited 30 September 2014]. www.un.org/depts/los/biodiversityworkinggroup/biodiversityworkinggroup.htm

²¹ United Nations Department of Economic and Social Affairs, Division for Sustainable Development. 2014. Open Working Group proposal for Sustainable Development Goals. In: United Nations Department of Economic and Social Affairs, Division for Sustainable Development [online]. [Cited 30 September 2014]. <http://sustainabledevelopment.un.org/focussdgs.html>

WORKSHOP OUTPUT

Reporting on potential VMEs in the WECAFC area

78. Dr Raymon van Anrooy presented the draft document on potential VME areas within the WECAFC area that was developed based on available bathymetric information and supported by surveys and studies when available. These areas are supported by the criteria given in the FAO Deep-sea Fisheries Guidelines for VMEs known or likely to occur.

79. There was also discussion on the overall mandate on proposing VME areas, and the opinion of the workshop was that it could identify areas that satisfy the criteria in the FAO Deep-sea Fisheries Guidelines for potential VMEs, describe the scientific process used for this, and make recommendations on these delineated areas to the WECAFC Commission for review and adoption. However, while management recommendations can be provided by WECAFC, these recommendations are non-binding. This means that the implementation of management recommendations is outside of the remit of WECAFC and remains within the domain of member States and flag States fishing in the WECAFC ABNJ.

80. Following the discussions and amendments to the presented draft document, the areas described as potential VMEs, and the justifications as to why they fit the criteria, are provided in Appendix 4.

Drafting recommendations for WECAFC

81. Draft recommendations, based on discussions held during this workshop, were prepared by the WECAFC Secretariat and presented to the participants for discussion by Dr Raymon van Anrooy. The participants then discussed these recommendations, and the necessary revisions were made. The Working Group endorsed recommendations to the sixteenth session of WECAFC, which will be reviewed by the WECAFC Scientific Advisory Group (SAG). These are given in Appendix 5.

Update of the terms of reference of the Working Group

82. Dr Raymon van Anrooy presented the terms of reference of the Working Group on the Management of Deep Sea Fisheries to the participants for discussion. The updated terms of reference that will be submitted to the sixteenth session of WECAFC are given in Appendix 6. The Working Group welcomed with appreciation the offer by Dr Jorge Paramo (Colombia) to act as convener for the work of the Working Group for the period 2014–17.

OTHER BUSINESS

Suggestions for regional and national actions

83. Many ideas were developed throughout the course of the three-day workshop. These were discussed by participants and an agreed list of suggested actions at the regional and national level was developed:

Suggestions for actions by countries at national level

Short and medium-term (2–5 years):

- Generate awareness among the relevant government agencies and fishers about the Deep-Sea Fisheries Guidelines and the outcomes of this Working Group meeting.
- Survey of who is involved in deep-sea fisheries, where, and whether fishing is done only in the EEZ or also ABNJ, and what species are caught.

- Compile information and, where not available, request information on foreign and national vessels fishing in their EEZs to report on deep sea catches – to increase data and information availability (this may require additional regulations under the fisheries acts).
- Investigate the national obligations under existing international and regional fisheries instruments (e.g. CCCFP,²² OSPESCA-CRFM Memorandum of Understanding) and other instruments (CBD,²³ Cartagena Convention²⁴) and try to implement these.

Longer-term (5–10 years):

- Support exploratory fishing by fishers (and researchers) to investigate viability of deep-sea fisheries.
- Develop policies and legislation to facilitate and regulate national fishers to participate in deep-sea fisheries in respective EEZs (as required) and ABNJ areas.
- Identify VMEs in their EEZs and prepare the justification and impact information for the next Working Group meeting.
- Where deep-sea fisheries are taking place in EEZs, pursue the development of collaboration/projects/requests together with other countries for research, surveys or projects to improve information and management.

Suggestions at regional level for the Working Group

- Development of a research proposal for deep-sea fisheries and seek support from the Nansen programme.
- Develop a regional capacity-building programme on deep-sea fisheries research, data analysis, etc.
- Prepare, translate and disseminate deep-sea fisheries species identification guides.
- Carry out a desk study (mining of available data and information) on fisheries or other sectoral research activities and commercial fisheries in the deep seas of the ABNJ in the WECAFC area.
- The WECAFC Secretariat is to make official requests to potential distant-water fishing nations thought to be fishing in the WECAFC, to request VMS data and analyse these data to report to the membership.
- Request foreign fishing fleets operating in the area to report on deep-sea catches – to increase data and information availability (this may require additional regulations under fisheries acts).

²² Caribbean Community Common Fisheries Policy.

²³ Convention on Biological Diversity. 1992. Text of the CBD. In: *CBD* [online]. [Cited 30 September 2014]. www.cbd.int/convention/text/

²⁴ United Nations Environment Programme, Caribbean Environment Programme, Regional Co-ordinating Unit. 2000. *Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region* [online]. [Cited 30 September 2014]. www.cep.unep.org/pubs/legislation/cartxt.html

- Collaborate with RFBs in neighbouring regions (NAFO, NEAFC and SEAFO; Fishery Committee for the Eastern Central Atlantic [CECAF]) for improved information and processes on deep-sea fisheries, IUU issues and others.

Next meeting

84. An offer was made, subject to approval, by Dr Jorge Paramo to host the next meeting of the “Working Group on the Management of Deep-sea Fisheries” in Colombia, with a tentative date set for late 2016 or early 2017 following the sixteenth meeting of the Commission in 2016.

Press release

85. A press release was drafted by the WECAFC Secretariat soon after the meeting to publicize the conclusions of the workshop. The release is included in this report for the sake of completeness, but it should not be regarded as text agreed by the participants (Appendix 7).

Adoption of recommendations, terms of reference and report

86. The meeting secretariat presented the Working Group with the final agreed versions of the draft recommendations (Appendix 5) and draft terms of reference (Appendix 6). These were adopted by the members present at the meeting and will be forwarded to the sixth meeting of the SAG in 2015 and the sixteenth meeting of the Commission in 2016.

CLOSURE OF THE MEETING

87. Mr Stephen Willoughby, the Chairperson of the Workshop, thanked the members and observers for a fruitful, productive and successful meeting. He also expressed appreciation for the work of FAO. The meeting was declared closed by Mr Willoughby on Thursday, 2 October 2014, at 16:00 hours.

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APPENDIX 2**Agenda**

WESTERN CENTRAL ATLANTIC FISHERY COMMISSION (WECAFC)
Working Group on the Management of Deep Sea Fisheries
FAO/WECAFC Technical Workshop on Bottom Fisheries in the High Seas Areas of the Western Central Atlantic
Christ Church, Barbados, 30 September - 2 October 2014
Agenda

Tuesday 30 September 2014*Morning session*

09:00 Registration of participants

09:15 Opening of the session

- Welcome words by the FAO Subregional Coordinator for the Caribbean

- Opening address by the Ministry of Agriculture, Food, Fisheries and Water Resource Management of Barbados

09:30 Introduction of delegates and participants

09:45 Introduction of the Working Group

10:00 Election of the Chairpersons and rapporteurs

10:10 Adoption of the agenda and arrangements for the Working Group

10:20 Workshop objectives and expected outputs

10:30 Coffee Break

11:00 International fisheries instruments of importance to high seas fisheries in the WECAFC region

11:30 FAO Deep-sea Fisheries Guidelines and data requirements

12:00 Lunch Break*Afternoon session**Deep sea bottom fisheries (DSF) in the WECAFC area*

13:30 Vulnerable Marine Ecosystems in the high seas of the Atlantic since the adoption of the FAO deep sea Guidelines

14:10 Deep sea fishery in the Colombian Caribbean Sea: management and conservation strategies for an ecosystem approach to fisheries

14:50 Introduction to the Worldwide Review of Bottom Fisheries

15:30 Coffee Break

16:00 Summary responses to National questionnaires – deep-sea fisheries

16:10 Introduction to break-out sessions

16:20 break-out sessions

17:00 End of the first day of the session

17:15 Cocktail Reception hosted by the Ministry of Agriculture, Food, Fisheries and Water Resource Management of Barbados

Wednesday 1 October 2014

Morning session

09:00 Deep Sea Fisheries in the high seas of the Atlantic, since the adoption of the FAO Deep Sea Guidelines

09:45 Venezuelan Deep Sea fisheries

10:30 Coffee Break

11:00 Sharing of experiences from the North West Atlantic (NAFO)

12:00 Lunch Break

Afternoon session

13:30 Introduction to VMEs

13:50 Mechanisms Available for Protecting Fish and Habitat in the Waters of the United States

14:20 Identifying VMEs in the WECAFC area

15:30 Coffee Break

16:00 Reporting on potential VMEs in the WECAFC area

16:30 FAO Global VME database

17:00 End of the second day of the session

18:30 Visit to Oistins Fish Fry

Thursday 2 October 2014*Morning session*

09:00 VME Current Processes and Practices Report

09:20 Data Requirements for DSF management

09:40 Recommendations regarding data and DSF

10:30 Coffee Break

11:00 Group discussions on minimum reporting requirements for DSF in the ABNJ

11:30 DSF project information session

12:00 Lunch Break*Afternoon session*

14:00 Drafting recommendations for WECAFC

15:00 Update of the Working Group Terms of Reference

15:30 Coffee Break

16:00 Other business

16:30 Adoption of recommendations/report

17:00 **Closing Ceremony of the Workshop**

APPENDIX 4

Preliminary identification of vulnerable marine ecosystems (VMEs) within the high seas of the WECAFC Area: seamounts, hydrothermal vents and trenches/ridges

The Workshop considered potential vulnerable marine ecosystems (VMEs) in the WECAFC high seas areas through application of the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas (FAO, 2009) and through consideration of available evidence, including ecologically or biologically significant areas (EBSAs) for the Wider Caribbean and Western Mid-Atlantic region (CBD, 2012; <http://www.cbd.int/ebsa/#!/ebsas>) and those proposed for the Northwest Atlantic (CBD, 2014), which were defined using the Convention on Biological Diversity (CBD) “vulnerability, fragility, sensitivity, or slow recovery” criterion (CBD Secretariat, 2009). This preliminary review identified 4 seamount areas and 1 hydrothermal vent area as VMEs. There was insufficient time to evaluate the Atlantic Equatorial Fracture Zone as a VME area, in particular owing to the absence of Brazilian scientists at the meeting. Concerns over this area were expressed owing to the potential for bottom fishing to cause significant adverse impacts (SAIs) given that the area is within fishable depths. Those VME areas are indicated in Figure A4.1. It was also suggested that the Mid-Atlantic Ridge could qualify as a VME area, following the practices of the North East Atlantic Fisheries Commission (NEAFC) and the South East Atlantic Fisheries Organisation (SEAFO). The potential for seamounts off the Brazilian EEZ as VME sites were also noted. These and other areas will be further explored during the next meeting of the Deep-sea Fisheries Working Group.

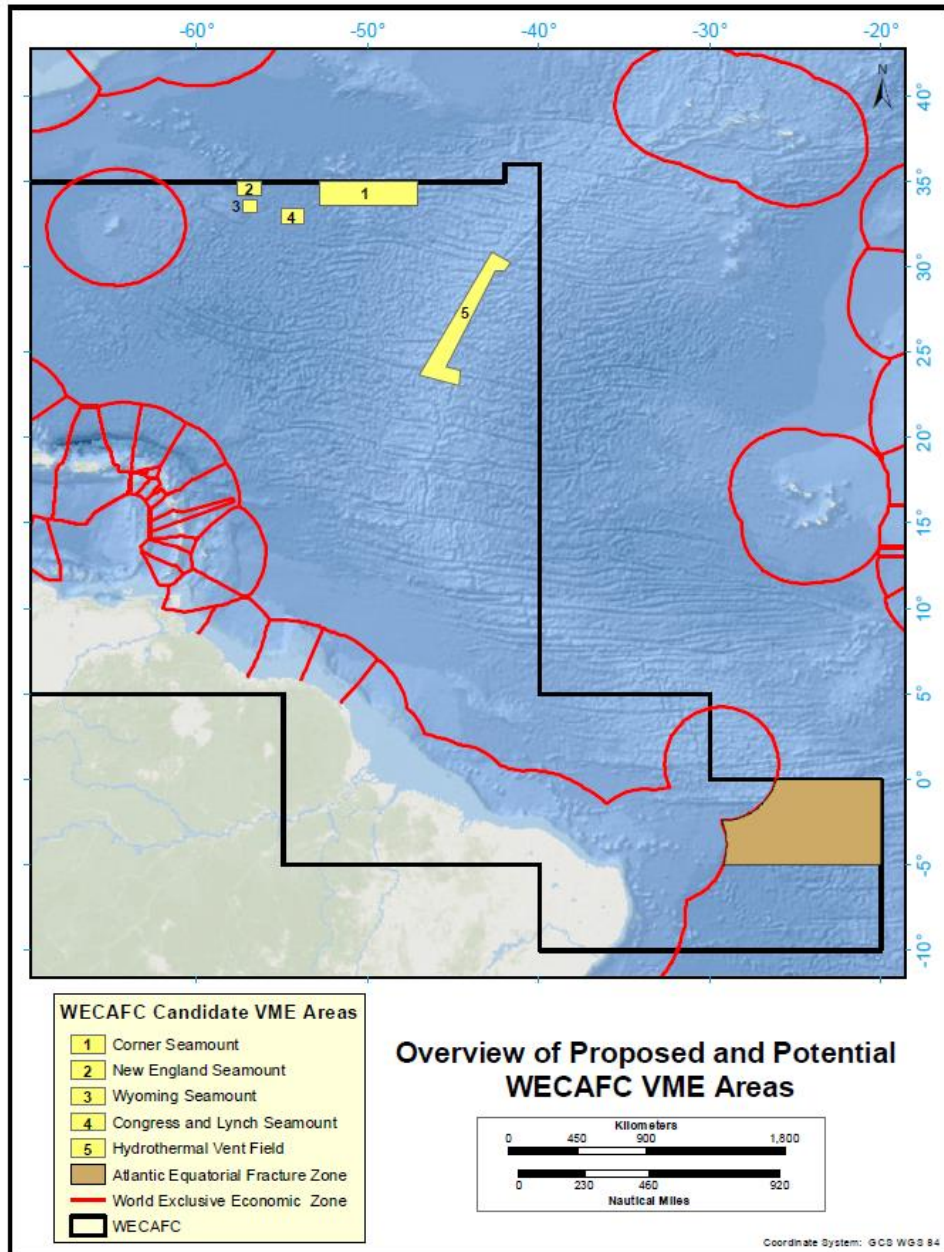
A summary of the evidence for each of the proposed candidate VME areas is listed below:

FAO Criteria (para. 42)	Corner Seamounts	New England Seamounts	Wyoming Seamount	Lynch and Congress Seamounts	MAR Hydrothermal Vents	Atlantic Equatorial Fracture Zone
Uniqueness or rarity	x	x	X	x	X	?
Functional significance of the habitat	x	x	X	x	X	X
Fragility	X	X	X	x	X	x
Life-history traits	x	x	X	x	x	x
Structural complexity	?	?	?	?	?	?
Comment	VME	VME	VME	VME	VME	Needs further evaluation
Area (km²)	82 334	11 896	5 990	12 317	96 856	500 716

Notes: X = strong evidence; x = some evidence based on limited observations; ? = uncertain but likely.

Figure A4.1

Proposed candidate (shown in yellow) and potential (shown in brown) VME areas considered in this report



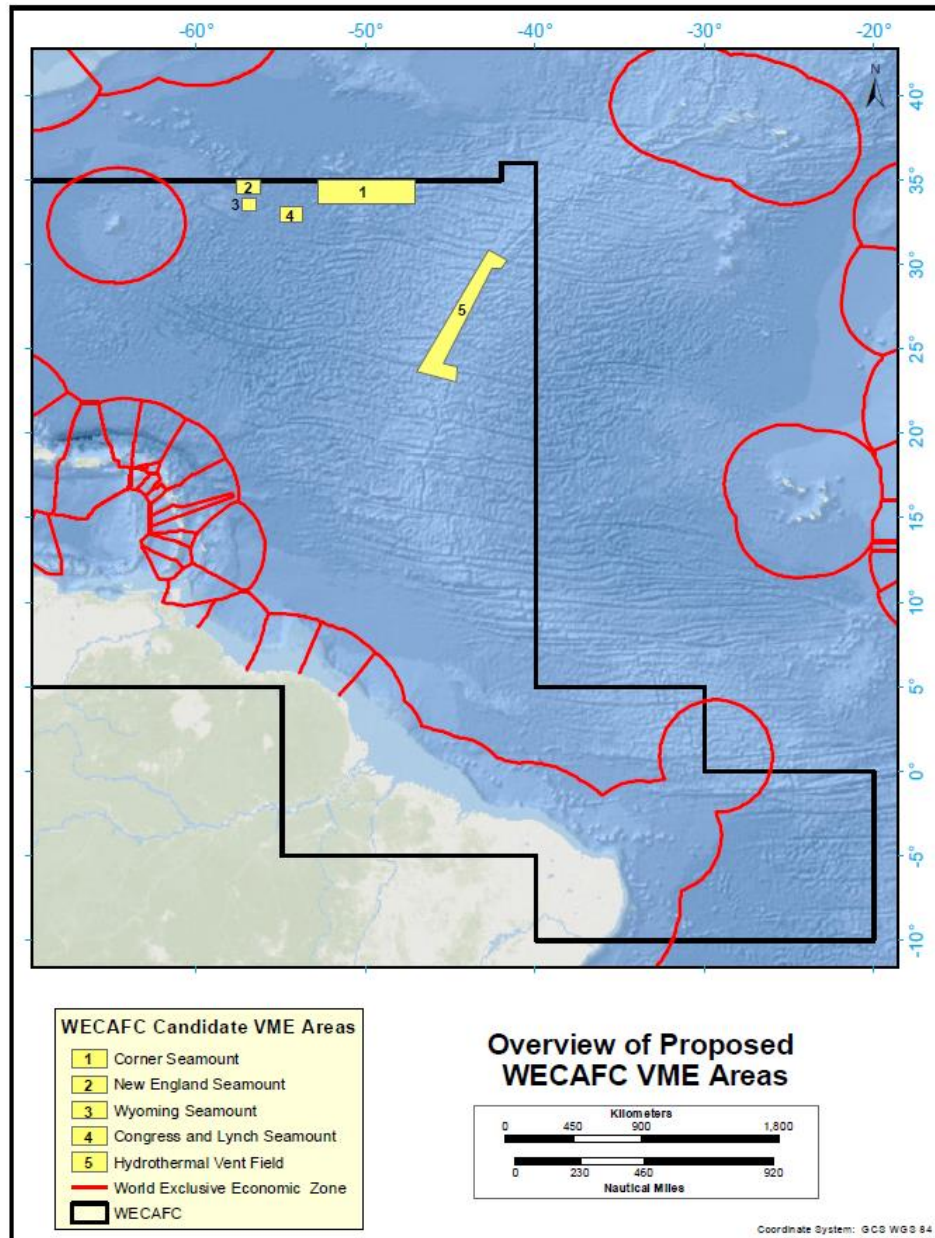
VMEs in the WECAFC high seas area

The FAO/WECAFC Technical Workshop on Bottom Fisheries in the High Seas Areas of the Western Central Atlantic identified five areas that met the VME criteria as detailed in the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas (FAO, 2009).

For each of these areas (Figure A4.2), a justification, physical location, general biology and summary of known impacts are provided, with associated literature references. This information can be used to populate the associated fact sheets in the FAO VME Database if the proposal is endorsed by WECAFC.

Figure A4.2

Proposed candidate VME areas recommended to the WECAFC Scientific Advisory Group (SAG) by the FAO/WECAFC Technical Workshop on Bottom Fisheries in the High Seas Areas of the Western Central Atlantic

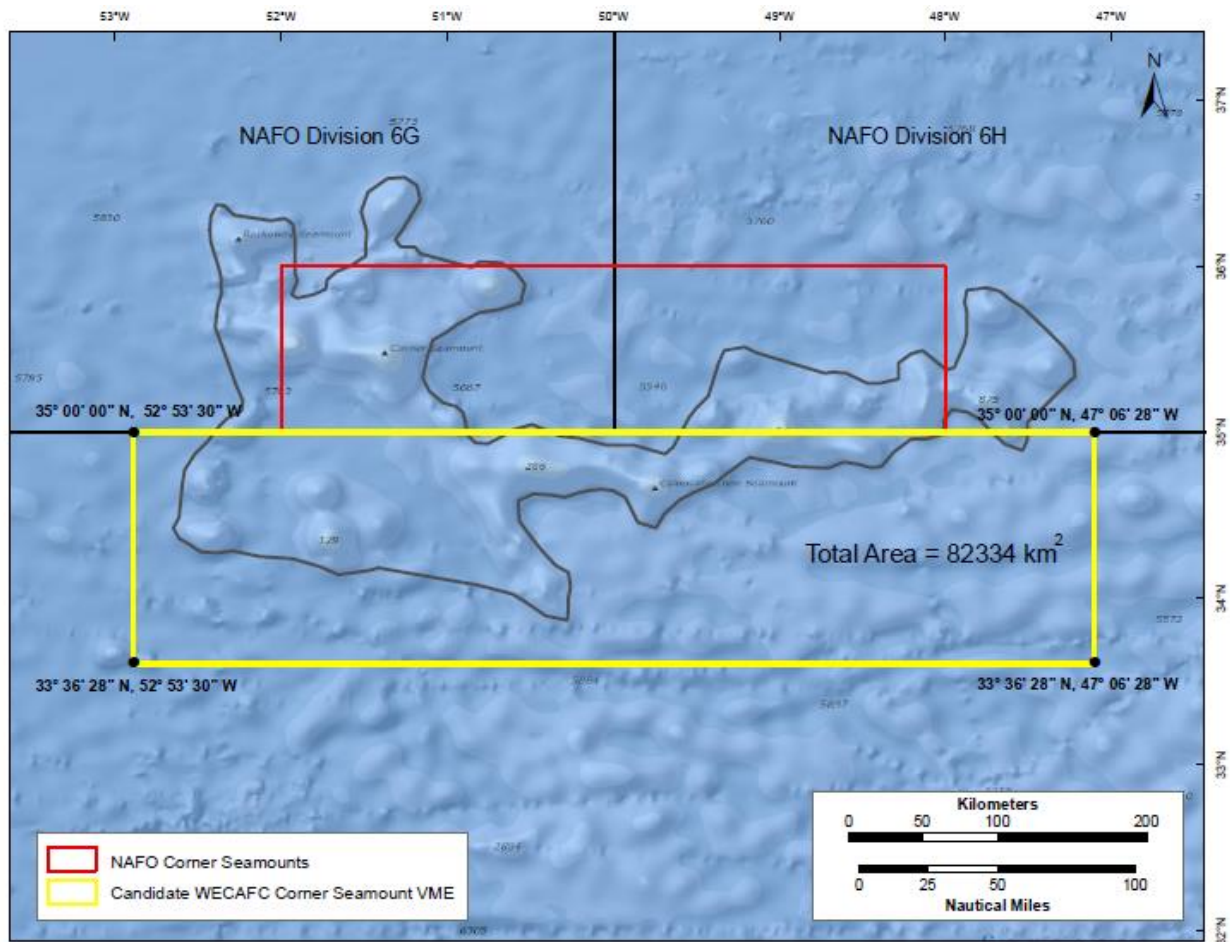


Corner Seamounts (Caloosahatchee Seamount with Milne-Edwards Peak, Verrill Peak, Justus Seamount)

The proposed candidate Corner Seamount VME area in the WECAFC area is delineated in yellow (Figure A4.3). The Northwest Atlantic Fisheries Organization (NAFO) Corner Seamounts Closure (as per Article 16 of the 2014 NAFO Conservation and Enforcement Measures) is indicated in red, and the proposed CBD EBSA area (CBD, 2014) is indicated in grey. The NAFO/WECAFC boundary is indicated along the 35° latitude parallel, with the NAFO Statistical Divisions 6G and 6H to the north.

Figure A4.3

Proposed candidate Corner Seamount VME area



Coordinates:

Latitude (DMS)	Longitude (DMS)
33° 36' 28" N	52° 53' 30" W
35° 0' 00" N	52° 53' 30" W
35° 0' 00" N	47° 6' 28" W
33° 36' 28" N	47° 6' 28" W

Justification:

Seamounts are rare islands of hard substratum and uniquely complex habitats that rise into bathyal and epipelagic depths. They tend to support endemic populations and unique faunal assemblages. Seamounts host complex coral and sponge communities comprised of species vulnerable to bottom-contact fishing gear including trawls, gillnets, traps, benthopelagic trawls, etc. (Morato, William and Pitcher, 2004; Stocks, 2004). Consequently, they are considered to be areas where VMEs are likely to occur. Seamounts are listed as areas with potential VMEs in both UN General Assembly Resolutions (e.g. UNGA, 2006) and the FAO International Guidelines for the Management of Deep-sea Fisheries

in the High Seas (FAO, 2009). A portion of the Corner Seamounts north of the WECAFC area is closed to bottom fishing by NAFO, although exploratory fishing is permitted there (NAFO, 2014). The area was identified as an EBSA by the North-west Atlantic Regional Workshop of the CBD (CBD, 2014), and the CBD Sargasso Sea Summary Report (CBD, 2012) considered by the eleventh meeting of the Conference of the Parties (COP 11) of the CBD also highlighted the high vulnerability of the Corner Rise Seamounts.

Physical description:

The Corner Seamounts are the shallowest seamounts in the New England – Corner Rise Seamount system, rising from the sea floor to about 1 000 m depth or higher and cover about 1 270 km² in area from peaks above 2 000 m depth. This area, referred to as the “New England hotspot”, is more than 3 000 km long. The spatial gap of about 300 km between the New England and Corner Rise Seamount chains arose through a pause in volcanic activity 83 million years ago (Shank, 2010). Named seamounts within the Corner Rise Seamount chain include: Bean Seamount, Caloosahatchee Seamount with Milne-Edwards Peak, Verrill Peak, Castle Rock Seamount, Corner Seamount with Goode Peak and Kukenthal Peak, Justus Seamount, MacGregor Seamount, Rockaway Seamount, and Yakutat Seamount. Some of these peaks fall outside of the WECAFC convention area. The Caloosahatchee Seamount with Milne-Edwards Peak, Verrill Peak and Justus Seamount fall within the WECAFC convention area.

General biology:

Pristine coral areas have been documented in five of the Corner Seamounts using remote operated vehicles (Waller *et al.*, 2007). Splendid alfonsino (*Beryx splendens*) is the most abundant deep-sea fish species found in these seamounts (Vinnichenko, 1997; Durán Muñoz *et al.*, 2005; Murillo *et al.*, 2008; Auster *et al.*, 2005; Auster, Moore and Sulak, 2010). This species appears to aggregate near certain seamounts. In addition to alfonsino, other abundant fish species include black scabbardfish (*Aphanopus carbo*), wreckfish (*Polyprion americanus*) and cardinal fish (*Epigonus telescopus*), a slow-growing and long-lived species. Kukenthal Peak and, more generally, the western portion of the Corner Rise have been shown to be areas of high fish species diversity and abundance compared with other parts of the Corner Seamounts (González-Costas and Lorenzo, 2007; Auster, Moore and Sulak, 2010). It is unknown to what degree there is connectivity among the seamounts in the Corner Rise seamount chain, although some studies have shown clear distinctions between the New England and Corner Rise seamount fauna (Cho, 2008).

Impacts:

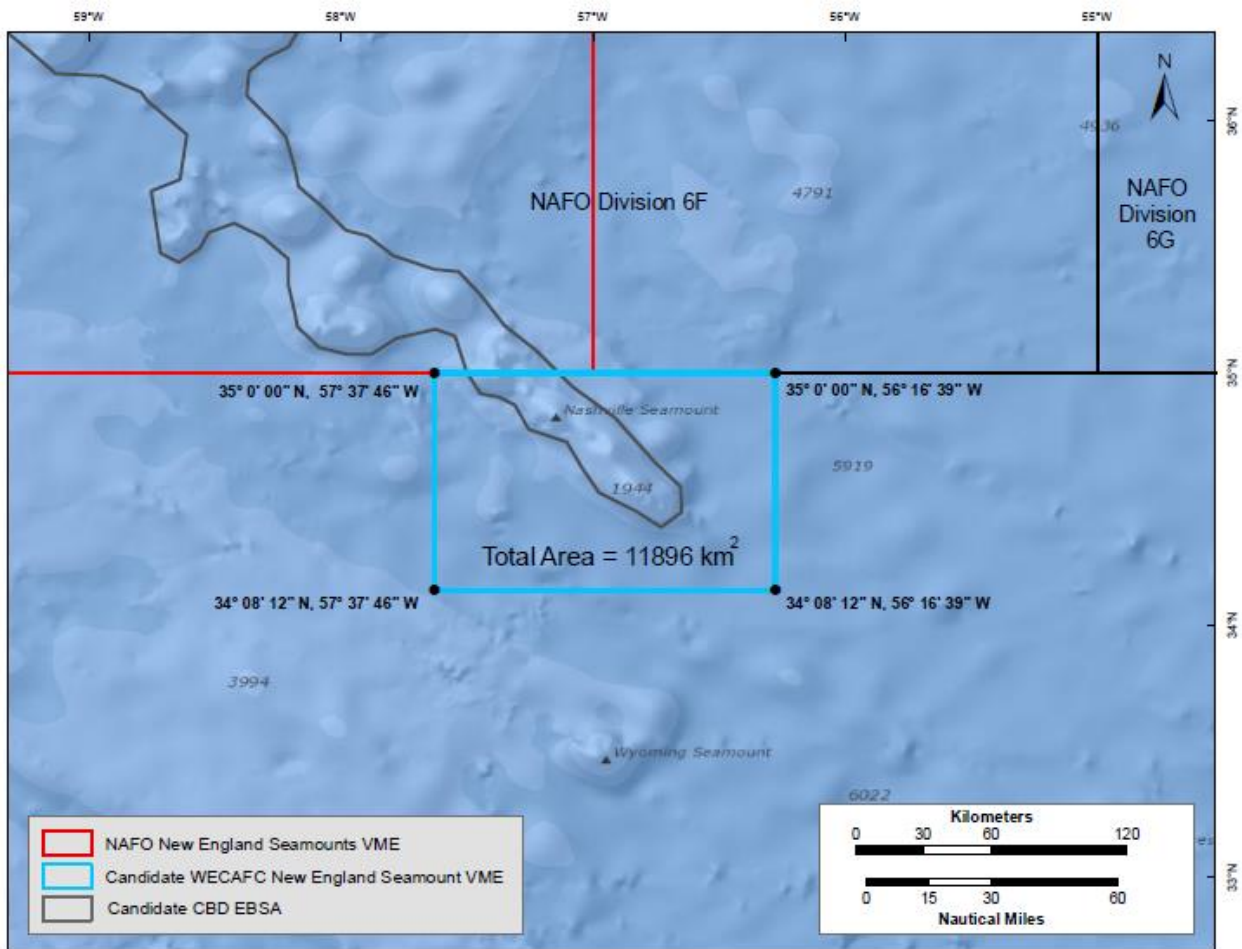
Seamount ecosystems are sensitive to anthropogenic disturbance because the fishes and invertebrates they are comprised of are mostly slow-growing, long-lived, late to mature, and experience low natural mortality. Fisheries (using bottom trawl and mid-water trawl) on the Corner Seamounts for splendid alfonsino (*Beryx splendens*) took place on a regular basis from 1976 to 1996, with total fish removals between 1976 and 1995 exceeding 19 000 tonnes (alfonsino being the most abundant species in the catch) (Vinnichenko, 1997). This fishing effort was followed by a nine-year pause and started again in 2004. Catches for this fishery ranged from about 50 to 1 200 tonnes and effort ranged from 4 to 50 days (NAFO, 2013). It is unclear to what extent these fish move over the seamount chain, and removals in the NAFO convention area may affect the populations in the WECAFC convention area. In recent years, this fishery has generally been small (catches of 302 tonnes in 2012). Bycatch of vulnerable species, such as small-tooth sand tiger shark (listed as vulnerable under the IUCN Red List for Threatened Species) may be an issue. Bottom trawling between 1976 and 1995 on the Corner Seamounts caused extensive destruction of the benthic fauna on the summits of Kukenthal peak and Yakutat Seamount in the NAFO convention area (Waller *et al.*, 2007).

New England Seamounts (Nashville Seamount)

The proposed candidate New England Seamount VME area in the WECAFC area is delineated in light blue in Figure A4.4. The NAFO New England Seamounts Closure (as per Article 16 of the 2014 NAFO Conservation and Enforcement Measures) is indicated in red, and the proposed CBD EBSA area (CBD, 2014) is indicated in grey. The NAFO/WECAFC boundary is indicated along the 35° latitude parallel, with the NAFO Statistical Divisions 6F and 6G to the north.

Figure A4.4

Proposed candidate New England Seamount VME area



Coordinates:

Latitude (DMS)	Longitude (DMS)
34° 08' 12" N	57° 37' 46" W
35° 00' 00" N	57° 37' 46" W
35° 00' 00" N	56° 16' 39" W
34° 08' 12" N	56° 16' 39" W

Justification:

Seamounts are rare islands of hard substratum and uniquely complex habitats that rise into bathyal and epipelagic depths. They tend to support endemic populations and unique faunal assemblages. Seamounts host complex coral and sponge communities comprised of species vulnerable to bottom-contact fishing gear including trawls, gillnets, traps, benthopelagic trawls, etc. (Morato, William and Pitcher, 2004; Stocks, 2004). Consequently, they are considered to be areas where VMEs are likely to occur. Seamounts are listed as areas with potential VMEs in both UN General Assembly Resolutions (e.g. UNGA, 2006) and the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas (FAO, 2009). A portion of the New England Seamounts north of the WECAFC area is closed to bottom fishing by NAFO, although exploratory fishing is permitted there (NAFO, 2014). The area was identified as an EBSA by the North-west Atlantic Regional Workshop of the CBD (CBD, 2014), and the CBD Sargasso Sea Summary Report (CBD, 2012) considered by the eleventh meeting of the Conference of the Parties (COP 11) of the CBD also highlighted the high vulnerability of the New England Seamounts.

Physical description:

The New England Seamounts are a 1 200-km-long chain of about 30 volcanic peaks in the North Atlantic extending from Georges Bank within the exclusive economic zone (EEZ) of the United States of America to the eastern end of the Bermuda Rise. The New England seamounts are in the New England – Corner Rise Seamount system (Shank, 2010). This area, referred to as the “New England hotspot”, is more than 3 000 km long. The spatial gap of about 300 km between the New England and Corner Rise Seamount chains arose through a pause in volcanic activity 83 million years ago (Shank, 2010). Named seamounts within the New England Seamount chain include: Allegheny Seamount, Asterias Seamount, Balanus Seamount, Bear Seamount, Buell Seamount, Gerda Seamount, Gilliss Seamount, Gosnold Seamount, Gregg Seamount, Hodgson Seamount, Kelvin Seamount, Kiwi Seamount, Manning Seamount, Michael Seamount, Mytilus Seamount, Nashville Seamount, Panulirus Seamount, Picket Seamount, Physalia Seamount, Rehoboth Seamount, Retriever Seamount, San Pablo Seamount, Sheldrake Seamount, Vogel Seamount. These fall almost entirely within the NAFO convention area or the United States EEZ, except for Nashville Seamount, which falls within the WECAFC convention area.

General biology:

These seamounts are rare islands of hard substratum and uniquely complex habitats that rise into bathyal and epipelagic depths. In general, seamounts, owing to their isolation, tend to support endemic populations and unique faunal assemblages. Scientific studies indicate that seamounts’ summits and upper slopes can provide refugia for cold-water stony corals from ocean acidification as they lie in shallower waters than the surrounding sea bed with a higher aragonite saturation horizon (Tittensor *et al.*, 2010; Rowden *et al.*, 2010). Coral and other hard-bottom VME indicators have been documented on these seamounts (Moore *et al.*, 2001; Murillo *et al.*, 2008; Watling *et al.*, 2011). Splendid alfonsino (*Beryx splendens*) is the most abundant deep-sea fish species found in these seamounts (Durán Muñoz *et al.*, 2005; Auster *et al.*, 2005; Auster, Moore and Saluk, 2010).

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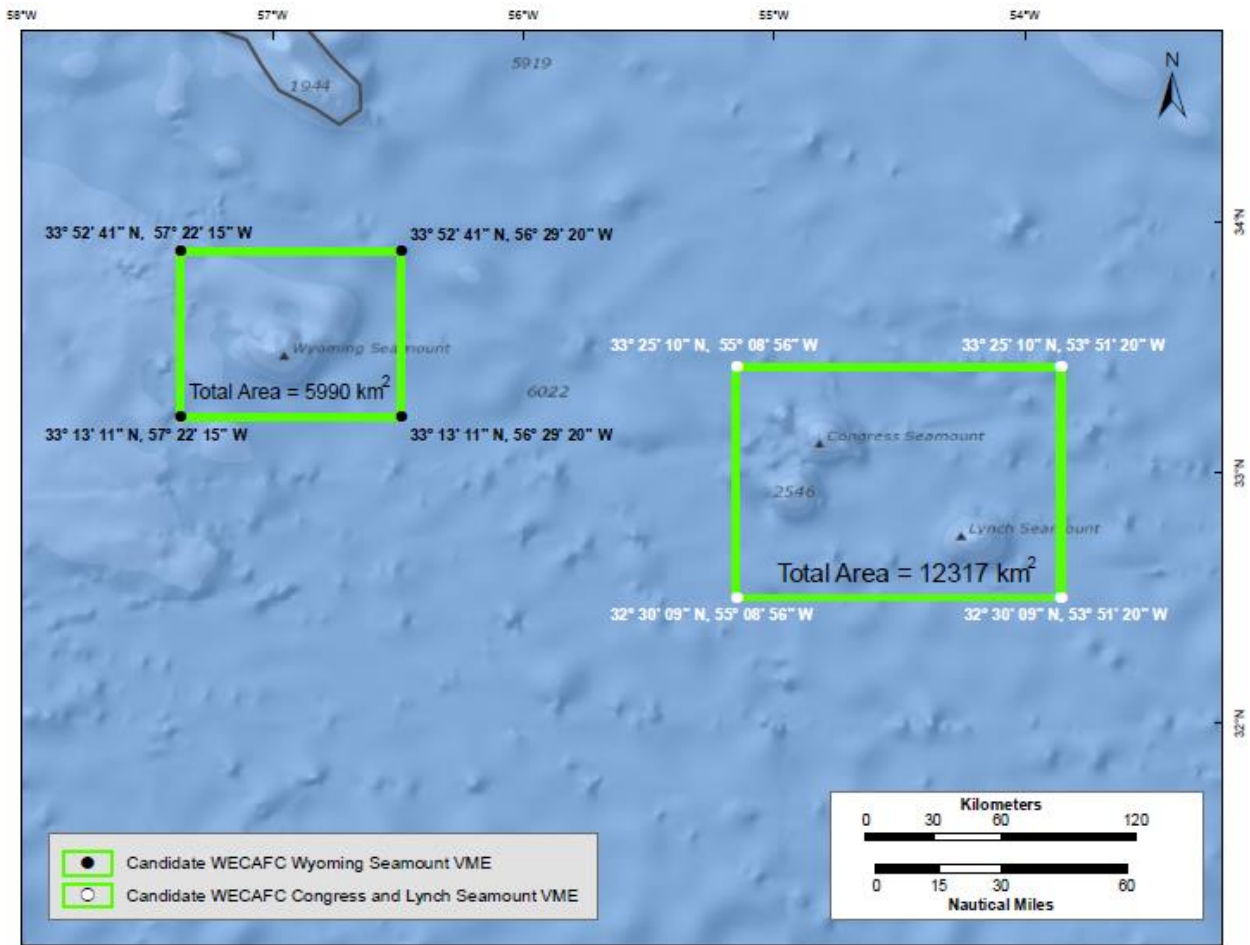
Seamount ecosystems are sensitive to anthropogenic disturbance because the fishes and invertebrates they are comprised of are mostly slow-growing, long-lived, late to mature, and experience low natural mortality. Some exploratory fishing may have been undertaken on the New England Seamounts. Limited commercial fishing activity was observed on the New England Seamounts from VMS data from 2003 to 2007.

Wyoming Seamount and Congress and Lynch Seamounts

The proposed candidate Wyoming Seamount (black points marking corners of area) and Congress and Lynch Seamounts (white points marking corners of area) VME areas in the WECAFC area are delineated in green in Figure A4.5. The proposed CBD EBSA area showing the Nashville Seamount (CBD, 2014) is indicated in grey to the north. Depth below the surface (metres) is indicated on the base map.

Figure A4.5

Proposed candidate Wyoming Seamount and Congress and Lynch Seamounts VME areas



Coordinates:

	Latitude (DMS)	Longitude (DMS)
Wyoming Seamount	33° 13' 11" N	57° 22' 15" W
	33° 52' 41" N	57° 22' 15" W
	33° 52' 41" N	56° 29' 20" W
	33° 13' 11" N	56° 29' 20" W
Congress and Lynch Seamounts	32° 30' 9" N	55° 8' 56" W
	33° 25' 10" N	55° 8' 56" W
	33° 25' 10" N	53° 51' 20" W
	32° 30' 9" N	53° 51' 20" W

Justification:

Seamounts are rare islands of hard substratum and uniquely complex habitats that rise into bathyal and epipelagic depths. They tend to support endemic populations and unique faunal assemblages. Seamounts host complex coral and sponge communities comprised of species vulnerable to bottom-contact fishing gear including trawls, gillnets, traps, benthopelagic trawls, etc. (Morato, William and Pitcher, 2004; Stocks, 2004). Consequently, they are considered to be areas where VMEs are likely to occur. Seamounts are listed as areas with potential VMEs in both UN General Assembly Resolutions (e.g. UNGA, 2006) and the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas (FAO, 2009).

Physical description:

The Sohm Abyssal Plain is a T-shaped sedimentary province situated south of Georges Bank in the Gulf of Maine, and the Scotian Shelf, covering an area of about 660 000 km². The southern portion of the vertical bar of the T extends about 780 km south of the Maritime Continental Margin and lies east of Bermuda. Stanley *et al.* (1981) provide topographic details of the Congress and Lynch Seamounts. They occur southeast of the New England Seamount Chain in the approximate centre of this part of the Sohm Abyssal Plain. They are located on sea floor formed about 90 million years ago. Congress Seamount is about 1 114 km due east of Bermuda. Its nearest large neighbours are the Wyoming and Nashville Seamounts, about 150 and 210 km to the northwest, and Lynch Seamount about 90 km to the southeast. Congress is a twin-peaked seamount, with each peak separated by 27 km. They are situated on a northeast–southwest axis with the northern summit slightly lower (2 554 m) than the southern summit (2 578 m). They rise 2 803 m and 2 779 m, respectively, above the floor of the surrounding Sohm Abyssal Plain (5 357 m). The average overall slope of the northern peak is about 9°; the average slope of the southern peak is about 10°. The Lynch Seamount is about 179 m deeper (2642 m). The basal area of the single-peaked Lynch mount is comparable in size with that of either of the Congress peaks. The summit of the Wyoming Seamount is 2 926 m below sea level, rendering it deeper than the Congress and Lynch Seamounts. It also has a wider base than the Congress and Lynch Seamounts. It is located on the eastward scarp of the northern Bermuda Rise and appears to be influenced by westward-flowing bottom currents that create areas of erosion and deposition (Helmrath, 1997).

General biology:

These seamounts are rare islands of hard substratum and uniquely complex habitats that rise into bathyal and epipelagic depths. In general, seamounts, owing to their isolation, tend to support endemic populations and unique faunal assemblages. Scientific studies indicate that seamounts' summits and upper slopes can provide refugia for cold-water stony corals from ocean acidification as they lie in shallower waters than the surrounding sea bed with a higher aragonite saturation horizon (Tittensor *et al.*, 2010; Rowden *et al.*, 2010). Stanley *et al.* (1981) report on seafloor photographs taken at three stations on and near the Congress Seamount. These are too poor to identify benthos and were taken for confirmation of surficial geology. The area lies within the region of highest suspended particulate matter concentration in the North Atlantic Ocean (Biscaye and Eittrheim, 1977). Congress Seamount is influenced by high bottom-current activity related to the westward-directed return flow of the southern Gulf Stream Gyre, indicating that the area is good habitat for deposit and suspension feeders.

Impacts:

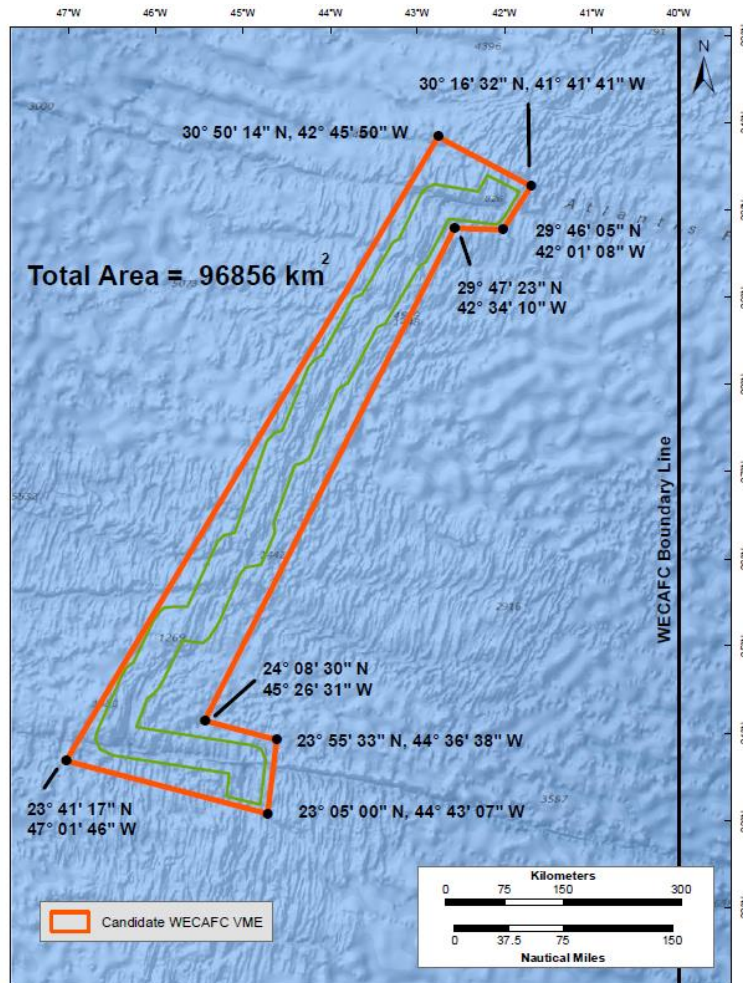
No data were found to assess the impact of bottom fishing on these seamounts.

Mid-Atlantic Ridge Hydrothermal Vents

The proposed candidate Mid-Atlantic Ridge Hydrothermal Vents VME area in the WECAFC area is delineated in orange in Figure A4.6. The proposed CBD EBSA area showing the EBSA of the same name (CBD, 2014) is indicated in green.

Figure A4.6

Proposed candidate Mid-Atlantic Ridge Hydrothermal Vents VME area



Coordinates:

Latitude (DMS)	Longitude (DMS)
30° 16' 32" N	41° 41' 41" W
29° 46' 5" N	42° 01' 8" W
29° 47' 23" N	42° 34' 10" W
24° 08' 30" N	45° 26' 31" W
23° 55' 33" N	44° 36' 38" W
23° 05' N	44° 43' 7" W
23° 41' 17" N	47° 01' 46" W
30° 50' 14" N	42° 45' 50" W

Justification:

Hydrothermal vents are unique habitats dominated by temperatures much warmer than those of the surrounding deep sea and characterized by a sulphur-rich chemistry. A small number of endemic taxa are adapted to these otherwise inhospitable environments and can occur at high density and biomass (Bacharty, Legendre and Desbruyères, 2009). Consequently, they are considered to be areas where VMEs are likely to occur. Hydrothermal vents are listed as areas with potential VMEs in both UN General Assembly Resolutions (e.g. UNGA, 2006) and the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas (FAO, 2009). The area was identified as an EBSA by the North-west Atlantic Regional Workshop of the CBD (CBD, 2014).

Physical description:

The proposed candidate Mid-Atlantic Ridge Hydrothermal Vent VME follows the Mid-Atlantic Ridge (MAR) from the Lost City Vent Fields at 30.125 N -42.1183 W to the Snake Pit vent fields at 23.3683 N -44.95 W and includes the confirmed active Broken Spur and Transverse-Atlantic Geotraverse (TAG) vents. The Lost City vent field is estimated to have been active for more than 30 000 years and has unique characteristics, being a relatively low temperature vent with high alkalinity. The entire feature is in ABNJ within the WECAFC area.

The Lost City vent field is an extensive hydrothermal field at 30°N near the eastern intersection of the MAR and the Atlantis Fracture Zone first discovered in 2000 (Kelley *et al.*, 2007). Four vents are identified from the area: IMAX, Poseidon, Seeps and Nature (InterRidge Vents Database v. 3.2; <http://vents-data.interridge.org/ventfield/lost-city>). It is located on a dome-like massif (the Atlantis Massif) and is dominated by steep-sided white carbonate chimneys reaching to 60 m in height. The vent field is estimated to have been active for more than 30 000 years, exceeding the known longevity of black-smoker-type hydrothermal vents by two orders of magnitude.

The Broken Spur vent field, located at 29°10'N on the MAR, is formed by five hydrothermal vents: Bogdanov, Saracen's Head (a black smoker), Spire, Wasp's Nest, White Mushroom (InterRidge Vents Database v. 3.2; <http://vents-data.interridge.org/ventfield>). Hydrothermal activity at the Broken Spur vent field has been of the order of several thousand years. It is relatively isolated, being the only vent field between 27° and 30°N (Baker and German, 2004). Hydrothermal activity within the Broken Spur vent field is controlled by a combination of recent volcanic and tectonic activity, similar to the vents at Menez Gwen, Lucky Strike, and Snake Pit. The field can be subdivided into an eastern valley and a western plateau. Three sulphide mounds, with high-temperature fluid vents (365 °C), and two weathered sulphide mounds, with low-temperature fluid seeps, are aligned across an axial summit trench (geological term: graben) that lies along the crest of a ridge within the axial valley floor. The largest high-temperature venting sulphide mound, which is up to 40 m high, is found in the centre of this trench. Two further and smaller high-temperature sulphide mounds are located to the east and west of the larger mound (cf. CBD, 2014).

The Trans-Atlantic Geotraverse (TAG) hydrothermal vent field is located on base of the median valley wall of the MAR crest near latitude 26°N at 3 670 m. It was the first high-temperature (369 °C) vent field discovered on the MAR. Seven vents are associated with this black-smoker complex: Alvin zone, Daibutsu, Kremlin, Mir zone, ODP 957M, ODP 957D and Shimmering Mound (InterRidge Vents Database v. 3.2; <http://vents-data.interridge.org/ventfield>). The TAG is within a larger hydrothermal field that extends over an area of at least 5 km × 5 km and consists of currently active low- and high-temperature zones, as well as a number of relict deposits (InterRidge Vents Database v. 3.2; <http://vents-data.interridge.org/ventfield>). Black-smoker fluids are extremely concentrated and exit vigorously from a central black-smoker complex to form a large, buoyant black plume (Rona *et al.*, 1986).

The Snake Pit hydrothermal vent site lies on the axis of the MAR at 23°22'N latitude, about 30 km south of the Kane Transform Intersection. Active black-smoker vents and a surrounding field of hydrothermal sediment occur at the crest of a laterally extensive neovolcanic ridge. The Snake Pit vents are located on a local peak of a volcanic ridge at a depth of 3 500 m. The vent field includes four vents: Moose, Beehive, Fir Tree and Nail (InterRidge Vents Database v. 3.2; <http://vents-data.interridge.org/ventfield/snake-pit>), and is at least 600 m long and up to 200 m wide and is covered by a thick blanket of greenish to yellow-orange hydrothermal sediment. Both active and extinct vents are perched along the crests of steep-sided sulphide mounds that reach heights of more than 40 m. High-temperature (366 °C) fluids are vented from black-smoker chimneys and low-temperature (226 °C) fluids seep from sulphide domes (Karson and Brown, 1989).

General biology:

Hydrothermal vents are habitats dominated by temperatures much warmer than those of the surrounding deep sea and characterized by a sulphur-rich chemistry that is highly toxic to most life. A small number of endemic taxa are adapted to these otherwise inhospitable environments and can occur at high density and biomass. Globally, about 600 species have been described from hydrothermal areas. Many of the invertebrates among them are endemic to the vents (Desbruyères, Segonzac and Bright, 2006). These vent communities are dependent on chemosynthetic production of microbial biomass, which on the MAR has been found to occur in warm water emissions, loosely rock-attached flocculent material, dense bacterial mats covering the surfaces of polymetal sulphide deposits, and filamentous microbes on the carapaces of shrimp (Wirsen, Jannasch and Molyneux, 2012). The bacterial mats on polymetal sulphide surfaces contained unicellular and filamentous bacteria. Primary production based on chemosynthesis forms the basis of the food web associated with hydrothermal vents. The Lost City vent fluids are relatively cool (40–91 °C) and alkaline (pH 9.0–9.8), supporting dense microbial communities. In the Broken Spur vent field, the fauna colonizing the vents are distinct from those found at other hydrothermal sites on the MAR (Murton, Van Dover and Southward, 1995). Shell hash, possibly derived from vent clams in various stages of dissolution, is identified on bottom photographs from the TAG. Massive swarms of bresiliid shrimp are associated with the hydrothermal chimneys there (Gebruk, Pimenov and Savvichev, 1993). An abundance of shrimps occurs around the chimneys at the Snake Pit vent field, while the vent fauna consists of anemones, worm tubes, large gastropods, bivalves, crabs, and zoarcid fishes (Grassle *et al.*, 1986; Mevel *et al.*, 1989).

Impacts:

No data were found to assess the impact of bottom fishing on this area.

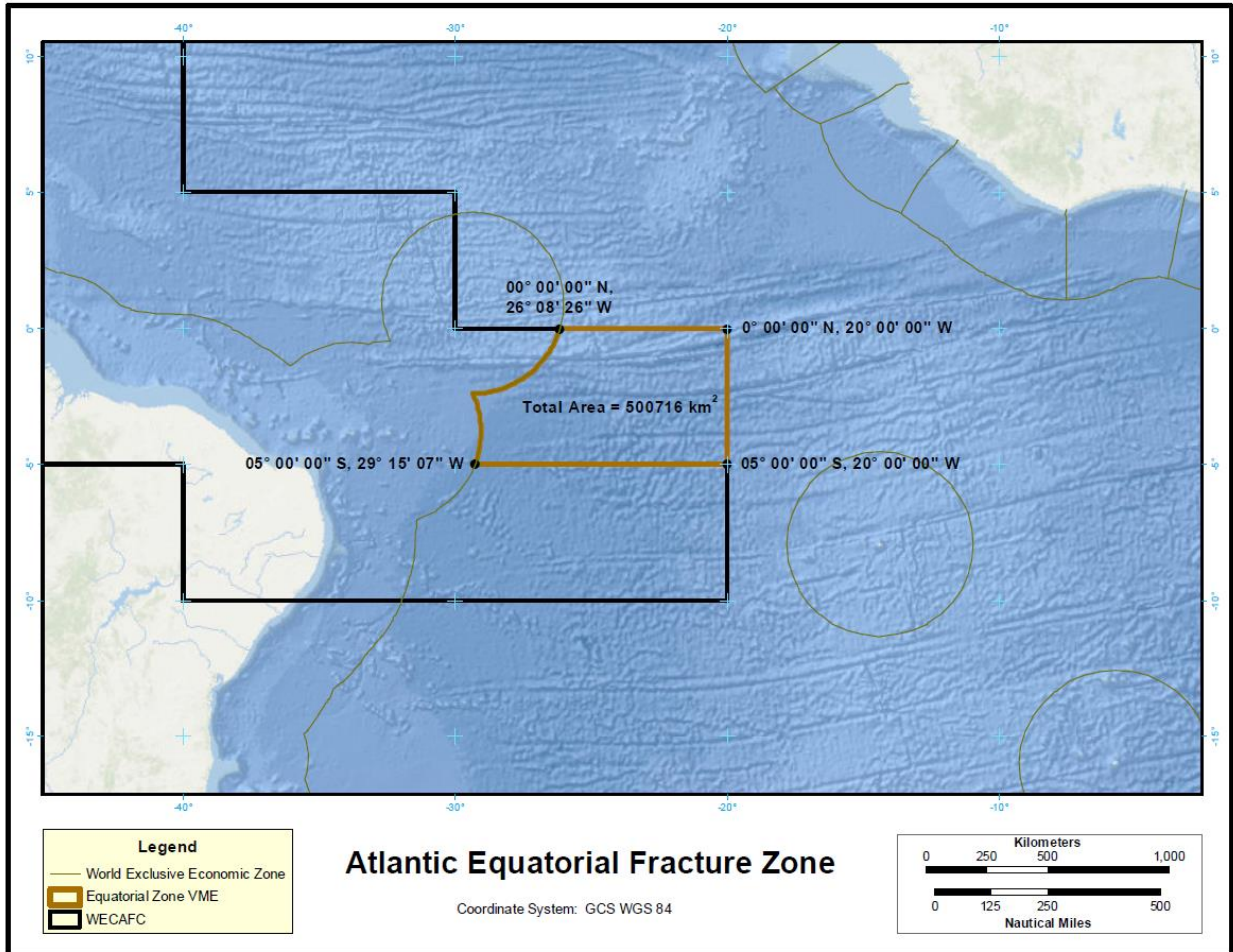
Areas that might qualify as VMEs but which require more research

Atlantic Equatorial Fracture Zone

The potential Atlantic Equatorial Fracture Zone VME area in the WECAFC area (black) is delineated in brown in Figure A4.7. The proposed CBD EBSA area extends into the Brazilian EEZ and to the waters westward of the WECAFC boundary (CBD, 2012).

Figure A4.7

Potential Atlantic Equatorial Fracture Zone VME area



Coordinates (to the Brazilian EEZ in the west):

Latitude (DMS)	Longitude (DMS)
0° 00' N	20° 00' W
5° 00' S	20° 00' W
5° 00' S	29° 15' 7" W
0° 00' N	26° 08' 26" W

Justification:

Trenches and ridges are typically hard-bottom features surrounded by the soft sediments of the abyssal plain. Consequently, they are considered to be areas where VMEs are likely to occur. In addition, yellowfin tuna may use part of this area as spawning grounds. The Wider Caribbean and Western Mid-Atlantic region CBD Workshop (CBD, 2012) identified this area as an EBSA, and it has been subsequently agreed upon by the CBD Conference of the Parties.

Physical description:

This feature is characterized by parallel ridge crests and trenches that extend in the east–west direction approaching the northeast Brazilian continental margin. These crests are typically 1 000–2 000 m deep, in the WECAFC area. Steep trenches delimit the north–south width of the ridge crests and may reach 4 000–6 000 m abyssal depths (CBD, 2012). The average depth for the Atlantic Equatorial Fracture Zone VME area within the WECAFC area is 4 861 m, with a minimum depth of 1 744 m and a maximum depth of 6 808 m. These values were obtained using GEBCO bathymetry.

General biology:

The CBD Report of the Wider Caribbean and Western Mid-Atlantic Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas (EBSAs) includes details of the biology of this area (CBD, 2012). However, it was difficult for participants at this workshop to determine what aspects were relevant to the WECAFC area. Yellowfin tuna (*Thunnus albacares*), bigeye tuna (*Thunnus obesus*) and swordfish (*Xiphias gladius*) concentrate in the equatorial area of the Atlantic as part of their feeding and reproductive routes. Similarly, the largest-known population of leatherback turtle (*Demochelis coriacea*), which nests on the coast of Gabon (West Africa), includes the west Equatorial Atlantic as one of their main feeding grounds. High benthic biomass, particularly on the western Equatorial area has been predicted through modelling exercises. The southern MAR (MAR-ECO project) has shown high benthic diversity associated with the ridges and trenches.

Impacts:

No data were found to assess the impact of fishing on this area, although it was noted that parts of the area are within fishable depth (less than 2 000 m) and so there is a risk of damage to VMEs through bottom fishing. It was noted that ICCAT may have more data on the location of spawning aggregations and that this should be followed up on. It was further noted that the CFMC/WECAFC/OSPESCA/CRFM Working Group on Spawning Aggregations might be a useful resource for this working group on determining the spawning aggregations of yellowfin tuna and swordfish in the WECAFC area (FAO Western Central Atlantic Fishery Commission, 2014).

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APPENDIX 5

Draft Recommendation to the sixteenth session of WECAFC

Draft Recommendations WECAFC/16/2016/tbd

ON THE MANAGEMENT OF DEEP SEA FISHERIES IN THE HIGH SEAS

The Western Central Atlantic Fishery Commission (WECAFC),

RECALLING that the objective of the Commission is to promote the effective conservation, management and development of the living marine resources within the area of competence of the Commission, in accordance with the FAO Code of Conduct for Responsible Fisheries, and to address common problems of fisheries management and development faced by members of the Commission;

MINDFUL of the fact that eighty-nine percent of the waters in the WECAFC area of competence have a depth of 400 meters or greater, that eighty-six percent of the water surface area has a depth greater than 1000 meters, and that fifty-one percent of the WECAFC area is considered high seas;

NOTING with concern the very limited information currently available about deep sea fish stocks and their respective catches in the WECAFC area;

ACKNOWLEDGING that the 1995 UN Fish Stocks Agreement and the 1995 FAO Code of Conduct for Responsible Fisheries and the 2001 Reykjavik Declaration call for application of the precautionary approach and an ecosystem approach to fisheries (EAF);

MINDFUL of the various UN General Assembly resolutions to sustainably manage fish stocks and protect vulnerable marine ecosystems for deep-sea fisheries in the high seas, and noting particularly the importance of paragraphs 80-90 of resolution 61/105 and of paragraphs 113-120 of resolution 64/72;

ACKNOWLEDGING further that in the WECAFC mandate area currently no regional fishery management organization (RFMO) exists which is responsible for deep sea fisheries management, and that as a consequence (and in line with UNCLOS) States participating in deep sea fisheries should cooperate to adopt and implement interim conservation and management measures to ensure sustainable management of fisheries in the long term and to prevent significant adverse impacts on VMEs;

RECALLING the establishment of the WECAFC Working Group on the management of deep-sea fisheries by WECAFC 14 in 2012 and the Resolution WECAFC/14/2012/1 “On Strengthening the implementation of international fisheries instruments”;

REAFFIRMING that the 2008 FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas provide the necessary guidance on management factors ranging from an appropriate regulatory framework to the components of good data collection programs and include the identification of key management considerations and measures necessary to ensure conservation of target and non-target species, as well as affected habitats, and encourage implementation by all WECAFC members involved in DSFs;

RECOGNIZING that deep sea fisheries RFMOs which cover adjacent areas to the WECAFC mandate area (e.g. Northwest Atlantic Fisheries Organization -NAFO, South East Atlantic Fisheries Organisation –SEAFO, and North East Atlantic Fisheries Commission -NEAFC) have made

considerable progress in managing deep sea fisheries and identification of Vulnerable Marine Ecosystems (VMEs), and that lessons can be learned from their processes and measures;

NOTING the report with deliberations and outcomes of the FAO/WECAFC Technical Workshop on Bottom Fisheries in the High Seas Areas of the Western Central Atlantic, Barbados, 30 September - 2 October 2014;

PENDING the delivery of additional information by the Working Group and the WECAFC Scientific Advisory Group (SAG);

ADOPTS in conformity with the provision of Article 6 (h) of the Revised Statutes of the WECAFC the

RECOMMENDATION that:

1. Members of WECAFC implement, as appropriate, the International Guidelines for the Management of Deep-sea Fisheries in the High Seas.
2. Members of WECAFC develop data and information collection programmes and research projects, as appropriate, to assess current practice and scope for economically viable and ecologically sustainable investments in DSF in the WECAFC mandate area.
3. Members and non-members of WECAFC, involved in experimental, exploratory and established DSF in the high seas of the WECAFC area, report annually (in August for the previous year in the format presented in Appendix DD) to the WECAFC Secretariat on their activities, including detailed catch and effort statistics at a suitable spatial resolution, to inform the membership of these activities on an annual basis.
4. Members of WECAFC and non-members submit to the WECAFC Secretariat any plans to engage in DSF, including exploratory fishing and/or research on deep sea resources, in the WECAFC area prior to implementation.
5. The following areas in the WECAFC area are identified as containing VMEs or likely to contain VMEs, and that States act accordingly as per UNGA Resolution 61/105 that these areas be closed to bottom fisheries on a temporary basis and subject to review, or have some other appropriate management measure, pending more detailed survey work and assessment by this working group:

Corner Seamounts

Latitude (DMS)	Longitude (DMS)
33° 36' 28" N	52° 53' 30" W
35° 0' 00" N	52° 53' 30" W
35° 0' 00" N	47° 6' 28" W
33° 36' 28" N	47° 6' 28" W

New England Seamounts

Latitude (DMS)	Longitude (DMS)
34° 08' 12" N	57° 37' 46" W
35° 00' 00" N	57° 37' 46" W
35° 00' 00" N	56° 16' 39" W
34° 08' 12" N	56° 16' 39" W

Wyoming Seamount

Latitude (DMS)	Longitude (DMS)
33° 13' 11" N	57° 22' 15" W
33° 52' 41" N	57° 22' 15" W
33° 52' 41" N	56° 29' 20" W
33° 13' 11" N	56° 29' 20" W

Congress and Lynch Seamounts

Latitude (DMS)	Longitude (DMS)
32° 30' 9" N	55° 8' 56" W
33° 25' 10" N	55° 8' 56" W
33° 25' 10" N	53° 51' 20" W
32° 30' 9" N	53° 51' 20" W

Mid-Atlantic Ridge Hydrothermal Vents

Latitude (DMS)	Longitude (DMS)
30° 16' 32" N	41° 41' 41" W
29° 46' 5" N	42° 01' 8" W
29° 47' 23" N	42° 34' 10" W
24° 08' 30" N	45° 26' 31" W
23° 55' 33" N	44° 36' 38" W
23° 05' N	44° 43' 7" W
23° 41' 17" N	47° 01' 46" W
30° 50' 14" N	42° 45' 50" W

- Members of WECAFC collaborate in the identification of other VMEs in the areas beyond national jurisdiction in the WECAFC mandate area. WECAFC explores options to work cooperatively with neighbouring RFBs and FAO, on the improvement and harmonization of exploratory fishing protocols, DSF management plans, precautionary measures, and collection of monitoring data and other DSF information and statistics.

APPENDIX 6

Terms of Reference of the Working Group on the Management of Deep Sea Fisheries

WECAFC Working Group on the Management of Deep Sea Fisheries

Draft (updated) TORs

1. Background and justification

Deep sea fisheries in the high seas are those where the total catch includes species that can only sustain low exploitation rates, and that are conducted using fishing gears that either contact or are likely to contact the sea floor during the course of the fishing operations. Eighty-nine percent of the waters in the WECAFC area of competence have a depth of 400 meters or greater. Eighty-six percent of the water surface area has a depth greater than 1000 meters. Fifty-one percent of the WECAFC area is considered high-seas. The information available about deep sea fish stocks and their catches in the WECAFC area is insignificant.

Hardly any data on deep sea fish stocks and catches in the region are collected or reported. The vulnerable marine ecosystems (VMEs) in the deep sea areas and particularly in the high seas areas in the WECAFC competence area have not been identified. The current gaps in knowledge and information on this subject may have serious effects for the management of stocks and sustainability of fisheries operations in the waters concerned. While in many regions countries and Regional Fisheries Management Organizations (RFMOs) have made efforts to increase knowledge and information on this subject, this is not the case in the WECAFC area.

The 2008 FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas provide guidance on management factors ranging from an appropriate regulatory framework to the components of good data collection programs and include the identification of key management considerations and measures necessary to ensure conservation of target and non-target species, as well as affected habitats. Making a joint effort towards implementation of these internationally accepted voluntary guidelines is highly necessary in the WECAFC region.

2. Role of the Working Group

The objective of the Working group is to inform and provide guidance for the management of deep sea fisheries by WECAFC members, in such a manner as to promote responsible fisheries that provide economic opportunities, while ensuring the conservation of marine living resources and the protection of marine biodiversity and to facilitate the implementation of the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas.

2.1 Specific Terms of Reference for the period 2014 to 2016

The work of the Working Group will be guided by the FAO International Guidelines for the Management of Deep-sea Fisheries of the High-seas and in particular will address the following aspects:

- a) Collect and review of existing (past and present) data and information on the deep sea fisheries in the WECAFC area, in addition to identifying the potential of such fisheries in the region.
- b) Meet and analyse the data and information collected and make recommendations for the sustainability of the deep sea fisheries in the WECAFC region.

- c) Identify priority areas for future work and international funding and support for the work identified.
- d) Organize in 2014 a WECAFC Technical Workshop on Bottom Fisheries in the High Seas Areas of the Western Central Atlantic to present and discuss the findings and recommendations of the working group, and to obtain inputs from the WECAFC members.
- e) Develop a Chapter on the Western Central Atlantic for the 2014/2015 FAO Worldwide review of bottom fisheries in the high seas.
- f) Report to the Commission at its next session, its conclusions and recommendations for further activities.

3. Mode of Operation

3.1 Membership of the Working Group

Membership shall consist of all Members of WECAFC, including Overseas Territories and Departments, with an interest in deep sea fisheries. Membership may also include representatives of deep sea fisheries stakeholders of Members, Non-members, as well as relevant regional and regional organizations and experts.

Working Group members from WECAFC members

The members of the Working Group, on behalf of WECAFC members, will have expertise in deep sea fisheries and its management, deep sea fish species and the vulnerability of stocks, VMEs and/or high seas legal frameworks, in their respective countries. They will play an important role through the following activities and commitments:

- Participate in agreed activities of the Working Group, and ensuring the participation of appropriate other experts from the country (if required);
- Support implementation of the draft recommendations prepared by the Working Group at the national level;
- Assist by hosting Working Group meetings on a rotational (periodic) basis (as appropriate).

Working Group members from partner organizations and institutions

The Working Group members from partner organizations at international and regional level will provide (in-kind) expertise, participate in information and data collection, facilitate funding, collaborate in the organization of workshop(s) and funding of experts participation (if appropriate), support the co-ordination and communication in the Working Group and support the decision-making process in the Wider Caribbean Region in order to reach well-balanced outputs and recommendations that are acceptable to the region and can account with the support from the various partners in terms of implementation and follow-up.

3.2 Election of Convener of the Working Group

The Working Group shall elect a Convener from among its Members to serve over the two-year period.

The first task of the convener would be to seek for experts among the WECAFC Members on deep sea fisheries and its management, deep sea fish species and the vulnerability of stocks, VMEs, high seas legal frameworks, as well as to contact potential partner organizations and solicit their interest to join in this working group.

3.3 Role of FAO/WECAFC Secretariat

- a) To coordinate activities of the Working Group, among WECAFC and Non-WECAFC Members, at the wider regional level;
- b) To assist with mobilization of resources for the activities of the Working Group;
- c) To assist with convening of meetings of the Working Group;
- d) To liaise with the Secretariat of the Convention on Biological Diversity (CBD) and particularly on their ongoing work to describe Ecologically or Biologically Significant Marine Areas (EBSAs) in the Wider Caribbean Region promote technical assistance and support to research and resource assessment through collaboration with regional and international research partners;
- e) To liaise with the FAO, UNEP and World Bank staff working on the GEF programme on “Global sustainable fisheries management and biodiversity conservation in the Areas Beyond National Jurisdiction (ABNJ)”
- f) To liaise with other Regional Fishery Bodies (RFBs) active in the Wider Caribbean Region and neighbouring areas will be involved as much as possible in the work of the group; these RFBs include amongst others OSPESCA, CRFM, CFMC, ICCAT, NAFO, NEAFC and CECAF.
- g) To coordinate the formulation and adoption of recommendations by the Working Group so as to facilitate the decision-making process at the level of WECAFC Area 31.

3.4 Working Group Meetings

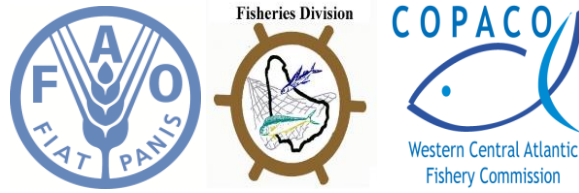
Face-to-face meetings of the Working Group are foreseen to be convened at least once every two years, or as required, if resources are available. Where possible the use of available ICT tools to facilitate electronic meetings should be maximized. Meetings shall be chaired by the Convener of the Working Group.

4. Amendments to these Terms of Reference

The Terms of Reference may be amended as required by Members at the level of WECAFC, following each two-year period coinciding with meetings of the WECAFC.

APPENDIX 7

Press release



Promoting Responsible Deep Sea Fisheries in the Western Central Atlantic

Bridgetown, Barbados, 6 October 2014

The Food and Agriculture Organization of the United Nations (FAO) and the Western Central Atlantic Fishery Commission (WECAFC) conducted last week a Technical Workshop on Bottom Fisheries in the High Seas Areas of the Western Central Atlantic. This workshop, which was hosted by the Government of Barbados on 30 September - 2 October, was the first meeting of the WECAFC Working Group on the Management of Deep Sea Fisheries.

Experts from seventeen WECAFC member States¹ and four regional institutions participated in the Technical Workshop.

The workshop increased awareness on the FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas, identified initial deep sea fisheries and reviewed initial information on Vulnerable Marine Ecosystems (VMEs) from the WECAFC area.

No commercial Deep Sea Fisheries in Areas Beyond national Jurisdiction (ABNJ) in the WECAFC area were identified among States present at this workshop, though surveys identified potential deep sea fisheries resources for crab, shrimp and snappers in other deep sea areas of the WECAFC area. Relevant flag States will be requested to submit information on deep sea fisheries in the area to WECAFC as some commercial fishing has taken place in the WECAFC ABNJ.

Available information on VME elements (seamounts, vents, ridge systems) and potential VME indicator species, such as corals and sponges, was presented and discussed.

Recommendations for medium to longer-term priorities and collaboration were identified as well. The Workshop produced draft recommendations to the 16th session of WECAFC, scheduled for 2016, on bottom fisheries and VMEs in the high seas; agreed on a process for inclusion of a WECAFC chapter in the upcoming Worldwide Review of Bottom Fisheries in the High Seas and a chapter in the FAO Technical Paper on VME Current Practices and Processes. The information gathered and analyzed will also be added to the FAO VME Database in the near future.

¹ The member States that participated were the following: Antigua and Barbuda, Bahamas, Barbados, Belize, Colombia, Dominican Republic, Grenada, Guyana, Nicaragua, Panama, St Kitts and Nevis, St Vincent and the Grenadines, Suriname, Trinidad and Tobago, United Kingdom, United States of America and Venezuela.

More information on the workshop and its outcomes can be obtained from: deepseas@fao.org and from the WECAFC-Secretariat@fao.org

The first meeting of the Working Group on the Management of Deep Sea Fisheries of the Western Central Atlantic Fishery Commission (WECAFC) was held in Christ Church, Barbados, from 30 September to 2 October 2014.

The meeting brought together 31 fisheries experts from 17 WECAFC member States and 4 regional institutions from the region. The Working Group noted that there were international obligations to protect vulnerable marine ecosystems (VMEs) in the areas beyond national jurisdiction (ABNJ) of the WECAFC area. The Working Group compiled available information on the fisheries in the ABNJ of the WECAFC area and noted that deep-sea fisheries in the ABNJ had been and were occurring, and that they were likely to increase in the future. The group also noted with some concern that many of their shallow water fisheries were exploring and fishing in deeper waters.

The FAO Deep-sea Fisheries Guidelines were presented to the group, which then applied them to VME elements such as seamounts and the Mid-Atlantic Ridge hydrothermal vents. The Working Group proposed a total of five candidate VMEs within the ABNJ of the WECAFC area. The management of these areas is outside the current mandate of WECAFC and lies with the States operating fishing vessels in the area.



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