Briefing for the Seventh Meeting of the Commission of the South Pacific Regional Fisheries Management Organisation

The Hague, The Netherlands

23 January – 27 January 2019

Contents

Introduction and Recommendations

The Deep Sea Conservation Coalition (DSCC) respectfully submits this briefing for the Seventh Meeting of the Commission of the South Pacific RFMO (SPRFMO). The DSCC thanks the European Union and the Dutch government for hosting this Commission meeting.

This briefing will address agenda item 6, Conservation and Management Measures (CMM), with respect to bottom fisheries; and item 8, Performance Review Recommendations.

The DSCC makes the following recommendations:

1. The New Zealand and Australian proposal for a new CMM on Bottom Fishing, Comm7-Prop03, requires extensive amendments, as it is inconsistent with the provisions related to the protection of VMEs of UNGA resolutions 71/123 (2016), 64/72 (2009) particularly paragraphs 119[1] and 120,[2] and resolution 66/68 (2011), as well as resolution 61/105[3] (2006) and the 2008 United Nations Food and Agriculture Organisation International Guidelines for the Management of Deep-Sea Fisheries in the High Seas (FAO Guidelines).[4] and the provisions of the SPRFMO Convention as well as the UN Fish Stocks Agreement.
2. The companion proposed new CMM for deepwater species, Comm7-Prop16, requires amendments, in particular to address sustainability issues. This is in pursuance of Review Panel recommendation in para 68(b) that the Commission apply a highly precautionary approach to fishery management decisions in the absence of sufficient information to permit the application of an ecosystem approach to management, and in para 166(d) that the Commission take urgent action to update the management measures for bottom fisheries, to adopt a precautionary approach to the conservation of all deepwater stocks, and implement

a SPRFMO-wide approach to the management and protection of VMEs as a matter of priority.

3. The Commission should instruct the Scientific Committee to review the encounter protocol at its next meeting, this time using precautionary threshold instead of the 99% threshold, and develop an encounter protocol for non-orange roughy and longline fisheries.
4. States that intend to continue bottom trawling should update their impact assessments by 1 January 2020. The Commission should require all countries carrying out bottom fishing to expeditiously update their impact assessments in line with the seven criteria outlined in paragraph 47 of the FAO Guidelines.[5]
5. The Commission should instruct the Scientific Committee to prioritize stock assessments for all target species as a matter of urgency and no later than by the 2020 SC meeting. This is a fundamental requirement for sustainable fisheries management, and further fishing should not take place without stock assessments and a determination of sustainable levels of catch for target species.
6. The Commission should also instruct the Scientific Committee to provide advice on assessments and minimizing impacts on non-target species, in order for measures to be established to minimize, prevent, or eliminate the catch of deep-sea (low productivity) species, in particular species listed as endangered, threatened, vulnerable or near threatened on the IUCN Red List or otherwise likely to qualify as such under IUCN Red List criteria.
7. When the Commission reviews the Cook Islands Potting proposal under paragraph 25 of the CMM 14b-2018 to determine whether it should continue, consistent with CMM 13-2016, we recommend that it should determine that it should not continue, based on the SC findings of numerous criteria not having been adequately addressed.[6] We note the recommendation of the Review Panel that the Commission and its subsidiary bodies strictly apply the procedural and substantive requirements of CMM 13-2018 for all new and exploratory fishery proposals.[7]
8. The Commission should amend the list of "other species of concern" in Annex 14 of CMM 03-2018 (data) to include deep-sea sharks in the SPRFMO Convention Area which are categorized as critically endangered, endangered, vulnerable or near threatened on the IUCN Red List and to also include CITES appendix II relevant species as recommended by SC-4 in Annex 5 of the SC-4 report.[8]
9. The Commission should require the collection of information that will provide for assessments in non-orange roughy target fisheries or these fisheries should be closed if it is not likely that the information collected will lead to a robust stock assessment in a short timeframe (2020 at the latest). This includes a review of the level of observer coverage in longline fisheries. We note the Recommendation of the Review Panel in paragraph 166(h) that the Commission review current efforts to give effect to Article 3(1)(a)(ii) to ensure impacts on non-target and associated or dependent species are taken into account, and Article 3(1)(a)(vii) which requires marine ecosystems to be protected, in particular those ecosystems which have long recovery times following disturbance, as well as paragraph 100(d).[9]
10. The SC should follow its work plan to study the effects of fishing on ecologically or biologically sensitive areas (EBSAs) identified in the Commission area and to identify appropriate responses, including protected areas.
11. The Commission in its consideration of the Performance Review Comm7-Doc06 should apply the recommendations as a matter of urgency, including with respect to matters to be considered in this Commission meeting.

The Bottom Fishing Measure

Deepwater Spatial Management

There is a fundamental disconnect with the proposed measure on bottom fishing, Comm7-Prop03, in that it has taken the scientifically derived Zonation model, which is appropriate as a tool for management, and has turned it into the main management measure itself, rather than use it as a tool for management, without any explanation or discussion of this, and most importantly, without providing any measures for preventing significant adverse impacts (SAIs) on vulnerable marine ecosystems (VMEs.) The 2017 SC-5 discussed spatial management,[19] but not the measure itself, and the 2018 SC-6 described the model as underpinning the measure but left it to New Zealand and Australia to develop the measure.[10] In developing the final measure, the United Nations General Assembly (UNGA) system of prior impact assessments, closure of areas or imposition of measures to prevent SAIs on VMEs and the move-on rule to catch any impacts on VMEs has not been followed.

The spatial management approach is clearly spelled out in the UNGA resolutions and the FAO Guidelines:

> (1) closing areas where VMEs are known or likely to occur on the basis of the best scientific information available unless bottom fisheries in such areas can be (and are) managed to prevent SAIs on VMEs;[11] and
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> (2) only permitting bottom fishing to take place in an area after conducting a prior impact assessment to determine whether SAIs would occur and any mitigation measures needed, including closures, within the area to ensure that SAIs on VMEs would be prevented;[12] and
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> (3) As a complement to these two key requirements, a move-on rule is required to cover those cases where encounters with VMEs occur in spite of the efforts of States and RFMOs to conduct impact assessments and to close areas where VMEs are likely to occur, so that fishing stops in the encounter area, and the area is assessed for closure or otherwise to prevent SAIs on any VMEs found.[13]

UNGA Resolution 66/68 in 2011 emphasised the importance of seabed mapping, mapping of VMEs, camera observations, benthic ecosystem modelling and predictive modelling (such as the Zonation modelling work undertaken by New Zealand) and the adoption of measures to prevent significant adverse impacts (SAIs) on such VMEs, including closures of areas. It stated that the UNGA:

> 185. Recognizes that different types of marine scientific research, such as, inter alia, seabed mapping, mapping of vulnerable marine ecosystems based on information from the fishing fleet, on-site camera observations from remote vehicles, benthic ecosystem modelling, comparative benthic studies and predictive modelling have resulted in identification of areas where vulnerable marine ecosystems are known or are likely to occur and in the adoption of conservation and management measures to prevent significant adverse impacts on such ecosystems, including the closure of areas to bottom fishing in accordance with paragraph 119 (b) of resolution 64/72;
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> 186. Encourages, in this regard, States, regional fisheries management organizations and arrangements with the competence to manage bottom fisheries, and States participating in negotiations to establish such organizations or arrangements, to consider the results available from different types of marine scientific research, including, as appropriate, those listed in paragraph 185 above, concerning the identification of areas containing vulnerable marine ecosystems, and to adopt conservation and management measures to prevent significant adverse impacts from bottom fishing on such ecosystems, consistent with the Guidelines,

> or to close such areas to bottom fishing until such conservation and management measures are adopted, as well as to continue to undertake further marine scientific research, for the above-mentioned purposes, in accordance with international law, as reflected in Part XIII of the Convention;

This makes it clear that the UNGA predictive modelling, seabed mapping and similar tools are to be used, but as means of implementing the necessary responses to identification of, and encounter with, VMEs: either to close such areas to bottom fishing until conservation and management measures are adopted, to prevent significant adverse impacts from bottom fishing on such ecosystems,[25] or, failing that, for States and SPRFMO to "not to authorize bottom fishing activities until such measures have been adopted and implemented".[14]

This is also consistent with the SPRFMO Convention. The SPRFMO objective stated in article 2 is: "through the application of the precautionary approach and an ecosystem approach to fisheries management, to ensure the long-term conservation and sustainable use of fishery resources and, in so doing, to safeguard the marine ecosystems in which these resources occur." This makes it clear that marine ecosystems in which fishery resources occur must be "safeguarded".[15]

Article 20.1(d) provides that the conservation and management measures adopted by the Commission shall include measures to:

> protect the habitats and marine ecosystems in which fishery resources and non-target and associated or dependent species occur from the impacts of fishing, **including measures to prevent significant adverse impacts on vulnerable marine ecosystems and precautionary measures where it cannot adequately be determined whether vulnerable marine ecosystems are present or whether fishing would cause significant adverse impacts on vulnerable marine ecosystems."** (emphasis added)

Article 10(2)(c) tasks the Scientific Committee to

> provide advice and recommendations to the Commission and its subsidiary bodies on the impact of fishing on the marine ecosystems in the Convention Area including **advice and recommendations on the identification and distribution of vulnerable marine ecosystems, the likely impacts of fishing on such vulnerable marine ecosystems and measures to prevent significant adverse impacts on them.** (emphasis added)

Articles 10 and 20 clearly represent an incorporation of the approach of resolution 61/105, the protection of VMEs and avoidance of SAIs on VMEs. The mandate in article 20.1(d) to 'protect' habitats and marine ecosystems, as well as measures to prevent SAIs on VMEs is a strong one.

The provisions are also an implementation of the UN Fish Stocks Agreement, including its preambular recital that Parties are "[c]onscious of the need to avoid adverse impacts on the marine environment, preserve biodiversity, maintain the integrity of marine ecosystems and minimize the risk of long-term or irreversible effects of fishing operations", the principle in article 5(g) to "protect biodiversity in the marine environment" and to "apply the precautionary approach in accordance with article 6".

Lest there be any doubt, the FAO Guidelines describe vulnerable marine ecosystems and significant adverse impacts.[16]

DSCC wrote a note to delegates involved in the consultations in November 2018, and we are attaching the note to this briefing to avoid repetition. Some key elements of our note, and recommendations, follow.

1. In regard to preventing significant adverse impacts on VMEs, while a lot of work has gone into developing the 'Zonation' model used as the basis for the proposal, the model

only used some species that would qualify as VME taxa in the SPRFMO area, and not other taxa (such as xenophyophores, bryozoans and brachiopods) which are considered VME taxa by other RFMOs.

2. The model needs to be tested in practice, i.e. it needs to be properly ground truthed, and moreover is not in itself a management measure. Rather, it indicates where higher levels of vulnerable species may be expected to be found – i.e. where VMEs are likely to occur based on the best scientific information available using predictive modelling. This is an approach that is recognized as being useful by the UNGA, but, in addition to the need for direct benthic observations, the model does not in itself provide a measure which will prevent SAIs on VMEs.
3. The appropriate management response to the identification of areas where VMEs are likely to occur has been firmly established in UNGA resolution 61/105, paragraph 83 (and in subsequent resolutions) to:
    a. first and foremost, a closure of the area, unless and until an impact assessment has determined that it is possible to conduct bottom fishing in a VME area and not cause significant adverse impacts.
    b. Then, to establish an appropriate CMM to manage the fishery to prevent SAIs on VMEs in the area, and
    c. Finally to put into place a move-on rule as a back stop in case the assessment missed something important.
4. The move-on rule in the proposal from New Zealand and Australia has serious problems. While the proposal indicates that an encounter with a VME may result in the temporary closure of an area, it is not clear whether and how a determination would be made to maintain the closure or reopen the area. At present, it is suggested that the SC determine whether the encounter is "consistent" with the zonation model. This is an inappropriate test. The task of SPRFMO should be to close the area, undertake an evaluation of the area through the Scientific Committee, and put into place measures to prevent significant adverse impacts.[17]
5. An equally serious problem with the proposed move-on rule are the threshold levels proposed to trigger the move-on rule that would be established under the encounter protocol. The 'individual' threshold levels are for the most part much higher than those New Zealand has had in place for the past ten years. The threshold level proposed for the main reef building coral habitat forming VME indicator taxa in the region – stony corals (Scleractinia), commonly found on seamounts in the SPRFMO area - is 250 kilograms of bycatch observed in trawl gear. This is an extremely high threshold level that, if implemented, would allow continued widespread degradation of coral ecosystems across the western SPRFMO convention area.

The UN General Assembly has confirmed in the 2018 Sustainable Fisheries resolution that it will again review the implementation of the UNGA resolutions on bottom fisheries in areas beyond national jurisdiction in 2020. It is important for both New Zealand Australia and for SPRFMO that the measures in place for the bottom fisheries on the high seas in the South Pacific be managed consistent with the commitments established in the UN resolutions and obligations under international law.

It is all the more important for SPRFMO to deliver on the biodiversity commitments made through the UNGA resolutions in light of the current negotiations underway for a new implementing agreement under UNCLOS for the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction.

In addition, the above analysis and recommendations are consistent with the implementation of Sustainable Development Goal 14 to "conserve and sustainably use the oceans, seas and marine resources for sustainable development", and specifically SDG 14 target 14.2 to "by 2020, sustainably manage, and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience and take action for their restoration, to achieve healthy and productive oceans." Here again, States worldwide have agreed on avoiding significant adverse impacts, as well as taking action for restoration, as well as the goal of achieving healthy and productive oceans.

We have attached a scorecard where we have assessed the proposal against the UNGA resolutions and other key agreed requirements.

Stock Assessments

DSCC continues to be concerned at the lack of data about orange roughy stocks,[18] other target stocks such as alfonsino, as well as bycatch.[19] Much uncertainty surrounds the recommendations of 1,140 tonnes per year for up to 2 years on the three stocks combined on the Louisville Ridge[20] and 346 tonnes per year for the three stocks open in the Tasman Sea for 3 years.[21] These TACs, particularly for the Louisville Ridge, would represent a significant increase in the catch of orange roughy in the SPRFMO area compared to the average catch in these areas over the past several years in spite of continued uncertainty over the status of orange roughy stocks in the SPRFMO area as repeatedly noted in the report of the Scientific Committee.

For the Louisville Ridge, the SC advice in 2017 has not applied a lower precautionary catch limit proposed in assessments by New Zealand scientists (625 tonnes,[22] which is the combined North, Central and South stock limits – table 1). Instead, it has recommended 1,140 tonnes annually for 2 years, which is not precautionary. The SC advice for catches could be taken from a single stock rather than spread over three stocks in the Louisville Ridge or the three stocks open in the Tasman Sea. This is despite the SC noting that "stocks in the Tasman Sea (Lord Howe Rise, Northwest Challenger Plateau, and West Norfolk Ridge) are estimated to have a higher potential of being depleted".[23] In addition, the SC noted in both areas that "[a] significantly more precautionary approach is recommended if insufficient advancement is made in data collection to support stock assessments for the relevant stocks."[24] Already over a year has passed since these recommendations.

DSCC recommends that, at a minimum, the allowable catch be limited to the average annual catch over the previous 2-3 years until a more reliable determination of sustainable levels of catch can be made.

DSCC welcomes the recommendations in the report of SC-5 on developing biological reference points and harvest control rules and calls for these to be progressed rapidly.[25]

However, the DSCC considers that the lack of recommendations on measures for target non-orange roughy catches (eg alfonsino, bluenose/blue-eye trevalla, and wreckfish) and bycatch and a number of other elements of the SC advice falls short of the commitments to take action established in UNGA resolutions including the most recent resolution 71/123, adopted in 2016 on the basis of a UNGA review of the implementation of previous resolutions.

Non-Orange Roughy Target Species

SPRFMO still does not have in place any measures for alfonsino or bluenose, both targeted fisheries. As the New Zealand annual report notes, in the last year New Zealand undertook bottom trawling for alfonsinos (290 tonnes)[26], as well as mid-water trawling (35 tonnes) and bottom line fishery for bluenose (46 tonnes) and for wreckfish (47 tonnes). These are not insignificant catches. Australia reported 145 tonnes of catch from its longline fishery in the

SPRFMO area, including 23 tonnes of morwong, 35 tonnes of yellowfish kingtail, 22 tonnes of redthroat emperor and 62 tonnes of other species.

These species can be long-lived. The maximum age for bluenose is reported at 71 years, for wreckfish was over 70 years, and jackass morwong a maximum age of over 41 years for males. The risk of catches can impact on these species is highlighted in the decline in bluenose in the adjacent New Zealand EEZ where bluenose abundance "could have declined by more than 50%"[27] and was estimated as low as 17%.[28] New Zealand in 2017 caught 46 tonnes of bluenose in long-line fishing[29] in a fishery that has varied between 20 and 144 tonnes, and 47 tonnes of wreckfish. SC-4 recognized that efforts should be undertaken to assess the impacts on trawl and bottom longline bycatch species, in particular on low productivity species as called for in paragraph 47 of the FAO Guidelines.[30] It is past time for this to be prioritised.

Sharks

SC-6 recommended that identification protocols and biological data collection for deepwater chondrichthyans be strengthened for SPRFMO demersal fisheries. But assessing and prioritising stocks for status assessment within the bottom fisheries tiered assessment framework should be prioritised. The SC noted work done by Australia showing that a number of species to be at "high or extreme vulnerability" to fishing and a lack of information about them.[31] Low 10% observer coverage in longline fisheries may lead to lack of reporting of shark interactions. SC-6 recommended strengthening identification protocols and biological data collection for deepwater chondrichthyans. This, as well as assessment of fishing methods (such as selectivity) as well as categorisation of stocks into the SPRFMO tiered assessment framework should be prioritised.

UNGA resolution 71/123 (2016) called for measures to ensure the long-term sustainability of non-target species.[32] In light of this and its concern with impacts on low productivity fishery resources, particularly where scientific information is uncertain, unreliable or inadequate, the SPRFMO Commission should heed the UNGA's call to ensure that measures are established consistent with the precautionary approach, in particular with regard to vulnerable, threatened or endangered species.[33] DSCC recommends that the Commission additionally:

1. Instructs the Scientific Committee to prioritize further research and advice on conservation measures for non-target species, for a measure to be adopted in the next Commission, in order for a measure to be adopted to minimize, prevent, or eliminate the bycatch of deep-sea (low productivity) species, in particular species as endangered, threatened, vulnerable or near threatened on the IUCN Red List or otherwise likely to qualify as such under IUCN Red List criteria and
2. Amend the list of "other species of concern" in Annex 14 of CMM 02-17(data) to include deep-sea sharks in the SPRFMO Convention Area which are categorized as critically endangered, endangered, vulnerable or near threatened on the IUCN Red List and to also include CITES appendix II relevant species as recommended by SC-4 in Annex 5 of the SC-4 report.

Cook Islands Potting Proposal

DSCC continues to be concerned at the proposal sponsored by the Cook Islands for an exploratory potting fishery over four years for lobster and deepwater crabs on the Foundation Seamount Chain. The Scientific Committee found that the Fisheries Operation Plan only adequately addressed one of seven relevant criteria.[34] The SC6 also queried how the catch limits were estimated and observed that (at 1000 tonnes) it was considerably more than the approximately 450 tonne annual catch limit applying to all Australian SPRFMO fisheries, and

that there were few deepwater lobster fisheries to draw from.[35] DSCC continues to have the concerns that it expressed at last year's Commission: the proposal failed to provide a basis for the proposed catch, instead requesting 6000 tonnes, revised to 3000 tonnes, leading the casual observer to think that the 1000 tonne proposed is therefore an adequate reduction. It is not: the exploratory fishing measure CMM 13-2016 requires a "precautionary and gradual basis"[36] and a precautionary catch limit.[37] Instead, the catch limit is based on virtually no information about the fishery, let alone one incorporating an ecosystem and precautionary approach. SC-6 noted that "no current fishing data" exist to inform the catch limit and that that the criterion the proposal did not address related to the significance of the proposed catch level.[38] The criteria in CMM 13b-2018 have not been met.[39] Accordingly, the review by the Commission due this year in para. 25, "taking into account the advice of the 6th SC or intersessional SC advice, [shall] determine whether the exploratory fishing programme may continue", should, in our submission, be that it should not continue, pending full satisfaction of the criteria in CMM 13-2006 and measure CMM 14b-2018 adopted last year.

Despite the 2nd revision of the Fisheries Operation Plan[40] data on VMEs are still to include an exploratory pot fishing operation including test pot surveys. Instead, prior camera surveys and other surveys not involving non-precautionary catch limits should be required, and the data assessed prior to any fishing, including effective measures to prevent damage to the seabed biota and structure from the pots and lines as well as ghost fishing and other impacts from lost gear.

Independent Performance Review Report

DSCC welcomes the thorough Independent Performance Review Report and the transparent way in which the Panel was established and conducted. We particularly welcome the recommendations on the ecosystem approach, deepwater fishing and transparency, and highlight the following recommendations. In addition to establishing a programme for implementation of all the recommendations, we suggest that these recommendations should also underpin the consideration of the Commission at this session.

Status of Fishery Resources

> **(d) Recommends** that the Commission, Scientific Committee and Members of the Commission accelerate efforts to advance robust stock assessments of Orange roughy and Jumbo flying squid and give priority to collecting the necessary data for stock assessment purposes; and
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> **(e) Notes** that there is little information on the status of non-target and bycatch species or the impact of SPRFMO fisheries on associated or dependent species and **Urges**, as a first step, that the Commission increase data collection in order to improve understanding of the impacts of fishing on associated and dependent species.

Ecosystem Management

> (a)…consideration of deepwater chondrichthyans, seabird mitigation measures for all fisheries, habitat mapping, and examination of climate change impacts;
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> (b) Recommends that the Commission apply a highly precautionary approach to fishery management decisions in the absence of sufficient information to permit the application of an ecosystem approach to management;
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> c) Recommends that the Scientific Committee develop a workplan to progress fisheries management decisions, which takes into account a more holistic ecosystem-based approach. Elements of that workplan could include:
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> > i. A review of available tools and processes to lead to an integrated ecosystem fisheries management approach;

ii. Identification of environmental data that will assist in both applying an ecosystem approach and to assessing the effect of climate change impacts and the subsequent consideration of management decisions; (…)

d) Notes the concerns raised by some Members and CNCPs about known and expected impacts of changing El Niño and La Nina events and potential impacts arising from anthropogenic climate change on the SPRFMO Convention Area, including the impact that such changes may have on major existing and potential target fisheries; and

e) Recommends as an initial step that the Scientific Committee identify the research and data collection required for it to develop advice to inform the Commission on what action may be required to take into account the observed or expected impacts associated with a rapidly changing climate.

Data Collection

d) Recommends that the Commission implement more effective and comprehensive bycatch data collection and reporting, particularly but not limited to dependent and associated species in each fishery and identified species of concern, the collection of sufficient biological data to support the development of reliable stock assessments for all fisheries, and the extension of data collection programmes to include environmental data and other data to assist in estimating potential impacts on non-target species;

d) [sic] **Recommends** that the Scientific Committee review and provide advice on any additional data requirements necessary to support the implementation of an effective VME protocol;

Adoption of Conservation and Management Measures

(d) Recommends that the Commission take urgent action to update the management measures for bottom fisheries, adopt a precautionary approach to the conservation of all deepwater stocks, and implement a SPRFMO-wide approach to the management and protection of VMEs as a matter of priority;

g) Recommends that the Commission and its subsidiary bodies strictly apply the procedural and substantive requirements of CMM 13-2018 for all new and exploratory fishery proposals;

(h) Recommends that the Commission review current efforts to give effect to Article 3(1)(a)(ii) to ensure impacts on non-target and associated or dependent species are taken into account, and Article 3(1)(a)(vii) which requires marine ecosystems to be protected, in particular those ecosystems which have long recovery times following disturbance;

(i) Recommends that the Commission develop conservation and management measures for species of concern, with particular priority to be given to measures to prevent adverse impacts of fishing activities on chondrichthyans;

Transparency

(b) Recommends that the Commission give consideration to developing a process for inviting observers to meetings where their participation would facilitate the meeting; and

(c) Recommends that the Executive Secretary notify observers of the establishment of a review panel under Article 17 of the Convention and of the findings and recommendations of the review panel.

Ecologically or Biologically Sensitive Areas (EBSAs)

One of the items in the Work Program is to evaluate the impacts of fishing activities in EBSAs[41] in 2019.[42] DSCC supports this as at least five areas within the Convention Area may meet the CBD criteria for EBSAs, and in addition, there are significant areas in the Commission Area that have not been assessed,[43] including areas in the south-west Pacific south of 40° S east of New Zealand and south of 46° S in the Tasman Sea.[44]

DSCC Recommendation: The Commission should put into place a process to study the identified EBSAs and consider appropriate management responses, including marine protected areas. To this end, the Commission in its roadmap should make a specific request to the SC to assess the EBSAs in the Commission Area and make recommendations.

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Attachments:

(1) Note: Encounter Protocol Follow-Up Measures

(2) Scorecard

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[1] UNGA Resolution 64/72 (2009) paragraph 119(a): Conduct the assessments called for in paragraph 83 (a) of its resolution 61/105, consistent with the Guidelines, and to ensure that vessels do not engage in bottom fishing until such assessments have been carried out.

[2] UNGA resolution 64/72 paragraph 120: "Calls upon flag States, members of regional fisheries management organizations or arrangements with the competence to regulate bottom fisheries and States participating in negotiations to establish such organizations or arrangements to adopt and implement measures in accordance with paragraphs 83, 85 and 86 of its resolution 61/105, paragraph 119 of the present resolution, and international law, and consistent with the Guidelines, and not to authorize bottom fishing activities until such measures have been adopted and implemented."

[3] At http://www.un.org/Docs/journal/asp/ws.asp?m=A/RES/61/105.

[4] FAO, International Guidelines for the Management of Deep-Sea Fisheries in the High Seas (2009). At http://www.fao.org/docrep/011/i0816t/i0816t00.htm.

[5] FAO Deep Sea Guidelines (2009) 47. Flag States and RFMO/As should conduct assessments to establish if deep-sea fishing activities are likely to produce significant adverse impacts in a given area. Such an impact assessment should address, inter alia:

i. type(s) of fishing conducted or contemplated, including vessels and gear types, fishing areas, target and potential bycatch species, fishing effort levels and duration of fishing (harvesting plan);

ii. best available scientific and technical information on the current state of fishery resources and baseline information on the ecosystems, habitats and communities in the fishing area, against which future changes are to be compared;

iii. identification, description and mapping of VMEs known or likely to occur in the fishing area;

iv. data and methods used to identify, describe and assess the impacts of the activity, the identification of gaps in knowledge, and an evaluation of uncertainties in the information presented in the assessment;

v. identification, description and evaluation of the occurrence, scale and duration of likely impacts, including cumulative impacts of activities covered by the assessment on VMEs and low-productivity fishery resources in the fishing area;

vi. risk assessment of likely impacts by the fishing operations to determine which impacts are likely to be significant adverse impacts, particularly impacts on VMEs and low-productivity fishery resources; and

vii. the proposed mitigation and management measures to be used to prevent significant adverse impacts on VMEs and ensure long-term conservation and sustainable utilization of low-productivity fishery resources, and the measures to be used to monitor effects of the fishing operations.

[6] The SC found that the Fisheries Operation Plan did not adequately address 2 out of 7 relevant criteria for paragraph 8 of CMM 13-2016. The SC also advised that the proposal adequately addressed 1 out of 5 relevant criteria, and partially addressed 4 out of 5 relevant criteria, for paragraph 10 of CMM 13-2016. Further, the SC advised that the proposal partially addressed 2 out of 3 relevant criteria and did not adequately address 1 out of 3 relevant criteria for paragraph 24 of CMM 14b-2018.

[7] Para 166(g).

[8] SC-4 at https://www.sprfmo.int/assets/Meetings/Meetings-2013-plus/SC-Meetings/4th-SC-Meeting-2016/SC04-report/SC-04-FinalReport-Rev1-25Oct2016.pdf. See SC-6 report para 204: The Secretariat clarified to DSCC that there are no benthic species on the list of 'other species of concern' at present, and that there has been some recent work considering expansion of the list.

[9] See Para 100(d): Recommends that the Commission implement more effective and comprehensive bycatch data collection and reporting, particularly but not limited to dependent and associated species in each fishery and identified species of concern, the collection of sufficient biological data to support the development of reliable stock assessments for all fisheries, and the extension of data collection programmes to include environmental data and other data to assist in estimating potential impacts on non-target species.

[10] SC-6 report para. 113.

[11] 61/105 para 83(c)

[12] 61/105 para 83(a)

[13] 61/105 para 83(d)

[14] UNGA resolution 64/72 (2009), paragraph 120.

[15] This is consistent with UNCLOS which provides in article 192 that "States have the obligation to protect and preserve the marine environment" and accordingly provides in article 193 that "States have the sovereign right to exploit their natural resources pursuant to their environmental policies and in accordance with their duty to protect and preserve the marine environment." VMEs and habitat are addressed in article 194.5: "5. The measures taken in accordance with this Part shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life.

[16] Vulnerable marine ecosystems: 14. 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. VME features may be physically or functionally fragile. The most vulnerable ecosystems are those that are both easily disturbed and very slow to recover, or may never recover.

15. The vulnerability of populations, communities and habitats must be assessed relative to specific threats. Some features, particularly those that are physically fragile or inherently rare, may be vulnerable to most forms of disturbance, but the vulnerability of some populations, communities and habitats may vary greatly depending on the type of fishing gear used or the kind of disturbance experienced.

16. The risks to a marine ecosystem are determined by its vulnerability, the probability of a threat occurring and the mitigation means applied to the threat.

Significant adverse impacts

17. Significant adverse impacts are those that compromise ecosystem integrity (i.e. ecosystem structure or function) in a manner that: (i) impairs the ability of affected populations to replace themselves; (ii) degrades the long-term natural productivity of habitats; or (iii) 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.

18. When determining the scale and significance of an impact, the following six factors should be considered:

the intensity or severity of the impact at the specific site being affected;

the spatial extent of the impact relative to the availability of the habitat type affected;

iii. the sensitivity/vulnerability of the ecosystem to the impact;

iv. the ability of an ecosystem to recover from harm, and the rate of such recovery;

v. the extent to which ecosystem functions may be altered by the impact; and

vi. the timing and duration of the impact relative to the period in which a species needs the habitat during one or more of its life-history stages.

19. Temporary impacts are those that are limited in duration and that allow the particular ecosystem to recover over an acceptable time frame. Such time frames should be decided on a case-by-case basis and should be in the order of 5-20 years, taking into account the specific features of the populations and ecosystems.

20. In determining whether an impact is temporary, both the duration and the frequency at which an impact is repeated should be considered. If the interval between the expected disturbance of a habitat is shorter than the recovery time, the impact should be considered more than temporary. In circumstances of limited information, States and RFMO/As should apply the precautionary approach in their determinations regarding the nature and duration of impacts.

[17] For instance, NAFO provides in Article 19.4 of its measure as follows:

Article 19: 4. The Fisheries Commission shall, taking account of advice and recommendations provided by the Scientific Council and the Working Group of Fishery Managers and Scientists, concerning bottom fishing activities, including data and information arising from reports pursuant to Article 20 adopt conservation and management measures to prevent significant adverse impacts on vulnerable marine ecosystems. These may include: i. allowing, prohibiting or restricting bottom fishing activities; ii. requiring specific mitigation measures for bottom fishing activities; iii. allowing, prohibiting or restricting bottom fishing with certain gear types, or changes in gear design and/or deployment; and/or iv. any other relevant requirements or restrictions to prevent significant adverse impacts to vulnerable marine ecosystems.

Northwest Atlantic Fisheries Organization Conservation and Enforcement Measures. NAFO/FC Doc. 12/1 at https://archive.nafo.int/open/fc/2012/fcdoc12-01.pdf.

Similarly, NEAFC provides that 2.2 c. The Secretary shall make an annual report on single and multiple encounters in discrete areas within existing fishing areas to PECMAS. On the basis of an assessment by ICES, PECMAS shall evaluate on a case-bycase basis the information and provide advice to the Commission on whether a VME exists. The advice shall be based on annually updated assessments from ICES of the accumulated information on encounters and PECMAS's advice on the need for action, using FAO guidelines for management of deep-sea fisheries in the high seas as a basis.

Consolidated text of all NEAFC recommendations on regulating bottom fishing.

http://www.neafc.org/system/files/consolidated_bottomfishing_regulations.pdf

[18] E.g. the SC noted that the Commission has been requesting information and guidance on the status of Orange roughy stocks in the SPRFMO Area for a number of years.

[19] E.g. the SC noted that the Commission has been requesting information and guidance on the status of Orange roughy stocks in the SPRFMO Area for a number of years.

[20] SC said that "A significantly more precautionary approach is recommended if insufficient advancement is made in data collection and stock assessments for the relevant stocks within 2 years. The SC recommends that, within this group, the Louisville Central stock should be prioritised for improved data collection and stock assessment." SC Report, para. 100.

[21] SC said that "A significantly more precautionary approach is recommended if insufficient advancement is made in data collection to support stock assessments for the relevant stocks in 3 years. The SC recommend that, within this group, the Lord Howe Rise and Northwest Challenger Plateau stocks should be prioritised for improved data collection and stock assessment.". SC Report, para. 100.

[22] Table 2 in SC5DW15_rev2. At https://www.sprfmo.int/assets/SC5-2017/SC5-DW15-rev2-ORY-assessment-summary.pdf. Average catch over 5 years was 418 tonnes.

[23] SC-5 Report para. 100.

[24] SC-5 Report para. 100.

[25] SC-5 Report para. 83. Following the Discussion, the SC

- Adopted the proposed generalised assessment framework for bottom fisheries to provide direction for future assessment work and speed the committee's processes in developing advice for the Commission.
- Requested Members with bottom fisheries or an interest in finalising the framework to work together to develop proposals for biological reference points and harvest control rules for SPRFMO bottom fisheries.
- Recommended to the Commission that it agrees to the nature and structure of advice on precautionary catch limits for bottom fisheries that will stem from such an assessment framework.
- Requested Members with bottom fisheries to cooperate in the development of a Scoping Analysis for their SPRFMO bottom fisheries.

- Requested Members with bottom fisheries to work towards the development of Management Strategy Evaluations to develop robust Harvest Control Rules for their SPRFMO bottom fisheries.
- Recommended to the Commission that the Committee's Workplan and Roadmap are amended to include the work described above.SC5 Report para. 85.

[26] https://www.sprfmo.int/assets/2018-SC6/Meeting-Documents/SC6-Doc14-New-Zealand-Annual-Report.pdf . Table 3.

[27] Page 116. https://fs.fish.govt.nz/Doc/5400/BNS_FINAL%2008.pdf.ashx

[28] Review of Management Controls for the Bluenose Fishery (BNS 1, 2, 3, 7 & 8) in 2016. MPI Discussion Paper No: 2016/16. Para. 3.1. At file:///C:/Users/Duncan/Downloads/2016-16-Review-of-Management-Controls-for-the-Bluenose-Fishery-.pdf.

[29] https://www.sprfmo.int/assets/2018-SC6/Meeting-Documents/SC6-Doc14-New-Zealand-Annual-Report.pdf, Table 7.

[30] SC-4 Report. Page 12. At https://www.sprfmo.int/assets/Meetings/Meetings-2013-plus/SC-Meetings/4th-SC-Meeting-2016/SC04-report/SC-04-FinalReport-Rev1-25Oct2016.pdf

[31] SC-6 Report para. 56.

[32] UNGA resolution 72/123 para. 190

[33] UNGA resolution 71/123 para. 186.

[34] SC-6 Report para. 234.

[35] SC-6 Report para. 237.

[36] CMM 13-2006, at https://www.sprfmo.int/assets/Fisheries/Conservation-and-Management-Measures/2018-CMMs/CMM-13-2016-Exploratory-Fisheries-8March2018.pdf. Para 1 (objective).

[37] CMM 13-2006 para. 8(c).

[38] SC-5 Report para 241.

[39] CMM 13b-2018 para 24 required that "the Cook Islands will present a full and comprehensive exploratory fishing proposal which conforms, in full, with SPRFMO CMMs and the Convention, in particular the exploratory fishing CMM (13-2016) and the bottom fishing CMM (03-2018), and take into account the SC advice as described in the SC5 report and the SC inter-sessional advice provided in January 2018. The proposal will include the following: a) A detailed and specific proposal and Fisheries Operation Plan that includes formal sampling designs and data collection plans for all phases of the proposed exploratory fishery that conform with CMM13-2016;

b) A description of how the proposed fishing meets the requirements of the Convention and relevant CMMs, including a bottom fishing impact assessment;

c) Propose measures to ensure the long-term viability of the target species, including reproduction;

d) A description of any fishing conducted to date, including effort, catch, and information on measures taken to protect VMEs."

[40] SC6-DW01_rev2: Cook Islands Fisheries Operation Plan for an Exploratory Potting Fishery in the SPRFMO Area. https://www.sprfmo.int/assets/2018-SC6/Meeting-Documents/SC6-DW01-rev2-Cook-Islands-Fisheries-Operational-Plan-v2-compare.pdf

[41] See overview by IDDRI, "Ecologically or biologically significant marine areas (EBSAs): the identification process under the Convention on Biological Diversity (CBD) and possible ways forward. At http://www.iddri.org/Publications/Collections/Idees-pour-le-debat/WP1712_ED_EBSAs.pdf. See CBD Decision XI/17 (2012). Marine and coastal biodiversity: Ecologically or biologically significant marine areas. At http://www.cbd.int/cop/cop-11/doc/2012-10-24-advanced-unedited-cop11-decisions-en.pdf.

[42] SC-6 Report, Annex 5, SC Proposed Multi-Annual Work Plan.

[43] At the third SC meeting, the Secretariat introduced information received from the Secretariat of the Convention on Biological Diversity (CBD) regarding five areas within the Convention Area that meet the CBD criteria for EBSAs.

[44] Secretariat of the Convention on Biological Diversity (2014) Ecologically or Biologically Significant Marine Areas (EBSAs). Special places in the world's oceans. Volume 1: Western South Pacific Region. 104 pages.

23 December 2018

Re: Bottom Fishing Measure

Dear Delegate

We are writing to you to express our concern at the draft bottom fishing measure, as it has been communicated to us, and to seek your support for a robust measure which will be consistent with the SPRFMO Convention, international law, the applicable provisions of United Nations General Assembly resolutions and the FAO Guidelines for the Management of Deep-Sea Fisheries in the High Seas.

In brief we have the following concerns:

1. In regard to preventing significant adverse impacts on VMEs, while a lot of work has gone into developing the 'Zonation' model used as the basis for the proposal, the model only used some species that would qualify as VME taxa in the SPRFMO area, and not other taxa (such as xenophyophores, bryozoans and brachiopods) which are considered VME taxa by other RFMOs.

These taxa are not single species but species groups. Extinction of single species could occur and the criteria would not address this.

In addition, the model is untested in practice, i.e. it needs to be properly ground truthed, and is not in itself a management measure. Rather it indicates where higher levels of vulnerable species may be expected to be found – i.e. where VMEs are likely to occur based on the best scientific information available and included using predictive modelling. This is an approach that is recognized as being useful by the UNGA,[1] but, in addition to the need for direct benthic observations, the model does not in itself provide a measure which will prevent significant adverse impacts (SAIs) on vulnerable marine ecosystems (VMEs).

The appropriate management response to the identification of areas where VMEs are likely to occur has been firmly established in UNGA resolution 61/105, paragraph 83 (and in subsequent resolutions) as follows:

> 83(c) "In respect of areas where vulnerable marine ecosystems…are known to occur or are likely to occur based on the best available scientific information, to close such areas to bottom fishing and ensure that such activities do not proceed unless conservation and management measures have been established to prevent significant adverse impacts on vulnerable marine ecosystems".

In other words, the internationally agreed management response is, first and foremost, a closure of the area, unless and until an impact assessment has determined that it is possible to conduct bottom fishing in a VME area and not cause significant adverse impacts. Then, to establish an appropriate CMM to manage the fishery to prevent SAIs on VMEs in the area, and finally to put into place a move-on rule as a back stop in case the assessment missed something important. Regarding the latter point, the move-on rule is not a management measure that will "prevent" significant adverse impacts. Rather it is an important backstop designed to prevent further degradation of a VME once an impact or impacts have already occurred as called for by the UNGA in paragraph 83 of resolution 81/105 and subsequent resolutions.

[1] As indicated in paragraph 181 of resolution 71/123, adopted on the basis of the 2016 review of the implementation of previous resolutions

2. The proposal from New Zealand and Australia would only establish a move-on rule and even this has serious problems. While the proposal indicates that an encounter with a VME may result in the temporary closure of an area, it is not clear whether and how a determination would be made to maintain the closure or reopen the area. At present, it is suggested that the SC determine whether the encounter is "consistent" with the zonation model.

This is an inappropriate test. While the encounter potentially adds data to the model it would be neither consistent nor inconsistent with the model as the model predicts areas of high VME value which have been fished in the past and which New Zealand proposes to be open to bottom fishing. Finding a VME in this area would be 'consistent with the model' but keeping the area open would be inconsistent with the obligation to prevent SAIs on VMEs. The task of SPRFMO should be to close the area, undertake an evaluation of the area through the Scientific Committee, and put into place measures to prevent significant adverse impacts. The UNGA resolutions and SPRFMO Convention makes it clear not only that the precautionary approach and ecosystem approach must be applied, but that significant adverse impacts on VMEs must be prevented: that is the required goal and the management action should ensure that no further damage occurs to VMEs already adversely impacted.

An equally serious problem with the proposed move-on rule are the threshold levels proposed to trigger the move-on rule that would be established under the encounter protocol. The 'individual' threshold levels are for the most part much higher than those New Zealand has had in place for the past ten years. The threshold level proposed for the main reef building coral habitat forming VME indicator taxa in the region – stony corals (Scleractinia), commonly found on seamounts in the SPRFMO area - is 250 kilograms of bycatch observed in trawl gear. This is an extremely high threshold level that, if implemented, would allow continued widespread degradation of coral ecosystems across the western SPRFMO convention area. Moreover, this threshold level is far higher than the threshold levels established by any other RFMO for coral bycatch to trigger a move-on rule. Trawls are not designed to sample VMEs so much of the coral could be crushed or damaged and left on the sea-floor.

Most RFMOs have established a threshold level of no higher than 50 kilograms of coral bycatch observed in bottom trawl gear. Threshold levels for other VME indicator taxa as recommended by the 6th Scientific Committee report, such as 15 kg of Gorgonacea, 5 kg of Antipatharia, 40 kg of Actinaria and 60 kg of Alcyonacea, are excessively high and would be of limited value in preventing SAIs. The figures are based on the use of the 99th percentile in a review of the amount of VME indicator taxa reported taken as bycatch in the 2,820 bottom trawl tows (32% of all tows) by New Zealand vessels in the SPRFMO area since 2007 in which VME taxa were recorded in the nets. By comparison we would note that NAFO uses the 75th percentile of recorded bycatch in research trawl surveys to identify an area as a VME.

3. Finally, for the purpose of this brief, we have focused primarily on the VME protection aspects of the proposed measures. However, we would note that even after several decades of bottom fishing on the high seas of what is now the SPRFMO regulatory area, there are still no agreed stock assessments for most of the stocks of species targeted in the bottom fisheries, and few if any measures to minimize bycatch, particularly for threatened or endangered species. This again is inconsistent with the UNGA resolutions, in particular resolution 64/72, paragraph 119(d) and resolution 71/123, paragraph 186 and the FAO Guidelines calling *inter alia* for the management of deep-sea fisheries to be based on stock assessments, rebuilding of depleted stocks, assessment of the impacts of fishing on low productivity fishery resources, and that precautionary measures be established, in particular with regard to vulnerable, threatened or endangered species.

Recommendations

- New Zealand and Australia should be commended by the Commission for the work on the modelling but require that it first be ground truthed to serve as the basis for proposing or establishing areas open to bottom fishing.
- At a minimum, all areas where VMEs are known to occur or where the model indicates VMEs are likely to occur should be closed to bottom trawl fishing, regardless of whether they have been previously fished, until an impact assessment has been done to determine whether bottom fishing can be managed to prevent significant adverse impacts on any VMEs in the area and appropriate conservation and management measures established accordingly.
- The assessments should take into account cumulative impacts, including impacts on VMEs from previous fishing and the potential for recovery of VMEs.
- Areas where recovery or regeneration of VME indicator taxa is known or likely to occur should be closed to allow recovery of VMEs.
- The move-on rule should trigger an immediate closure of an area and the area remain closed until the SC and SPRFMO Commission can determine that reopening the area would not lead to SAIs on VMEs.
- The threshold levels should be significantly reduced to precautionary levels to provide protection for VMEs, using a far lower percentile – from the 50th to 75 percentile- recognizing even these are somewhat arbitrary.
- As a provisional measure, the Commission should urge New Zealand to close the areas where it currently permits bottom fishing to occur, to bottom trawl fishing where the modelling predicts the likely occurrence of VMEs, irrespective of whether these areas have been previously fished, pending the adoption of an amended CMM on bottom fishing.
- Measures should be developed to prevent SAI caused by other bottom fishing methods eg bottom long-lining.

The UN General Assembly will again review the implementation of the UNGA resolutions on bottom fisheries in areas beyond national jurisdiction in 2020 and it is important for both New Zealand and SPRFMO that the measures in place for the bottom fisheries on the high seas in the South Pacific be managed consistent with the commitments established in the UN resolutions and obligations under international law. It is all the more important for New Zealand and SPRFMO to deliver on the biodiversity commitments made through the UNGA resolutions in light of the current negotiations underway for a new implementing agreement under UNCLOS for the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction. In addition, the above analysis and recommendations are consistent with the implementation of Sustainable Development Goal 14 to "conserve and sustainably use the oceans, seas and marine resources for sustainable development", and specifically SDG 14 target 14.2 to "by 2020, sustainably manage, and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience and take action for their restoration, to achieve healthy and productive oceans." Here again, States worldwide have agreed on avoiding significant adverse impacts, as well as taking action for restoration, as well as the goal of achieving healthy and productive oceans.

We hope this is helpful. Duncan Currie at duncanc@globelaw.com or Matt Gianni matthewgianni@gmail.com, will be happy to answer any queries.

We attach a brief which we hope will assist.

Yours sincerely

Duncan Currie and Matt Gianni for Deep Sea Conservation Coalition

Note: Encounter Protocol Follow-Up Measures

Contents

Introduction

This Note is written to inform Members and primarily concerns measures to be taken following the triggering of the encounter protocol. DSCC understands that it is proposed that where the thresholds are exceeded:

1. The fishing vessel would be required to stop bottom (including presumably midwater) trawling within an encounter area (believed to be defined as 1 nautical mile (NM) either side and each end of the trawl track and 1 NM at the ends) until the Scientific Committee (SC) has assessed the encounter and has advised that the encounter was not inconsistent with the Zonation model.
2. If the SC concludes that the encounter was not inconsistent with the Zonation model, the encounter area suspension is to be lifted.

It is to be noted that a single encounter does not of itself provide a rationale for suspension. DSCC considers that this approach is invalid for a number of reasons:

1. It is not mandated by the UNGA resolutions or FAO Deep Sea Guidelines and in fact is contrary to them. The goal of predicting VMEs is to protect VMEs which are thereby predicted, not to then fail to protect them and instead only to protect 'unpredicted' VMEs;

2. It is inconsistent with the SPRFMO Convention.
3. It takes an encounter protocol designed to identify VMEs (with very high thresholds, already considered by DSCC to be too high and extreme), and using the outcome of that (encounter) for a different purpose, being assessment whether it is inconsistent with the Zonation model. Moreover, the Zonation model takes a square-by-square approach rather than taking an ecosystem-wide approach. One possible effect of this is that heavy damage to the benthos in one square could have consequences to adjacent squares on the same seamount.
4. The Zonation model has not been properly ground-truthed (eg use of cameras), so rather than being assessed for consistency, the encounter should be factored into the model as new data to improve the model.
5. The Zonation model was not designed to avoid significant adverse impacts (SAIs) on VMEs, but rather to identify areas of low biodiversity, where fishing can take place. The proposed approach has now shifted from identifying areas where fishing can take place, according to the model with lower impact on VMEs than in other areas, but still avoiding SAIs on VMEs, to one where fishing can take place regardless. This approach seems to rely on the unarticulated, untested and unmandated theory that the models in themselves prevent SAIs on VMEs by virtue of the (untested and unarticulated) spatial management approach.
6. The approach also ignores cumulative impacts on VMEs and taxa which may not trigger the move-on rule, and other bottom fishing methods not included eg bottom longlining.

Recommendation

Instead, the CMM should mandate the Scientific Committee to examine the encounter, and undertake further investigations as necessary, with the goal of establishing whether the encounter shows the presence of a VME, and if it does, to recommend permanent closure of the area to bottom fishing, or otherwise take measures to prevent significant adverse impacts on that VME.

On the encounter protocol thresholds, the Scientific Committee draft report:

> **Agreed** that the taxon-specific weight thresholds are:
>
> for individual VME indicator taxa referred to in the first component would be 50 kg of Porifera, 15 kg of Gorgonacea, 250 kg of Scleractinia, 5 kg of Antipatharia, 40 kg of Actinaria and 60 kg of Alcyonacea.
>
> for the VME indicator taxa referred to in the biodiversity component, their associated qualifying weights for the biodiversity component, would be 5 kg of Porifera, 1 kg of Gorgonacea, 5 kg of Scleractinia, 1 kg of Antipatharia, 5 kg of Actinaria, 1 kg of Alyonacea, 1 kg of Stylasteridae, 1 kg of Pennatulacea, 1 kg of Crinoidea, 1 kg of Brisingida.

Firstly, DSCC have already strongly submitted to the Scientific Committee that the 99th percentile is not precautionary. The SC noted that:

> The SC discussed which of the potential percentiles identified in the analysis would be appropriate to apply as a high threshold, as recommended by SC5. Although the selection of a particular threshold from the list of candidate thresholds identified by the analysis is somewhat arbitrary, there was agreement that the 99th percentile was more likely to indicate that the threshold represented evidence a VME had potentially been encountered than a lower threshold (particularly for longer duration tows). DSCC observed that other

> RFMOs use lower percentiles, for example in NAFO a percentage of 75% is used for bycatch in research trawl surveys.

Further the SC:

- **Noted** that a data-informed approach has been used to identify a range of candidate thresholds, **but the selection of a final VME taxa threshold for bottom trawls is a somewhat arbitrary process**;
- **Noted** that **insufficient data** on VME distribution and density and on trawl catchability exist to apply more sophisticated methods; *[our emphasis].*

Secondly, we note that the suggested protocol envisages that up to 250 kg of Scleractinia (stony corals) can be brought up in the net without triggering the move-on rule. This in spite of the widespread recognition that commercial bottom trawl nets are not designed to catch and retain corals or other VME taxa, and their 'efficiency' at catching and retaining corals and other VME species is likely to be quite low and much of the coral would either be damaged or crushed on the ocean bottom, pass through a net or fall through a net on its way to the surface during haulback. The proposed measure which could suggest that up to 250 kg of stony corals can be caught and yet fishing can be resumed on the same feature is far from precautionary.

This paper focuses on the management (policy) question of what steps are to be taken following the triggering of the encounter protocol.

To ascertain this, it is necessary to examine the international provisions; notably the UNGA resolutions and FAO Guidelines.

The SPRFMO Convention

The objective of this Convention is, through the application of the precautionary approach and an ecosystem approach to fisheries management, to ensure the long-term conservation and sustainable use of fishery resources and, in so doing, to **safeguard the marine ecosystems** in which these resources occur (emphasis added). Consistent with this, an ecosystem approach is mandated by Article 3.2(b):

> b) An ecosystem approach shall be applied widely to the conservation and management of fishery resources through an integrated approach under which decisions in relation to the management of fishery resources are considered in the context of the functioning of the wider marine ecosystems in which they occur to ensure the long-term conservation and sustainable use of those resources and in so doing, safeguard those marine ecosystems.

Similarly, the precautionary approach is set out in Article 3.2(a):

> (a) The precautionary approach as described in the 1995 Agreement and the Code of Conduct shall be applied widely to the conservation and management of fishery resources in order to protect those resources and to preserve the marine ecosystems in which they occur, and in particular the Contracting Parties, the Commission and subsidiary bodies shall:
>
> (i) be more cautious when information is uncertain, unreliable, or inadequate;
>
> (ii) not use the absence of adequate scientific information as a reason for postponing or failing to take conservation and management measures; and
>
> (iii) take account of best international practices regarding the application of the precautionary approach, including Annex II of the 1995 Agreement and the Code of Conduct.

Conservation and management measures adopted by the Commission, under Article 20.1(d), must

> (d) protect the habitats and marine ecosystems in which fishery resources and non-target and associated or dependent species occur from the impacts of fishing, including measures to prevent significant adverse impacts on vulnerable marine ecosystems and precautionary

> measures **where it cannot adequately be determined whether vulnerable marine ecosystems are present or whether fishing would cause significant adverse impacts on vulnerable marine ecosystems. (emphasis added)**

The task of the Scientific Committee is set out in Article 10.2, which provides that the functions of the Scientific Committee shall be to:

> (c) provide advice and recommendations to the Commission and its subsidiary bodies on the impact of fishing on the marine ecosystems in the Convention Area including advice and recommendations on the identification and distribution of vulnerable marine ecosystems, the likely impacts of fishing on such vulnerable marine ecosystems and **measures to prevent significant adverse impacts on them;**

DSCC strongly suggests that these provisions, require the SC and the Commission to provide advice and recommendations, and take measures, respectively, to: prevent significant adverse impacts on VMEs; apply the precautionary approach, when scientific information is uncertain; and the ecosystem approach, to consider the wider ecosystems and safeguard those ecosystems.

Finally, we observe that these provisions are consistent with UNCLOS Article 192, under which States have the obligation to protect and preserve the marine environment and Article 194.5 under which the measures taken shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life.

United Nations and FAO Provisions

UNGA Resolution 61/105 (2006)

UNGA resolution 61/105 (2006) requires four steps in para 83.

(a) Assessment whether individual bottom fishing activities would have SAIs on VMEs, and to ensure that if it is assessed that these activities would have significant adverse impacts, they are managed to prevent such impacts, or not authorized to proceed;
(b) Identify VMEs and determine whether bottom fishing activities would cause SAIs on the VMEs;
(c) Where VMEs are known to occur or are likely to occur, to close the areas to bottom fishing, and keep them closed unless measures are established to prevent SAIs on VMEs; and
(d) Have an encounter protocol so that appropriate measures can be adopted.

Following the resolution, the FAO Deep Sea Guidelines were developed.

FAO Deep Sea Guidelines

The FAO Deep Sea Guidelines set out what should be done as a result of an encounter:

> 69. States and RFMO/As should, in light of reports (as referred to in paragraph 67), and in accordance with developed protocols and paragraphs 42 to 53, adopt or modify management measures, appropriate for the DSF concerned, in regard to the relevant site or area to prevent significant adverse impacts on the VME.
>
> 70. States and RFMO/As should, based on the results of assessments carried out pursuant to paragraphs 42 to 53, adopt conservation and management measures to achieve long-term conservation and sustainable use of deep-sea fish stocks, ensure adequate protection and prevent significant adverse impacts on VMEs. These measures should be developed on a case-by-case basis and take into account the distribution ranges of the ecosystems concerned.
>
> 71. Conservation and management measures pursuant to paragraph 70, may include:

> i. effort controls and/or catch controls;
>
> ii. temporal and spatial restrictions or closures;
>
> iii. changes in gear design and/or deployment or operational measures (as discussed in the 2006 Bangkok Expert Consultation), including:
>
> • reduction of contact between the fishing gear and the seabed,
>
> • use of effective bycatch reduction devices, and
>
> • use of technical measures to eliminate or minimize ghost fishing; or
>
> iv. other relevant measures necessary to achieve the objective of paragraph 70.
>
> 72. Some of the above management measures for DSFs, such as effort, catch and temporal controls, may be limited in their effectiveness for the protection of some types of VMEs. Effective protection of such VMEs will usually require complementary measures, such as gear restrictions and spatial controls, as appropriate.

Significant Adverse Impacts are defined in the Guidelines:

> 17. Significant adverse impacts are those that compromise ecosystem integrity (i.e. ecosystem structure or function) in a manner that:
>
> (i) impairs the ability of affected populations to replace themselves;
>
> (ii) degrades the long-term natural productivity of habitats; or
>
> (iii) 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.
>
> 18. When determining the scale and significance of an impact, the following six factors should be considered:
>
> i. the intensity or severity of the impact at the specific site being affected;
>
> ii. the spatial extent of the impact relative to the availability of the habitat type affected;
>
> iii. the sensitivity/vulnerability of the ecosystem to the impact;
>
> iv. the ability of an ecosystem to recover from harm, and the rate of such recovery;
>
> v. the extent to which ecosystem functions may be altered by the impact; and
>
> vi. the timing and duration of the impact relative to the period in which a species needs the habitat during one or more of its life-history stages.
>
> 19. Temporary impacts are those that are limited in duration and that allow the particular ecosystem to recover over an acceptable time frame. Such time frames should be decided on a case-by-case basis and should be in the order of 5-20 years, taking into account the specific features of the populations and ecosystems.

Clearly:

(1) the conservation measure must have as its objective to "ensure adequate protection and prevent significant adverse impacts on VMEs." (para 71)

(2) Significant adverse impacts are those that compromise ecosystem integrity (i.e. ecosystem structure or function) in the manner described (para 17)

(3) the assessment and imposition of appropriate measures following an encounter must follow the Guidelines, in order to prevent significant adverse impacts.

UNGA Resolution 64/72 (2009)

Resolution 64/72 called on (para 113) States to immediately and consistent with the precautionary approach and ecosystem approaches to apply the FAO Guidelines, and protect VMEs, "recognizing the immense importance and value of deep sea ecosystems and the biodiversity they contain," reaffirmed (para 114) the operational paragraphs of resolution 61/105 and emphasised the need for full implementation, and called on States to (para 119) establish and implement encounter protocols, including definitions of what constitutes evidence of an encounter with a VME, in particular threshold levels and indicator species and

importantly and called on (para 120) States not to authorize bottom fishing activities until the stated measures have been adopted and implemented.

UNGA Resolution 66/68 (2011)

Resolution 66/68 followed the 2011 bottom fishing workshop emphasised (para 129) individual, collective and cumulative impacts, and recognized (para 131) that different types of marine scientific research, including seabed mapping carried out in different parts of the oceans, have resulted in identification of areas where VMEs occur and in the adoption of conservation and management measures to prevent significant adverse impacts on such ecosystems, including the closure of areas to bottom fishing in accordance with paragraph 119 (b) of resolution 64/72. The UNGA encouraged (132), RFMO/As and flag States to consider the results available from marine scientific research, including those obtained from seabed mapping programmes concerning the identification of areas containing VMEs, and to adopt conservation and management measures to prevent significant adverse impacts from bottom fishing on such ecosystems, consistent with the Guidelines, or to close such areas to bottom fishing until such conservation and management measures are adopted, as well as to continue to undertake further marine scientific research.

UNGA Resolution 71/123 (2017)

Following the 2016 UNGA bottom fishing review, the UNGA passed resolution 71/123, which called for:

> 180 (a) To use, as applicable, the full set of criteria in the Guidelines to identify where vulnerable marine ecosystems occur or are likely to occur as well as for assessing significant adverse impacts;
>
> (c) To ensure that conservation and management measures adopted by States and regional fisheries organizations and arrangements are based on and updated on the basis of the best available scientific information, noting in particular the need to improve effective implementation of thresholds and move-on rules; and
>
> 181. Recognizes that different types of marine scientific research, such as, inter alia, seabed mapping, mapping of vulnerable marine ecosystems based on information from the fishing fleet, on-site camera observations from remote vehicles, benthic ecosystem modelling, comparative benthic studies and predictive modelling have resulted in identification of areas where vulnerable marine ecosystems are known or are likely to occur and in the adoption of conservation and management measures to prevent significant adverse impacts on such ecosystems, including the closure of areas to bottom fishing in accordance with paragraph 119 (b) of resolution 64/72; and
>
> 182 Encouraged RFMO/As and Sates to consider the results available from different types of marine scientific research, including, as appropriate, those listed in paragraph 181 above, concerning the identification of areas containing VMEs, and to adopt conservation and management measures to prevent significant adverse impacts from bottom fishing on such ecosystems, consistent with the Guidelines, or to close such areas to bottom fishing until such conservation and management measures are adopted, as well as to continue to undertake further marine scientific research, for the above-mentioned purposes, in accordance with international law, as reflected in Part XIII of the Convention;

As such, the UNGA has reinforced both the FAO Deep Sea Guidelines, which define SAIs, and has repeatedly and as recently as last year stated that the outcome of mapping and other scientific research is to prevent SAIs from bottom fishing “on such ecosystems”, or close

such areas to bottom fishing until "such" conservation and management measures are adopted.

The 6th Scientific Committee

At the recent 6th Scientific Committee, New Zealand presented SC06-DW09, "Methods for deriving thresholds for VME encounter protocols for SPRFMO bottom fisheries", which presents an overview of the process and analyses used to develop potential threshold weights that could be used to inform a VME encounter protocol for bottom trawls within the SPRFMO Convention Area.

That paper noted that:

> "In its report to the Commission in 2013, SC-01 endorsed the following characteristics of effective move-on rules…
>
> …Once evidence of a VME is encountered using an agreed protocol, move-on areas should be closed to fishing by all demersal fishing vessels until further analysis or evidence indicates that area does not contain VMEs."
>
> However, SC-01 also emphasized in the following paragraph that:
>
> Move-on rules should be considered to be temporary measures, providing precautionary protection for areas showing evidence of VMEs until objectively planned spatial closures can be implemented to protect known and highly bio-diverse VME areas."

This shows that the intent of the move-on rule is to lead to "objectively planned spatial closures." That is consistent with the UNGA resolutions.

The NZ paper went on to say that "For instance, a move-on rule can put a quick stop to fishing in a place where large amounts of sensitive and structural benthic fauna are recovered when none or little was predicted by the VME habitat suitability models used to design the spatial management regime."

However, this example is not supported by any authority. Nowhere is the need to protect VMEs predicated on only being where they were not predicted. Quite the opposite is the case: the goal of predictive modelling has been stated to identify VMEs and avoid SAIs on them.

The paper went on to state that: (page 26)

> The triggering by empirical evidence of an interaction with VME indicator taxa, does not in itself mean the actual presence of a VME. Stakeholder consultation highlighted the need for a formalized process for the review of move-on events, closed areas and VME designation, and related management actions. It is important to highlight the difference between a move-on rule that offers a quick, short-term conservation intervention to limit the immediate impact on areas that may support important VME areas *despite the model predictions*, and *VME designation process, which is a deliberate, long-term assessment, incorporating all available scientific information, followed by appropriate management responses. (emphasis added)*

It is important to separate the process of identifying the actual presence of a VME with the management actions. The former is a scientific assessment; the second is a management response to the assessment. Obviously, the triggering of an encounter protocol is strong evidence of a VME, especially with a very high threshold. Other steps may be taken to confirm this, such as cameras. But the process of recognising (rather than designating) a VME is to be followed by the management response, which has been repeatedly stated by the UNGA to be to close the area to bottom fishing, unless the measure can otherwise prevent SAIs on that VME.

The paper then goes on to discuss management responses:

> Once a move-on rule is triggered and an area closed to fishing, there are (at least) two possible approaches to future treatment of the area. First, the area could be automatically re-opened to fishing unless the *purportedly surprising* evidence of VMEs (notwithstanding

> the model predictions) was reviewed and found (by SC) to be *genuinely surprising* and, in fact, suggested that the *VME habitat suitability models were misleading*. This broad approach is currently used by both Australia and New Zealand for their SPRFMO bottom fisheries, although the implementation details differ. Alternatively, an area could remain closed until such time as a review concluded that the area did not contain *unexpected* areas of VMEs. We think that, because of the presumption of continuing closure, this approach would require SC to recommend re-opening particular areas to the Commission. This broad approach is applied by CCAMLR after move-ons are triggered. Choosing between these approaches is not a science issue, but SC-06 might like to discuss the practicality and operational feasibility of different approaches. *(emphasis added)*

However, this paragraph confuses the issue of the model and its validity: they suggest the test be that the finding is "genuinely surprising and, in fact, suggested that the VME habitat suitability models were misleading." Again, the UNGA resolutions have never and do not contemplate or permit only protecting 'unpredicted' VMEs: again, the purpose of predicting VMEs is to protect them – whereas the paper (and proposed approach) is exactly the reverse: a predicted VME is not to be protected, it seems, and in fact if it is said to be predicted it is to be reopened to bottom fishing. This is completely contrary to the resolutions.

However, the authors do acknowledge that the management response is not a science issue.

To reiterate: There is nothing in the UNGA resolutions or FAO Guidelines to suggest that a valid response to the resolutions and guidelines is to open areas to bottom fishing and to disregard any encounter – in effect, allow the destruction of VMEs – on the basis that the model on which the area was opened allowed for the existence, and subsequent damage to or destruction, of VMEs.

In fact, the opposite is the case, as is also shown by the FAO Guidelines. As was concluded by the above survey of the FAO Guidelines: (1) the conservation measure must have as its objective to "ensure adequate protection and prevent significant adverse impacts on VMEs"; (2) Significant adverse impacts are those that compromise ecosystem integrity (i.e. ecosystem structure or function) in the manner described (para 17); and (3) the assessment and imposition of appropriate measures following an encounter must follow the Guidelines, in order to prevent significant adverse impacts.

Conclusion

The utility of the Zonation model must be to predict where VMEs may and may not or 'are likely to' occur. But the consequence of this is not that if a VME nevertheless occurs, it is "consistent" with the model, and it can be damaged or destroyed. That is a *non-sequitur*. The consequence must be that the triggering of the encounter protocol shows, at least *prima facie*, that a VME exists, and further investigations must take place (such as camera observations), then, if confirmed to be a VME, following the FAO Guidelines and UNGA resolutions, should be closed to fishing, unless somehow a conservation measure can avoid SAIs on that VME.

Instead, the CMM should mandate the Scientific Committee to examine the encounter, and undertake further investigations as necessary, with the goal of establishing whether the encounter shows the presence of a VME, and if it does, to immediately close the area to bottom fishing, or otherwise take measures to prevent significant adverse impacts on that VME.

DSCC Scorecard: Current Proposals to SPRFMO

Consistency with UNGA resolutions and FAO Guidelines

Object	**Provision – UNGA etc**	**Proposed Measure Score**	**Para**	**Comment**
Sustainable exploitation of target fish stocks	61/105 para 80 64/72 para 119(d) 71/123 (2016) para 186			
	Conduct stock assessments for target species to determine sustainable levels of catch. 61/105 para 80 64/72 para 119(d) 71/123 (2016) para 186	X	Prop 16	Part (data poor) 1. Area assessments only of orange roughy; stock assessments scheduled for 2019-2021 (SC workplan) – for example the Louisville is three stocks but only one catch limit is proposed. 2. Default should be 0 (Current proposal: 10 Until the Scientific Committee recommends precautionary catch limits, the catch of all other target and non-target fish species in the Evaluated Area shall be limited to a level that does not exceed the annual average catch levels of that Member or CNCP over the period 1 January 2002 to 31 December 2006.”
	Rebuild depleted stocks 71/123 (2016) para. 186	X	None	No plan for rebuilding depleted stocks – target or non-target Prop 16:

Bycatch measures	64/72 119(d)	X	21	Prop 3 para 21 Prop 16: paras 11, 12: No measures; reviews only
	71/123 para 186 Be precautionary in particular with vulnerable, threatened or endangered species	X		No – Scientific Committee scrutiny not substitute for precautionary measures: no such measures in proposal.
VMEs				
Identify areas where VMEs are known or likely to occur and…	UNGA 61/105 83 (b)	Y but	17	Identifies areas where VMEs are known or likely to occur based on predictive modeling; however, not all VME indicator species included in the modeling and VME indicator species list needs updating. Not all modelling suggestions were undertaken. No follow up e.g. drop cams, video surveys to identify areas.
…close these areas to bottom fishing unless management measures are in place to prevent SAIs	UNGA 61/105 83 (c)	X	17	No - Allows areas where the model indicates VMEs are known or likely to occur to remain open to fishing if previously fished. "Naturalness layer" never removed despite DSCC requests. No measures to prevent SAIs.
Cease fishing where VME encountered; report measures so appropriate measures can be implemented (move-on rule)	UNGA61/105 83(d)	X	30	No – Move-on rule inadequately applied: no direction to SC to avoid SAIs. Inappropriately directs that one encounter not itself reason to stay closed.
	Based on EIA 64/72 119 (c)	X	-	No – only based on analysis of observer records; not all species included. New Zealand

				assessment has not been updated for nearly 10 years.
	Establish appropriate encounter protocols based on best available scientific information and consistent with Guidelines.(119(c)	X	Annex 5	Replaces previous threshold levels with much higher threshold levels of VME bycatch species before 'encounter' is defined to occur. Used 99% Inconsistent with Guidelines e.g. para 68 In designing such protocols and defining what constitutes an encounter, States and RFMO/As should take into account best available information from detailed seabed surveys and mapping, other relevant information available for the site or area, and other conservation and management measures that have been adopted to protect VMEs pursuant to paragraphs 70 and 71.
	(c): to improve effective implementation of thresholds and move-on rules 71/123 para 180	X	33	No: Only require assess if consistent with Zonation Model – no requirement to prevent SAIs on VMEs. Cf. FAO Guidelines 67. States and RFMO/As should, in light of reports (as referred to in paragraph 67), and in accordance with developed protocols and paragraphs 42 to 53, adopt or modify management measures, appropriate for the DSF concerned, **in regard to the relevant site or area to prevent significant adverse impacts on the VME.**
Prior impact Assessments of bottom fisheries				
Assess whether individual bottom fishing activities	61/105 83 (a) 64/72 119 (a)	X	24	No - Formally exempts existing bottom fisheries from Impact Assessments.

would have significant adverse impacts on vulnerable marine ecosystems and ensure that they are managed to prevent such impacts or not authorized to proceed	Consistent with UN FAO Guidelines paras 47, 42, & 16-20.			
Implement measures or else not authorize bottom fisheries to proceed	64/72 para 120	X	-	No

Discussion

Since 2006, SPRFMO Members and CNCPs, through the adoption of a series of United Nations General Assembly (UNGA) resolutions,[1] to manage deep-sea fisheries on the high seas to protect biodiversity and ensure the sustainable catch of deep-sea species. Specifically, they committed to manage deepwater fisheries on the high seas to ensure:

1. Sustainable fisheries for target deep-sea species, including conducting stock assessment to determine sustainable levels of catch and rebuilding depleted fish stocks;

2. Minimal impacts on bycatch species, being particularly precautionary regarding the bycatch of vulnerable, threatened or endangered species and ensure the long-term;

3. Protection of deep-sea benthic biodiversity, such as coral reefs associated with seamounts and other underwater features, through managing fisheries to prevent "significant adverse impacts" (SAIs) on vulnerable marine ecosystems (VMEs).

To protect VMEs, UNGA resolutions 61/105 (2006), 64/72 (2009) and subsequent resolutions require essentially 4 steps:

1. Impact Assessments: To ensure that vessels do not engage in bottom fishing until impact assessments have been conducted to determine whether bottom fishing would have significant adverse impacts (SAIs) on vulnerable marine ecosystems (VMEs); and that bottom fisheries are managed to prevent such impacts or not authorized to proceed;

2. Identify VMEs: To identify areas where VMEs are known or likely to occur;

3. Closures: To close areas where VMEs are known or likely to occur, unless or until conservation and management measures are in place to prevent SAIs on VMEs;

4. Move-On Rule: To require vessels to cease bottom fishing in an area where VMEs are encountered during the course of fishing operations (e.g. deepwater corals or sponges are observed in the fishing gear when it is brought back aboard), and report the encounter so that appropriate conservation and protection measures can be adopted for the site.

5. Prohibit bottom fishing unless or until the above measures are adopted and implemented.

Resolution 61/105 was followed by intergovernmental negotiations to develop International Guidelines for the Management of Deep-Sea Fisheries in the High Seas - the FAO Guidelines.[2] The FAO Guidelines establish internationally agreed criteria for the identification of VMEs (uniqueness, rarity, fragility, etc)[3], the content of required impact assessments (e.g. mapping of areas to determine where VMEs are known or

[1] Including UNGA resolution 61/105 (2006), 64/72 (2009), resolution 66/68 (2011), resolution 71/123 (2016).

[2] International guidelines for the management of deep-sea fisheries in the high Seas

[3] Para. 42.

likely to occur),[4] and determining significant adverse impacts.[5] The FAO Guidelines were subsequently endorsed by the UNGA and essentially incorporated into resolution 64/72 adopted in 2009.

VMEs

UNGA resolution 61/105, in paragraph 83(b), called on States and RFMOs to identify VMEs and determine whether bottom fishing activities would cause significant adverse impacts to such ecosystems and the long-term sustainability of deep sea fish stocks, inter alia by improving scientific research and data collection and sharing, and through new and exploratory fisheries. Yet in the current Zonation model, not all indicator species are included, and there is no other method for identifying VMEs such as drop cameras or video surveys. The resolution calls on areas where VMEs are known or likely to occur to be closed to bottom fishing, and to ensure that such activities do not proceed unless it has established conservation and management measures to prevent significant adverse impacts on VMEs. In paragraph (c), vessels are to cease bottom fishing activities in areas where VMEs are encountered, and to report the encounter so that appropriate measures can be adopted in respect of the relevant site. There are numerous problems with the current proposed measures. Despite DSCC requests, the 'naturalness' layer was not removed, so the assumption that areas previously trawled are destroyed and do not contain VMEs could not be tested. Worse, there are no measures in place to prevent SAIs on identified VMEs. The proposed measure, out of the blue, would provide (in para 37) that a "single encounter does not in and of itself provide rationale for ongoing suspension of bottom trawling and midwater trawling." There is no basis for this. The Scientific Committee is then tasked with (para 33) "an analysis of whether the encounter was consistent with scientific models," rather than being tasked, consistent with resolution 61/105, to prevent SAIs on the VME. The FAO Guidelines recommend in para 69 that States and RFMO/As should, in light of reports adopt or modify management measures, appropriate for the DSF concerned, in regard to the relevant site or area to prevent significant adverse impacts on the VME.

Apart from this, the encounter protocol is not precautionary. Far from it: up to 250 kg of stony corals can be brought up in a net without triggering the move-on rule. This was derived using a far-from-precautionary 99 percentile test. The DSCC recommends that issue be returned to the Scientific Committee, with the percentile used to be set at 25% at the highest. We note that para. 68 of the FAO Guidelines that "In designing such protocols and defining what constitutes an encounter, States and RFMO/As should take into account best available information from detailed seabed surveys and mapping, other relevant information available for the site or area, and other conservation and management measures that have been adopted to protect VMEs pursuant to paragraphs 70 and 71."

Prior Impact Assessments

Para 83(a) of resolution 61/105 called for assessments whether individual bottom fishing activities would have significant adverse impacts on vulnerable marine ecosystems, and to ensure that if it is assessed that these activities would have significant adverse impacts, they are managed to prevent such impacts, or not authorized to proceed. Resolution 63/72 reinforced this in para. 119 (a) in calling on the assessments called for in paragraph 83 (a) of its resolution 61/105, consistent with the Guidelines, to be conducted, and to ensure that vessels do not engage in bottom

[4] Para. 47.

[5] Paras.16-20.

fishing until such assessments have been carried out. But the current paragraph 24 of the proposed measure would exempt existing bottom fisheries from impact assessments.

Stock Assessments

On stock assessments for target species,[6] stock assessments are still scheduled in the upcoming workplan for 2019-2021. Many assessments are in reality area assessments: the Louisville area contains three stocks, but only one catch limit is proposed. The Westpac Bank has no stock assessment. The current proposal in para. 10 proposes the default limit being catch from 2002-2006. This is unacceptable 12 years after such fishing. In the absence of a stock assessment, the TAC should be 0. No plan is presented for rebuilding depleted stocks.[7]

Non-Target Species

In 2016, the UNGA in resolution 71/123 para 186 called on States and RFMOs, where scientific information is uncertain, unreliable or inadequate, to ensure that conservation and management measures are established consistent with the precautionary approach, in particular with regard to vulnerable, threatened or endangered species; and in resolution 64/72, in para 119(d), to ensure the long-term sustainability of deep sea fish stocks and non-target species, to be precautionary in particular with vulnerable, threatened or endangered species.

The Scientific Committee of SPRFMO reported that stock assessments for another 30 species commonly caught in the deepwater fisheries are only in the 'early stages of development'. The Scientific Committee reported in 2016 that "No progress has been made on stock assessments for other target species in the deepwater fisheries."[8]: In regard to bycatch, it was recognized that efforts should be undertaken to assess the impacts on bycatch species, in particular on low productivity species as called for in paragraph 47 of the UN FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas."[9] Tthere has been little improvement in the management of impacts on bycatch species since 2016.

Conclusion

In the 12 years since the adoption of UNGA resolution 61/105, the management of high seas bottom fisheries by New Zealand's fishing vessels has fallen far short of the commitments made by New Zealand to implement the UNGA resolutions with respect to managing target stocks of deep-sea species for sustainability, managing the bycatch of deep-sea species, conducting impact assessments and protecting vulnerable deep-sea ecosystems. To be consistent with the 2009 UNGA resolution 64/72, para. 120, which calls on States to adopt and implement the resolutions or else not authorize bottom fisheries to proceed, New Zealand should have suspended bottom fisheries on the high seas in the SPRFMO area until adequate stock assessments have been conducted and sustainable levels of catch can be established, measures have been put into place for the conservation of non-target species, and impact assessments have been conducted and measures established, consistent with the UNGA resolutions and Guidelines, to ensure that significant adverse impacts on vulnerable marine ecosystems and biodiversity are prevented.

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[6] 61/105 para 80, 64/72 para 119(d), 71/123 (2016) para 186

[7] 71/123 (2016) para. 186

[8] SC-4 pages 12-13

[9] SC-4 Report section 6.3 (pages 12-13).

It is crucial for three reasons that SPRFMO agrees a compliant measure. The first is that the UN General Assembly, in 2020, will again review the actions taken by States individually and through RFMOs to implement the previous resolutions adopted by the UNGA in respect of managing deep-sea fisheries on the high seas. Secondly, the UNGA has begun the process of negotiating a new treaty for the conservation of marine biodiversity in areas beyond national jurisdiction in September of this year.

Deep sea fisheries in areas beyond national jurisdiction are recognized as having been, and continuing to be, a significant threat to marine biodiversity in ABNJ. The UN's First World Ocean Assessment, published in 2016, makes its concern with deep-water fisheries clear:[15]

> "The documented widespread extent of deep-water trawl fisheries has led to pervasive concern for the conservation of fragile benthic habitats…The vast majority of deep-water fisheries have been carried out unsustainably, or at least without satisfactory assessments of impacts and sustainability. This has led to the serial depletion of dozens of stocks…Severe impacts have been reported for by-catch species, including other fishes… The extent of benthic impacts has been described for local fishing grounds but has not been assessed globally; however, if the impacts of these regional studies are generalized, we can extrapolate that fishing, and in particular deep-water trawling, has caused severe, widespread, long-term destruction of these environments globally."… "Deep-sea ecosystems…are now and will increasingly be subjected to multiple stressors from habitat disturbance, pollutants, climate change, acidification and deoxygenation…The scientific understanding of how these stressors may interact to affect marine ecosystems remains particularly poorly developed. For example, the widespread destruction of deep-water benthic communities due to trawling has presumably reduced their ecological and evolutionary resilience as a result of reduced reproductive potential and loss of genetic diversity and ecological connectivity."

Thirdly, 2020 is the target date for the implementation of Sustainable Development Goal 14.2, which states: "By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans".

The measure, as proposed, is incompatible with the UNGA resolutions, SDG 14.2, the SPRFMO Convention, the UN Fish Stocks Agreement and the conservation of biological diversity in areas beyond national jurisdiction.