

7th MEETING OF THE SCIENTIFIC COMMITTEE

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**Design of a review process for VME encounters in bottom fisheries in the
SPRFMO Area**

New Zealand

South Pacific Regional Fisheries Management Organisation

7th Meeting of the Scientific Committee

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**Design of a review process for VME encounters in bottom fisheries in the
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7 September 2019

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1. Purpose

This paper proposes the components of a process for SC to implement when it reviews encounters¹ in bottom fisheries with vulnerable marine ecosystems (VMEs) at its annual meeting each year.

2. Requirements of the new bottom fishing measure

Objectives

In February 2019, the SPRFMO Commission approved a new CMM for the management of bottom fisheries, [CMM-03-2019](#). The objective of that CMM is:

- 1. The objective of the CMM together with CMM 03a-2019 (Deepwater Species) is, through the application of the precautionary approach and an ecosystem approach to fisheries management, to ensure the longterm conservation and sustainable use of deep sea fishery resources, including target fish stocks as well as non-target or associated and dependent species, and, in doing so, to safeguard the marine ecosystems in which these resources occur, including inter alia the prevention of significant adverse impacts on vulnerable marine ecosystems.*

This objective uses much of the text from the Objective of the [SPRFMO Convention](#) but is tailored to bottom fisheries and is more specific about the requirement to prevent significant adverse impacts on VMEs than the objective of the Convention text. Both objectives are considered further in later sections on developing advice to the Commission.

Relevant paragraphs from CMM-03-2019

CMM-03-2019 provides a detailed description of procedures following encounters that are to be undertaken by flag states, the Scientific Committee (SC) and Commission.

- 32. Members and CNCPs shall submit to the Scientific Committee a detailed description of each encounter by vessels flying their flag that resulted in a temporary suspension pursuant to paragraph 28, a comparison of the encounter with the existing model prediction, and suggested management actions to prevent significant adverse impacts on VMEs.*
- 33. The Scientific Committee, at its next annual meeting, shall review all encounters reported pursuant to paragraph 28(b) and determine whether any encounters were unexpected based on the relevant VME habitat suitability models, and provide advice on management actions proposed by the Member or CNCP under paragraph 32 and any other management actions the Scientific Committee considers appropriate. This review should include consideration of:*
 - a) the detailed analyses provided by a Member or CNCP pursuant to paragraph 32;*
 - b) historical fishing events within 5nm of the encounter tow, in particular, any previous encounters, and all information on benthic bycatch;*
 - c) model predictions for all VME indicator taxa;*
 - d) details of the relevant fishing activity, including the bioregion; and*

¹ "Encounter" means catch of one or more VME indicator taxa above threshold levels as set out in paragraph 28 of CMM-03-2019

e) any other information the Scientific Committee considers relevant.

34. Taking into account the Scientific Committee's determination of whether the encounter was unexpected based on the relevant VME habitat suitability models, and advice on management actions, at its next annual meeting, the Commission shall determine management actions for each encounter area. Management actions determined by the Commission will apply as appropriate, unless otherwise determined, from the conclusion of the relevant Commission meeting.
35. Members and CNCPs shall submit to the Secretariat annual reports of all benthic bycatch data from vessels flying their flag, consistent with CMM 02-2018 (Data Standards), to enable an ongoing review of the effectiveness of the spatial management arrangements. By no later than its annual meeting in 2019, the Scientific Committee shall develop a review process to provide for ongoing monitoring and feedback.
36. At its annual meetings in 2019 and 2020, the Scientific Committee shall review and provide advice on the effectiveness of the applied management measures, including:
- VME indicator thresholds;
 - The number of encounters;
 - The number of encounters that were expected based on habitat suitability models;
 - The appropriateness of the management approach (e.g. scale);
 - Additional relevant VME indicator species that have not been modelled, assessed or for which thresholds have not been established;
 - Refinement of the encounter protocol;
 - Measures to prevent the catch and/or impacts on rare species; and
 - Anything else the SC considers relevant

to ensure the measure is achieving its objective and the objectives of the Convention.

37. From 2020, the Scientific Committee shall review all available data and provide advice on the ongoing appropriateness of the management measures in this CMM to ensure the measure continues to achieve its objective and the objectives of the Convention.

3. Components of a review process

Based on the specifications in the CMM, we have identified the following steps that we believe should be identified in a protocol or terms of reference for SC review:

- The Member whose vessel triggers an encounter provides a detailed description of each encounter;
- All Members provide information on all benthic bycatch, including, but not limited to, bycatch from the fishing event that led to the encounter and all previous encounters and historical fishing events within at least 5 nm of the encounter event;

- The Member provides a comparison of the encounter and all historical fishing events within at least 5 nm of the encounter tow with the existing model predictions, including consideration of both the habitat suitability layers and the associated uncertainty layers;
- The Member suggests management actions to prevent SAIs on VMEs;
- SC reviews encounters and determines whether any encounters were unexpected based on the relevant VME habitat suitability models and associated uncertainty layers, taking into account:
 - the detailed analyses provided by the Member;
 - all historical fishing events within at least 5nm of the encounter tow, in particular, any previous encounters, and all information on benthic bycatch;
 - available model predictions for VME indicator taxa;
 - the bioregion within which the encounter occurred;
 - details of other relevant fishing activity; and
 - any other information it considers relevant.
- SC reviews advice on management actions proposed by the Member and develops recommendations for the Commission on the management actions that it considers appropriate for each encounter area;
- SC reviews all encounters and any other new information and highlights for Commission any information that may suggest the CMM is not working as anticipated;
- From 2020 onwards, SC provides advice to the Commission on the ongoing appropriateness of the CMM, including the appropriateness of the spatial management measures in preventing significant adverse impacts on VMEs and the effectiveness of the selected thresholds for VME indicator taxa included in the encounter protocol as a “backstop” complementary to spatial management measures.

Member provides a detailed description of each encounter

A Member or CNCP must provide for the consideration of the SC, the following information for bottom fishing events that occurred more than 90 days before the start of the SC’s annual meeting by vessels flying their flag that resulted in a temporary suspension pursuant to paragraph 28: of CMM-03-2019:

- The date that the event was completed;
- The start and finish locations of the event;
- The start and finish depths of the event;
- The target species for the event and the gear used (i.e., bottom trawl or midwater trawl for benthic-pelagic species);
- The location of the event relative to all historical fishing events (all methods) within at least 5 n.m. of the encounter tow (to the extent that these data are available to the Member);
- The catch weight of all benthic invertebrate species, including but not limited to, VME indicator taxa, in that event and all historical fishing events within 5 nm (to the extent that these data are available to the Member).

It is suggested that catch weight data (and, perhaps, even target species) for fish or other target species are not relevant to the assessment of unexpectedness relative to habitat suitability models and should not be required to be submitted. This would mitigate any confidentiality issues with the provision and/or central storage of trawl events.

A Member or CNCP whose vessel triggers an encounter may need to contact other bottom fishing Members or CNCPs to compile information related to historical fishing events in the area, or the secretariat may request all Members and CNCPs to provide relevant data (to the Member or to the Secretariat?) once an encounter occurs. If data cannot be provided by other bottom fishing Members or CNCPs in a time manner, for example because of confidentiality concerns or legal challenges, the SC should have the discretion to conduct a review with the information available.

Where an encounter event occurred less than 90 days before the start of SC's annual meeting, a Member or CNCP may, at their discretion, provide the above data for consideration by the SC in the same year or in the following year. However, the temporary closure will remain in effect until the information has been reviewed by SC and a decision has been made by the Commission.

Discussion points for SC:

- Is the list of characteristics for the encounter-causing fishing events sufficient, and is it agreed that we do not need catch information (target species?) to be provided other than for benthic taxa?
- What process should be put in place to collect relevant data (for each encounter) from other bottom fishing nations? Should data be centralised to provide for easier access? Has the Secretariat got the resources to provide such a service?
- Is detailed bycatch information required for all events in the environs of an encounter?
- It takes significant time to check and database information from observers and to conduct the types of analyses described below. If papers are due with SC 30 days before the meeting, a 90-day limit would still give only 60 days to complete and document all this work.
 - Is 90 days a reasonable time to collect these data and conduct the analyses or should encounters for the previous calendar year be the minimum standard?
 - Note: CMM-02 (data standards²) does not require benthic bycatch data to be submitted until 30 September of the following year, too late to be part of a substantive analysis for SC that year;
 - If 90 days is acceptable, should there be a "late submission" clause somewhere to enable a Member to bring analyses to the table for review by SC?
 - Para 33 seems to preclude any intersessional review by SC ("*at its annual meeting...*")
 - Or is it appropriate (and we believe the intent of the CMM) to simply state that temporary closures remain in place until the Member provides at least its own data and analyses, SC reviews them, and Commission makes a call?

Member provides a comparison of the encounter with the existing model predictions

A Member or CNCP must provide for the consideration of the SC each year, the following information related to all bottom fishing events specified above:

² (CMM-02 para 2c) (Observer data including catch weights of all VME species and other benthic fauna):

Members and CNCPs will provide by 30 September, their previous (January to December) year's data.

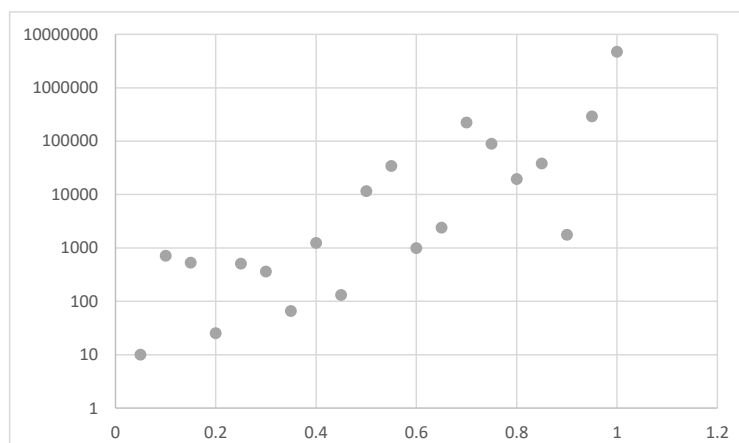
Annex 7B (trawl) specifies (para 2p – 2r): p) Was there any benthic material in the trawl? (Yes/No/Unknown) q) If yes, record sensitive benthic species in the trawl catch, particularly vulnerable or habitat-forming species such as sponges, sea-fans or corals r) Estimate of the amount (weight or volume) of remaining marine resources not recorded under items 2(m) to 2(o) discarded, split to the lowest known taxon

- Spatial data layers and maps of the predicted habitat suitability for each of the ten taxa modelled by [Georgian et al 2019](#) [and any species subsequently added to the list of VME indicator taxa]:
 - **Species of framework-forming stony corals**
 - *Enallopsammia rostrata*
 - *Goniocorella dumosa*
 - *Madrepora oculata*
 - *Solenosmilia variabilis*
 - **Sponges:**
 - Demospongiae (demosponges)
 - Hexactinellida (glass sponges)
 - **Other groups:**
 - Alcyonacea (soft corals)
 - Antipatharia (black corals)
 - Pennatulacea (sea pens)
 - Stylasteridae (hydrocorals)

For each encounter event, maps should be provided having the following characteristics:

- A colour scale indicating the predicted habitat suitability (range 0–1.0) of each given taxon;
- Predictions at a scale (granularity) of 1 km;
- Predictions that correct for estimated “naturalness”;
- Estimates of the uncertainty of habitat suitability for each taxon;
- Spatial coverage of approximately 5–10 km around the entire event;
- Overlay of the encounter event, corrected, to the extent practicable, for differences between the location of the vessel and the gear;
- Overlay of historical fishing events, individually labelled to the extent practicable, within at least 5 nm of the encounter, corrected, to the extent practicable, for differences between the location of the vessel and the gear;

As a guide to what might be considered “unusual” for a location, it might be useful to develop scatter plots of bycatch weights by VME taxon (by fishing area?) against habitat suitability predictions, as below (x-axis being habitat suitability, y-axis being catch weight, fully expecting that the real thing would be much messier and have many more zeros)...



Discussion points for SC:

- Should centralised GIS layers (and batch files?) be compiled and held by the Secretariat and made available to Members whose vessels trigger an encounter? Should they be on the SPRFMO website?
- Are maps and data for of all 10 VME indicator taxa required or only those that triggered the encounter?
- Should maps and data layers of model uncertainty be provided as well as point estimates; will these assist SC's deliberations?
- Should maps of VME predictions be discounted for naturalness using the layer used to develop the spatial management areas?
- What should be on the maps as well as habitat suitability predictions?
 - Bathymetry?
 - Overlay of the encounter event(s)?
 - Previous fishing events and encounters (as distinct from the naturalness layer)?
 - Anything else?
- Would plots of historical bycatch weights of VME indicator species against predicted habitat suitability (with the encounter event(s) highlighted) assist with SC's assessment of unexpectedness? If so:
 - Should there be more than one scatter plot (e.g., options could include habitat suitability on the X-axis, suitability discounted for naturalness, or suitability discounted for prediction uncertainty in some way)
 - Should there separate plots for each VME indicator taxon, if so, for how many?
 - If an encounter fishing event passes through multiple grid cells with different habitat suitability predictions, should each fishing event be represented by more than a single point, or should habitat suitability predictions be averaged?
- What is feasible and reasonable within the constraints of the CMM and the workload requirements for the Member, the Secretariat, and the Scientific Committee?

Member suggests management actions to prevent SAIs on VMEs

For each encounter event, and for all encounters and historical fishing events combined, Members must provide:

- Their assessment of whether each encounter event was unexpected based on the predictions of relevant VME habitat suitability models (and, therefore, whether the SC should advise the Commission to maintain the temporary closure of that particular encounter area);
- Their assessment of whether all encounter events and new benthic bycatch data combined were unexpected based on the predictions of relevant VME habitat suitability models and any assessment of the likely number of encounters in a year, including;
 - Any series of encounters or bycatch events that appears to suggest a higher abundance of a VME indicator taxon in an area compared with the model predictions;
 - Possibly? Any series of events with little or no bycatch of a VME indicator taxon in an area predicted to have a high abundance of that taxon (noting

- that this requires access to all fishing information, maybe this is a more deliberative job during testing of models for BFIA);
 - Consideration of the number of encounters compared with the number predicted, noting the unexpectedness of each relative to the model predictions;
 - Note that an “expected” number of encounters each one of which was “unexpected” relative to model predictions should be considered unexpected
 - A description of the changes, if any, in the measures specified in CMM-03-2019 that they consider to be necessary to prevent significant adverse impacts on VMEs, for example, continuation of some temporary closures, changes to boundaries etc);
 - If a Member does not consider that any changes to the measures specified in CMM-03-2019 are required to address the impacts of vessels flying their flag, a rationale must be provided.

Discussion points for SC:

- Are there other matter that Members should be required to address and provide for the SC’s consideration?

SC reviews encounters and determines whether any were unexpected

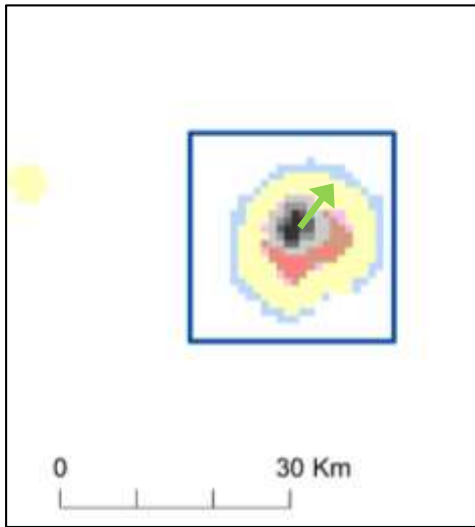
The Scientific Committee will compile and consider the following information and form an opinion as to whether the benthic invertebrate catch of each event was surprising in the context of CMM-03-2019:

- the detailed analyses provided by the Member;
- historical fishing events within at least 5 n.m. of the encounter tow, in particular, any previous encounters, and all information on benthic bycatch;
- model predictions for all VME indicator taxa and associated uncertainty layers;
- details of the relevant fishing activity, including the bioregion (noting that different regions have different compositions of benthic bycatch, for example stony coral are more commonly caught on the Louisville than elsewhere); and
- any other information it considers relevant.

Here we provide some hypothetical examples as a starting point for SC’s discussion of what may or may not be considered an unexpected encounter relative to the predictions of habitat suitability models. Graphics in the rev1 version of this paper replace lower resolution images with confusing clutter in the original paper.

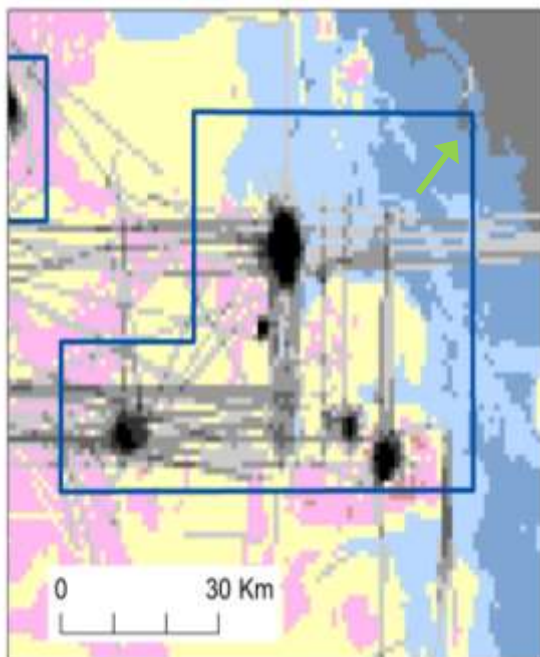
Hypothetical Example 1: A very short bottom trawl tow (less than 5 minutes on the bottom) targeting orange roughy at a depth of 900 m caught 260 kg of the stony coral *Solenosmilia variabilis*. The tow (green arrow) was within a small open area covering a single feature (blue box) that had been heavily fished. Habitat suitability models suggested that parts of the feature were originally quite suitable for *S. variabilis* (red and pink cells) with high certainty, but the benthic community was estimated to have low naturalness in most parts of the feature (grey cells). Noting the inherent uncertainty in the position of the gear on the bottom, the estimated position of the tow was close to, possibly on top of, parts of the open area that had not been heavily fished and were estimated to be quite suitable for *S.*

variabilis. About 40% of historical tows on the feature had caught *S. variabilis*, and a few of these “positive” tows had bycatch weights of between 200 and 500 kg of stony corals (usually but not always recorded as *S. variabilis*).



We suggest an encounter of this type might reasonably be expected given that some cells close to the reported location were predicted to have a high likelihood of having *S. variabilis* even though such cells lie within an area open to fishing. Historical tows in the general area also have occasional catches of *S. variabilis*.

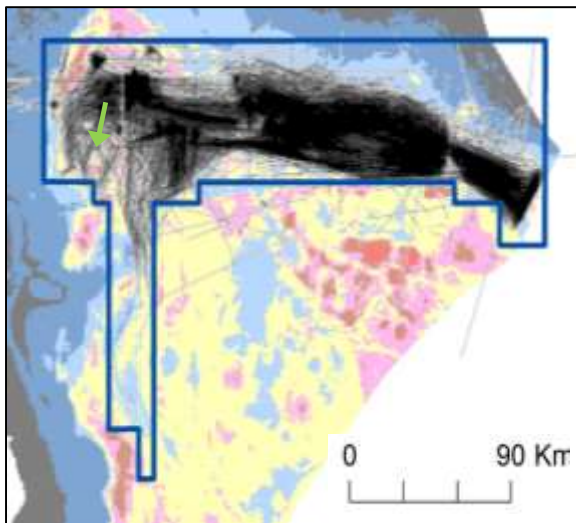
Hypothetical Example 2: A short bottom trawl tow targeting orange roughy at a depth of 1000 m caught 260 kg of the stony coral *Solenosmilia variabilis*. The tow (green arrow) was within a moderately small open area covering a complex of features (blue box) that had been heavily fished. Habitat suitability models suggested that parts of the feature were originally quite suitable for *S. variabilis* (red and pink cells) with high certainty, but the benthic community was estimated to have low naturalness in most parts of the feature (grey cells). Noting the inherent uncertainty in the position of the gear on the bottom, the estimated position of the tow was many kilometres away from areas predicted to be suitable for *S. variabilis*. There were few historical tows close to the encounter event, although more than 20% of these had caught *S. variabilis*, generally over 50 kg.



We suggest an encounter of this type should be classified as unexpected with respect to the habitat suitability model predictions given that few cells close to the reported location were predicted to have a high likelihood of having *S. variabilis* and some historical tows in the general area had significant catches of *S. variabilis*.

Hypothetical Example 3: A long bottom trawl tow of about 14 km targeting orange roughy at a depth of 800 m on the slope caught 80 kg of demosponges. The tow (green arrow) was within a large open

area covering the outer parts of a plateau (blue box) that had been heavily fished. Habitat suitability models suggested that most of the plateau was only moderately suitable for demosponges (yellow cells) but with high uncertainty. The benthic community was estimated to have low naturalness in most parts of the feature (grey cells) but, because of the patchy distribution of fishing, small areas of less impacted benthic communities were predicted to occur along and around the encounter tow. Noting the inherent uncertainty in the position of the gear on the bottom, the estimated track of the tow traversed an area with heterogeneous and uncertain predictions of suitability for demosponges. About 10% of the historical tows close to the encounter event (spread over a very large area given the length of the encounter tow) had caught demosponges with catch weights mostly 1-10 kg but with one very large catch of > 250 kg (estimated by eye).



An encounter of this type would be difficult to classify definitively because of the heterogeneous and uncertain predictions of habitat suitability for demosponges and the length of the tow across many predictive cells.

However, we suggest that a single encounter of this type might be expected occasionally given that some cells close to the tow were predicted to have a moderate (but uncertain) suitability for demosponges.

We would consider multiple encounters and/or frequent bycatch events just below the thresholds to be more surprising and the weight of evidence would indicate the habitat suitability models were potentially misleading.

The predictions of habitat suitability models could be misleading in terms of both false positive (predicting VME indicator taxa where they do not occur) and false negatives negative (failing to predict VME indicator taxa where they do occur). Review of encounters, as described in this paper, is designed to detect false negatives by identifying potential areas of high abundance of VME indicator taxa that the models (combined with discounting for naturalness) did not predict. Detecting false positives using fishing information would require an assessment of the bycatch records of all past trawling and comparing them with model predictions. This is anticipated in paper SC-07-DW-12 which identifies that 46% of the new records of VME indicator taxa that could be used to test and update habitat suitability models have come from observers on board fishing vessels. False positives would have important implications for assessing the performance of spatial management measures. However, we think the testing and updating of models using broad-scale assessment of false positives and negatives together should not be confused with the process required by CMM-03-2019 for assessing individual encounter events.

Discussion points for SC:

- Are all the matters that SC should consider captured? If not, what should be added or expanded?

- Are hypothetical examples useful to guide SC's consideration of the following concerning unexpectedness in relation to the predictions of habitat suitability models:
 - Individual encounter events and temporary closures?
 - Multiple encounter events and temporary closures?
 - Weight of evidence from multiple events?
- Should more hypothetical examples be compiled and, if so, what would they look like?
- Is it agreed that broad-scale testing of habitat suitability models for false positives / over-prediction should not be part of SC's annual review process but should be part of the more deliberative test and review already anticipated leading up to the BFIA in 2020?
- Should a "terms of reference" for an SC review include, for example:
 - Specific matters to assess (unexpectedness compared with model predictions)?
 - Specific data and quality requirements of Members' submissions?
 - Some guidance on what other matters SC might explore when considering what else is relevant to the review?
 - A formal checklist like that used for exploratory fishery proposals?

SC reviews and develops advice on management actions it considers appropriate

Using the management actions proposed by the Member as a starting point, SC will develop a proposed package of management actions it considers appropriate for the Commission to consider. These could include some or all of:

- Re-opening for fishing some or all of the areas that were closed as a result of the encounter protocol when the SC's assessment is that the benthic bycatch recorded during individual events were not unexpected;
- Maintaining closure of all of the areas that were closed as a result of the encounter protocol when the SC's assessment is that the benthic bycatch recorded during individual events was unexpected or if insufficient evidence to review the temporary closure has been provided;
- Maintaining closure of some or all of the areas that were closed as a result of the encounter protocol when the SC's assessment is that the pattern of benthic bycatch recorded during a series of events was unexpected;
- Where one or more temporary closures caused by encounters occur close to the boundary of an area open to fishing, simplifying the boundaries of those open areas to exclude the temporary closure and avoid unreasonable complexity in boundaries;
- Any other changes the SC considers appropriate;

SC provides advice to Commission on management actions

The SC's report will include specific recommendations to the Commission on a management response for each encounter area and, as appropriate, all encounter areas combined. Because the onus is on the Member whose vessel triggered an encounter to provide sufficient information for SC to review that encounter, and temporary closures remain in place until adequately reviewed, there should be no need for any additional work or development of papers between the SC meeting and the following Commission meeting.

Discussion points for SC:

- Is it agreed that the onus should be squarely on the Member whose vessel triggered an encounter to provide sufficient information for SC to review that encounter?
- Is it agreed that the default is that temporary closures remain closed until reviewed (we think this is required by the CMM).

SC reviews all encounters and new information and provides advice to Commission on whether the CMM is working as anticipated

Paragraph 36 of CMM-03-2019 states:

At its annual meetings in 2019 and 2020, the Scientific Committee shall review and provide advice on the effectiveness of the applied management measures, including:

- *VME indicator thresholds;*
- *The number of encounters;*
- *The number of encounters that were expected based on habitat suitability models;*
- *The appropriateness of the management approach (e.g. scale);*
- *Additional relevant VME indicator species that have not been modelled, assessed or for which thresholds have not been established;*
- *Refinement of the encounter protocol;*
- *Measures to prevent the catch and/or impacts on rare species; and*
- *Anything else the SC considers relevant*

Given that there have been relatively little fishing and no encounters since the CMM was implemented (see SC-07-DW-15) and that detailed observer data on benthic bycatch (including VME indicator taxa) taken during fishing in the revised spatial management areas is not due with the Secretariat until the end of September 2019, we believe there is insufficient new information for SC to judge the effectiveness of the management measures at this meeting.

Work is underway on: refining the suite of VME indicator taxa for SPRFMO; the catchability of VME taxa in trawls; and testing and reducing uncertainty in the habitat suitability models, including the relationship between predicted likelihood of occurrence of a taxon and its observed density. Much of that work is reported in separate papers to SC-07, but more will be done as Australia and New Zealand collect more information under the new management measures and conduct a cumulative bottom fishery impact assessment (due at SC-08 in 2020).

From 2020, SC provides advice to Commission on the ongoing appropriateness of the CMM

At its 8th meeting in 2020, SC should be in a better position to judge the effectiveness of the management measures and advise Commission of any changes it considers necessary. A full year of benthic bycatch data under the new spatial and encounter protocol measures will have been collected and substantially more analysis should have been completed. Much of this work is underway in

Australia and New Zealand's respective science agencies, but collaborative links need to be strengthened. The collaborative work over the coming 12 months should allow SC to assess the performance and effectiveness of the measure against the objectives of the CMM and the Convention.

Objectives of the CMM and the Convention

1. *The objective of the CMM together with CMM 03a-2019 (Deepwater Species) is, through the application of the precautionary approach and an ecosystem approach to fisheries management, to ensure the longterm conservation and sustainable use of deep sea fishery resources, including target fish stocks as well as non-target or associated and dependent species, and, in doing so, to safeguard the marine ecosystems in which these resources occur, including inter alia the prevention of significant adverse impacts on vulnerable marine ecosystems.*

Article 2, Objective: 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.

4. Recommendations

It is recommended that the Scientific Committee:

- **Notes** there have been no encounters since CMM-03-2019 came into force so no reviews of temporary closures are required this year;
- **Adopts** the components of a review process identified in this paper for application in future years and **develops** a protocol or terms of reference for the review process, using an intersessional working group if necessary;
- **Agrees** that a geodatabase of standardized and approved GIS layers should be developed including habitat suitability predictions for the 10 VME indicator species at a 1 km spatial resolution, including corresponding naturalness and uncertainty layers;
- **Agrees** that the geodatabase will be held by the Secretariat and can be provided to Members and CNCPs to aid in the evaluation of encounters each year;
- **Notes** that New Zealand and Australia will work collaboratively on the suite of VME indicator taxa appropriate for SPRFMO, the thresholds for VME encounter protocols, habitat suitability models for VME indicator taxa, and estimating the performance of the spatial management regime to be completed before SC-08 meets in 2020 to support advice to the Commission on the ongoing effectiveness of CMM-03-2019.
- **Agrees** to recommend to the Commission that, with respect to individual temporary suspensions / closed areas following encounters, that the Commission:
 - **Notes** that SC-07 has reviewed information on benthic bycatch and all temporary suspensions to fishing that occurred since CMM-03-2019 was adopted; AND
 - **Notes** that no encounter events occurred sufficiently long (90 days) before the SC's annual meeting such that the detailed analysis required by paragraph 32 of CMM-03-2019 could reasonably have been completed;