



**SPRFMO**  
South Pacific Regional Fisheries Management Organisation

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## 12<sup>TH</sup> MEETING OF THE SPRFMO COMMISSION

*Manta, Ecuador, 29 January to 2 February 2024*

COMM 12 – Obs 01

HSFG paper to the SPRFMO Commission

*High Seas Fisheries Group*

21 December 2023

## HIGH SEAS FISHERIES PAPER TO SPRFMO COMMISSION

### Summary

We submit our paper on behalf of the High Seas Fisheries Group (HSFG), an incorporated society representing the interests of deep sea fisheries in New Zealand. We are concerned with the significant and scientifically unjustified reductions to the bottom fishing area in SPRFMO, not least because of serious concerns regarding the scientific rigour of the data that has supported these reductions.

For reasons expanded upon in our paper, the HSFG urges members to do the following:

1. Recognise that the current level of spatial closures makes these fisheries inherently precautionary and that any further measures take the principle too far and stifle sustainable and rational utilisation;
2. Commit to a review of recent science and policy decisions and agree to a policy realignment with input from members and other interested parties, including the HSFG, prior to the agreement of proposed CMMs;
3. Cease advocating for widespread and percentage-based spatial fisheries closures;
4. Abandon move on measures;
5. Reinstate the TAC for orange roughy on the basis of no fishing taking place without it; and
6. Recognise as flag state members, including New Zealand, may issue High Seas Fishing Permits on the basis of its own interpretation of the conservation measures.

The ability to fish in SPRFMO has progressively been eroded through various Conservation and Management Measures ('CMM'); as it currently stands close to 99.9% of the SPRFMO area is now closed to bottom and midwater trawling. Further the latest CMM, CMM 03a-2023 from February 2023, has reduced the total amount of commercial catch ('TACC') of orange roughy that may be trawled in SPRFMO; in the case of the Northwest Challenger area the reduction was over 50%. We assert that the closure of 99.9% of the entire SPRFMO area goes beyond the precautionary approach that we are directed to follow, and that additional restrictions and closures further jeopardise the viability of an already jeopardised high seas fishing industry in SPRFMO.

We are now faced with a further reduced area with a move to protect 70% of the remaining area under the proposal within SC11-DW05. If this reduction is approved at Commission, the remaining open area will be reduced by an **additional 50% from .13 % to .07%** of the entire SPRFMO Convention Area. This proposed reduction is based entirely on models and predictions with information sourced for the most part from inside the New Zealand EEZ. On the basis of the miniscule area remaining available to us to fish in under the current level of spatial management, it is now impossible for our impacts to be **significantly adverse**.

21 December 2023

## HIGH SEAS FISHERIES GROUP COMMENT TO SPRFMO COMMISSION

### Executive Summary

I write this on behalf of the High Seas Fisheries Group (HSFG), an incorporated society representing the interests of deep sea fisheries in New Zealand. We are aligned closely with Seafood NZ, though we operate with the support of a number of international operators also. We regularly submit papers to SPRFMO both at SC and Commission and have done so since 2008. During this time we have worked with NZ officials; sometimes with aligned interests, sometimes not. Primarily HSFG holds sustainable fishing and New Zealand industry participation and science contribution as paramount.

For reasons expanded upon in this paper, the HSFG urges members to do the following:

1. Recognise that the current level of spatial closures makes these fisheries inherently precautionary and that any further measures take the principle too far and stifle sustainable and rational utilisation;
2. Commit to a review of recent science and policy decisions and agree to a policy realignment with input from members and other interested parties, including the HSFG, prior to the agreement of proposed CMMs;
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6. Recognise as flag state members, including New Zealand, may issue High Seas Fishing Permits on the basis of its own interpretation of the conservation measures.

The ability to fish in SPRFMO has progressively been eroded through various Conservation and Management Measures ('CMM'); as it currently stands close to 99.9% of the SPRFMO area is now closed to bottom and midwater trawling. Further the latest CMM, CMM 03a-2023 from February 2023, has reduced the total amount of commercial catch ('TACC') of orange roughy that may be trawled in SPRFMO; in the case of the Northwest Challenger area the reduction was over 50%.<sup>1</sup> We assert that the closure of 99.9% of the entire SPRFMO area goes beyond the precautionary approach that we are directed to follow, and that additional restrictions and closures further jeopardise the viability of an already jeopardised high seas fishing industry in SPRFMO.

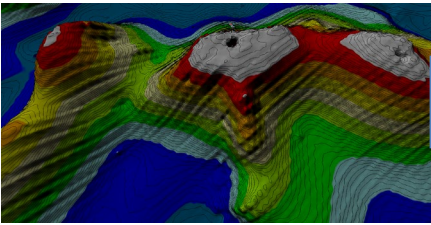
This restriction is the latest in a series of continuous reductions in the areas open to bottom fishing. Starting with CMM 2-03, agreed to in 2014, the footprint was set as the areas bottom fished by all member vessels between 1 January 2002 and 31 December 2006.<sup>2</sup> New Zealand used information from inside our EEZ of domestic and foreign flag catch records to generate bottom fishing footprint maps.<sup>3</sup> This was despite the HSFG submitting to SPRFMO and the New

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<sup>1</sup> Refer to paragraph 5(b)(iii)

<sup>2</sup> CMM 2-03, 6.

<sup>3</sup> Ministry of Fisheries New Zealand Bottom Fishery Impact Assessment Dec 2008, pg 18.



## High Seas Fisheries Group Incorporated

Zealand delegations that management measures should be set in place around defined vulnerable marine ecosystem areas – amounting to “feature based” management rather than “area based” management.<sup>4</sup>

We are now faced with a further reduced area with a move to protect 70% of the remaining area under the proposal within SC11-DW05. If this reduction is approved at Commission, the remaining open area will be reduced by an **additional 50% from .13 % to .07%** of the entire SPRFMO Convention Area. This proposed reduction is based entirely on models and predictions with information sourced for the most part from inside the New Zealand EEZ. On the basis of the miniscule area remaining available to us to fish in under the current level of spatial management, it is now impossible for our impacts to be **significantly adverse**. For further reference please see the diagrams at the end of this presentation (annex B).

As we made clear at the recent SC meeting held in Panama we again find ourselves again in a position where we are concerned that the science and papers submitted by New Zealand and Australia on Bottom Fishing Impact Assessments (BFIA) and other matters are not in keeping with the high standard New Zealand has maintained previously in terms of scientific rigour and input/participation in the relevant meetings. Members at SC were made aware of serious issues with the science and models put forward but chose for the most part to ignore what was presented. New Zealand’s delegation went as far as providing replies to our presentation on the first day but neglected to make all members (including HSFG) aware of the response until the report was adopted. This is unacceptable at an international level, and we request decisions made in the deepwater section be reconsidered.

Fisheries management relies on scientific understanding; the bulk of which is gathered and produced on the high seas by fishing vessels during commercial operations, supported both by individual operators’ own records and the work of the Observers and Observer Services. Where concrete data does not exist, there is a huge reliance on predictive models, which is largely based or influenced by personal perspectives and ideologies, data and research predominantly conducted by NIWA.

HSFG asserts that, in the international fisheries space, New Zealand has failed to commission science that reflects a balance between sustainability and ecological factors, and economic growth considerations; these both being part of NIWA’s statement of core purpose.<sup>5</sup> Furthermore, HSFG is concerned about New Zealand’s failures to adequately utilise accurate science, and indeed has relied on flawed data in formulating its models. During arguments raised by us at SPRFMO’s scientific committee, FNZ officials admitted to some extent that New Zealand has failed to achieve the necessary standards in its submissions over the previous few years. They have acknowledged that New Zealand’s approach over the past few years, and the measures collectively agreed at SPRFMO, have had a chilling effect on New Zealand vessels fishing in the SPRFMO high seas areas.

An area of parallel concern is the departure away from spatial assessments including quantitative estimates of the impacts of bottom fishing to blunt “percent protected” methodologies towards protecting VMEs. New Zealand’s negotiating position in SPRFMO since 2020 has been one that has advocated a shift towards a commitment to impose spatial fisheries closures of over 70% for each VME distribution, *regardless* of the actual impact resulting from bottom fishing. This has

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<sup>4</sup> A New Approach for Fisheries 24 1 13 – HSFG, at 2.6.

<sup>5</sup> <https://niwa.co.nz/about/scp>

been part of a wider disconnect between bottom fishing impact assessments (“BFIs”), SPRFMO’s scientific committee advice, and the original text of the Convention.

The HSFG believes New Zealand, and SPRFMO more widely, has departed from an objective and evidence-based metric for determining where bottom fishing closures should be imposed. We urge members and officials present here at SPRFMO Commission to promote open and rigorous discussion as to whether the development of the bottom fishing measure and associated advice has followed the appropriate procedure; this should be done with a mind to reset bottom fishing impact assessments to better align with the SPRFMO Convention text.

This approach will require greater scientific understanding and evidence to better comprehend the scale of impact, if any, on any given VME from bottom fishing; however it promotes a more common sense approach to fisheries management in SPRFMO. Notwithstanding this, on the basis of impact assessment results already provided to SPRFMO in line with quantitative assessments of bottom fishing impact, there are little to no significant adverse impacts and accordingly no urgency; the current SPRFMO restrictions are configured sufficiently tightly to promote sustainable fishing. Accordingly, members are urged to encourage a more measured approach at SPRFMO; promoting the evaluation of SPRFMO procedures and rigorous assessments of the validity of the science that spatial fisheries closures have relied on up to the present.

For explanation I attach the papers HSFG have submitted to the SPRFMO Scientific Committee; the summary of both establishes where we assert that New Zealand has failed to adequately utilise accurate science, and indeed has relied on flawed data in formulating its models. The summary of paper 2 clearly sets out our issues.

HSFG is concerned about the policy positions behind the bulk of the science commissioned and used by New Zealand at the international fisheries level to the extent that there is a growing perception that scientific research funding is being allocated primarily on the basis of ENGO and conservation inclined interests to the detriment of supporting industry and utilisation approaches.

Further to this is appendix 1 where we highlight New Zealand’s response to our presentation and our subsequent response, which itself was submitted only once we became aware that New Zealand had in fact responded to our presentation.

Scientists have argued that science is inherently objective, and that this objectivity has been vital to its value as a decision-making input. But in many circumstances, I have certainly observed the idea that science is politically or even ethically neutral is a myth.

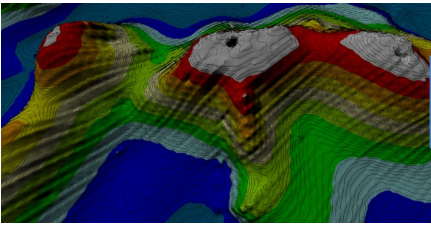
Enquiries have found scientific experts to have ideological, financial, political and ethical biases that influence their professional judgement.

We assert that scientists have been increasingly involved in political advocacy, particularly around environmental issues and they have not distinguished between their scientific advice and policy views.

Being able to distinguish between policy recommendations and scientific advice is vital for science to legitimately claim its independence, which in turn is required for convincing those who make policy decisions.

By way of quick demographic and consumption facts:

- In 2014 world population was 7.3 billion people, now just on 8.1 billion;
- In 2022 an estimated 58.5 million people were employed in the primary fisheries sector;
- Fisheries are large component of global economic trade hundreds of Billions;



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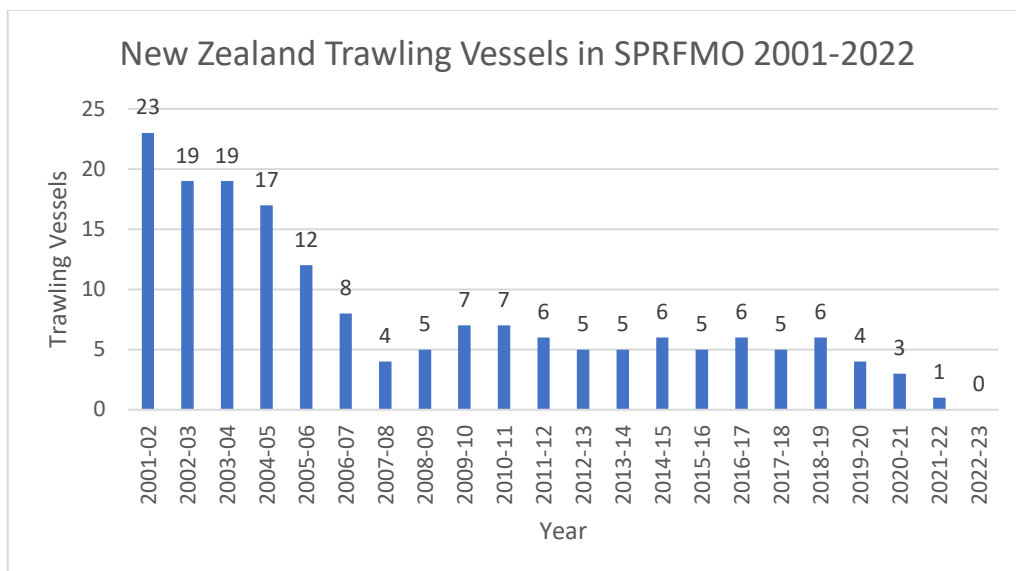
- Fisheries produced an estimated 20 Kgs of food per person and supplied a large % of the human daily animal intake for over 1.2 billion people;
- For many people wild fish are the only source of protein and one of the most nutritionally valuable source of protein. A significant part of food security in many developing states.

I can hear members saying, "well yes so we must protect fisheries". We raise a rhetorical question to you: "Can you really hold SPRFMO up as an example of a RFMO that has or is protecting fisheries?" I think not given SPRFMO history.

As the number of New Zealand vessels bottom fishing in SPRFMO has diminished to zero, this has caused the direct loss of more than 50 jobs at sea. By way of illustration, two vessels have been withdrawn from service and are tied up for sale in large part due to NZ's approach in SPRFMO. The HSFG has over a decade of records that show we have worked with officials and warned of this outcome, but an ultra-conservative and precautionary approach paired with geopolitics has overtaken good science and sustainable logic and plain common sense.

New Zealand rightfully prides itself as a responsible custodian of fisheries on the international stage, however policy directions under the previous governments have undermined this and the economic viability of high seas fishing. Policy directions set by the government, and the operationalisation of said policy by officials have led to the collapse of various fisheries.<sup>6</sup>

New Zealand's fishing efforts in the SPRFMO fishery has been on a downward decline since 2001, with no trawl vessels going out in the 2022-23 year. To our knowledge, no vessels have fished in the SPRFMO area in the 2023-24 year and should the latest restrictions be approved this will confirm this position.



We have taken a direct approach with our new Minister for Oceans and Fisheries and Minister of Foreign Affairs on the SPRFMO subject and have invited those Ministers to reflect upon and discuss the parlous position that we find ourselves in with your officials, particularly James Brown and

<sup>6</sup> For example the mackerel fishery where allocations were announced as being based on gross tonnage over a two year period, leading to significant overfishing and the collapse of the fishery.



Duncan MacDonald, New Zealand commissioner to SPRFMO. HSFG will be arguing against New Zealand's approach at the January 24 commission meeting.

Whilst it is not our aim to discredit or portray New Zealand or ministry scientists in a poor light internationally, jobs have been lost, a poor precedent has been established, and we cannot sit back and not make this clear to the international community.

We have asked New Zealand's Ministers, negotiators and diplomats at SPRFMO commission to argue that the BFIA as recently submitted is reassessed or withdrawn, and status quo on conservation measures be maintained for a further two years, to enable the scientific and research work that informs the application of the BFIA to be done with appropriate scientific rigour. As you will see from the summaries of the two science papers, we assert that decisions at the SPRFMO Commission over the past years have been based on fundamental scientific and procedural flaws.

We have engaged and funded our own science and modelling teams to address these flaws and invite officials to produce objective and scientifically sound findings so that New Zealand's approach in SPRFMO is scientifically and procedurally correct.

If SPRFMO pushes ahead with changes to CMM-03 that are scientifically and legally indefensible, and contrary to standards already adopted, this action will set dangerous precedents for other fisheries, and will risk undermining the foundational principles of SPRFMO.

The science needed to resolve the issues identified here is clearly described, and easily deliverable on a 1-2 year timeframe, using existing data.

On these bases, the HSFG reiterates the following actions that members are urged to undertake:

1. Recognise that the current level of spatial closures makes these fisheries inherently precautionary and that any further measures take the principle too far and stifle essential utilisation;
2. Commit to a review of recent science and policy decisions and agree to a policy realignment with input from members and other interested parties, including the HSFG, prior to the agreement of proposed CMMs;
3. Cease advocating for widespread and percentage-based spatial fisheries closures;
4. Abandon move on measures;
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6. Recognise as flag state members, including New Zealand, may issue High Seas Fishing Permits on the basis of its own interpretation of the conservation measures.

Simultaneously industry will continue to drive innovation so as to ensure improved efficiency and sustainability outcomes, while also being present in the SPRFMO area to gather valuable data for analysis.

While acknowledging the importance of ecosystem-based management, sufficient regard must be given to supporting industry across all members that have interests in high seas fisheries to continue providing quality data along with sustainable animal protein in a growing world population something that requires both industry, scientific and official input.

## Background

The HSFG has previously highlighted a large and growing imbalance in the SPRFMO approach to managing the impact of bottom fisheries on VMEs, whereby the ability of existing bottom fisheries to continue to operate is steadily eroded on an almost annual basis, to the point that it has now stopped fishing in the area as was predicted. Additional restrictions on bottom trawling within the open areas are not scientifically or legally justified.

This trend within SPRFMO to progressively close more and more areas to bottom fishing is generally justified by its proponents on the basis of 'uncertainty' and the need for 'precaution' to protect VMEs (as required by Art 6 of the Convention), but this argument ignores the *undeniable certainty* that:

With over 99.9% of the Convention area closed to bottom trawling, VME habitats across the overwhelming majority of the SPRFMO convention area are in a highly intact and protected state

We have repeatedly pointed out that **0.019%** of the SPRFMO area is accessible to bottom trawling, and bottom trawling is already prohibited in more than **99%** of the convention area.

We reiterate that enacting additional closures, or additional restrictions on bottom trawling within the open areas, is not scientifically or legally justified. The closures and restrictions already in place reflect a flawed process, namely:

- i) At the time of the closures SPRFMO relied on a vague and incompletely defined bottom fishing impact management framework *without a quantitative performance metric*, under which it is not possible to judge whether *any* spatial management regime is succeeding or failing;
- ii) Different SPRFMO bodies addressing bottom fishing measures sometimes (perhaps inadvertently) changed or distorted the meaning of words already used in adopted scientific advice and/or Convention language;
- iii) SPRFMO adopted a progressively narrower spatial focus whereby bottom fishing impacts were only considered within very small, impacted areas while ignoring the unimpacted status of surrounding areas; and
- iv) SPRFMO justified new closures with reference only to 'uncertainty' while resisting HSFG requests and constructive advice to deliver science that would reduce that uncertainty, despite these science approaches being affordable and achievable on a short timeframe, using currently available data.

As in previous years, the HSFG warns that this approach is neither logically nor we believe legally defensible under the SPRFMO Convention and is inconsistent with current scientific advice.

We fear this approach, if followed in other RFMOs risks setting a dangerous precedent that is open to challenge in ITLOS. The HSFG states that the continued adoption of the current approach and deviation from sound scientific principles risks undermining the foundational principles of the SPRFMO Convention, which include "*to ensure the long-term conservation and sustainable use of fishery resources*".

*It is clear to HSFG members that some members within SPRFMO are intent on ending bottom trawling in the SPRFMO area, something they have essentially achieved.* The only countries that have participated over the last decade were New Zealand and Australia; the latter with only very little effort. Other nations could be included but this would require a loose definition of bottom fishing; the definition in SPRFMO context is ill-defined and nonsensical. We made this clear from



the time SPRFMO proposed to classify 'midwater trawling' as bottom fishing, but from that time it has appeared to us that some members are intent on wielding benthic impacts as a pretence to eliminate all trawling on the high seas.

The overwhelming majority of actual data is gathered by fishing vessels carrying out their business. As will be expanded upon further in this briefing document, the HSFSG is concerned about the policy positions behind the bulk of the science commissioned and used by New Zealand at the international fisheries level to the extent that there is a growing perception that scientific research funding is being allocated primarily on the basis of ENGO and conservation inclined interests to the detriment of supporting industry and utilisation approaches. In some forums, including SPRFMO, it is clear New Zealand wants to remain the only group in the room, and sole recipient of data, so they control the outcomes; something which has been admitted. A consequence of this is NIWA continues to have a monopoly on the receipt of funding, absent any outside influence, and it is apparent members have bought into this position.

## Overview of our papers

On the basis of the above, three fundamental questions arise from this paper:

- What **reasonable person** would assert that reducing the intact status of a marine organism by less than 1% will somehow 'compromise ecosystem integrity' (FAO 2008 paragraph 17) and therefore constitute a 'significant adverse impact'?
- What **reasonable fishing nation** would be willing to adopt this same standard inside its own EEZ?
- What would be the effect on other SPRFMO fisheries if the same maximum impact threshold were set for other non-target species such as sharks or seabirds or non-target fish?

## What precedents are we setting?

Imagine you are a stock spatial risk assessment scientist. You have produced a stock bottom fishing impact assessment, using a well-established method that everyone agreed to, before they saw what the answer was.

The stock impact assessment estimates that the current status of your fish stock VME taxon is above 75-95% of  $B_0$ . Annual removals impacts are low, so equilibrium status at current catch levels is projected to remain above 65-90%, with high precision and low uncertainty. The management target is to avoid going below Biomass for Maximum Sustainable Yield ('BMSY'); the SAI threshold. Nobody has decided what BMSY the SAI threshold actually is for your fish species VME taxon, but there are international precedents for using rates of 40-50 and 50-80%.

Then, during COVID, when attentions were largely directed elsewhere, a different method was proposed, which ignores current status. Furthermore, it ignores future projected status and does not consider annual removals impacts. It does not make reference to BMSY SAI.

Under the new method, your fish stock VME taxon is considered to be at high risk of over-exploitation because it is possible that less than 30-70% of the fish VMEs occur inside of MPAs closed areas. Because the spatial distribution of the fish VME taxon is uncertain (and the new

method doesn't use any other inputs) everyone concludes that the risk is highly uncertain. On this basis, new fishery closures are imposed under which 80-99% of the area is closed to fishing, including 50-80% of the formerly fished area.

Your fishery is uneconomical and ceases to operate. The world concludes that you failed in your job to manage the fishery sustainably, because it has become completely commercially unviable to conduct bottom fishing sustainably.

This is an outcome the HSFG is seeking to avoid.

### Conclusion

In conclusion, HSFG is here to help and deliver for members, something we have done for more than a decade since inception of SPRFMO and the interim measures. Our numerous papers have maintained a consistent theme, which is to allow for sustainable and responsible fishing in areas where fishing is allowed, while having as little impact as possible. In simple terms this is what the UNGA, the FAO, and the SPRFMO Convention all mandate. The fact that fishing effort has decreased substantially over the years must also be considered; given the scale of the SPRFMO area, 2 or 3 vessels going out for a few weeks per year into the very limited areas open to trawling cannot be considered high impact. We have at all times attempted to help members to understand what transpires 'at the coal face' of high seas fishing.

The HSFG's submissions to New Zealand officials and all members about the consequences of these positions have been regularly ignored or not acted upon, with the consequence being the systematic dismantling of the fishery. As a result of successive SPRFMO CMMs and the resultant operationalism by officials, New Zealand's high seas fishing industry has been systematically reduced to nil over 15 years. This is despite wild caught fish being a demonstrably better source of animal protein than many other sources across a range of metrics.<sup>7</sup>

HSFG has no desire to critique the work of SPRFMO without proposing constructive solutions and providing assistance in delivering those solutions.

To this end, and rather than simply opposing change, the HSFG has previously proposed new approaches to be taken in international fisheries. Feature based management was proposed by the HSFG in 2010, as part of an argument that the then interim measures were overly complex and failed to recognise that fishing generally only ever affects, at most, a small or minor part of the habitat or vulnerable species.<sup>8</sup> Notwithstanding these efforts, in 2019 through CMM 03-2019 this footprint area was significantly reduced again to approximately 0.1% of the total SPRFMO area.

HSFG's concern is largely based on the impact that the incorporation of unquantified and poorly understood concepts, flawed models, and poor science into SPRFMO has already had on New Zealand's commercial operators, such as those described above.

On these bases HSFG and its constituents assert and urge members to consider a position whereby no further restrictions are considered within SPRFMO. This will enable a comprehensive review of New Zealand's last input to the SPRFMO Science meeting, held in Panama in September 2023; the same forum at which the HSFG exposed flaws in the information submitted, which was

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<sup>7</sup> R Hilborn et al., "Evaluating the sustainability and environmental impacts of trawling compared to other food production systems" *ICES Journal of Marine Science*, 2023, 0, 1-13.

<sup>8</sup> HSFG 2010. Management of Deepwater Fisheries by Seafloor Feature in the Southern hemisphere South Pacific Oceans. High Seas Fisheries Group, Nelson, New Zealand, page 5.

the subject of an extensive paper submission by the HSFG. New Zealand's officials have previously intimated a sympathetic position but claim the multilateral nature of SPRFMO means that a range of nations have responsibility for the systematic restrictions. In short New Zealand Officials blame other members for the destruction of deepwater fishing by New Zealand in SPRFMO waters.

We ask that members please take the time to become familiar with the background and basis for our arguments here, even if their own industries have no direct link to bottom fishing in SPRFMO. We fear that while members were preoccupied with other matters they have allowed vague arguments and shrill rhetoric, from those that would see bottom fishing banned, to undermine the very principles of sound science-based management and *truly* precautionary management that HSFG and the SPRFMO Convention have always been committed to. We have registered here our warning that if SPRFMO does not correct its course, we will, intentionally or inadvertently, set precedents in 2023/24 that undermine our collective commitment to transparent dialog, best available information, scientific integrity, and even legality under international law. We also warn that once established for bottom fisheries in SPRFMO, those dangerous precedents will have negative consequences also for other fishing methods, and in other jurisdictions.

The global bottom fishing industry is working hard and has been successful in minimising its effects on the environment, while providing economic benefits and a crucial source of protein for a growing world population. It is a demonstrable fact we are far better at feeding the world without heavy environmental impacts in the marine environment than in our terrestrial environment. We stand in opposition to those who would use vague or emotive arguments to undermine sustainable food production without reference to sound scientific and legal principles.

Every week we are seeing papers on bottom fishing from reputable scientists and sources that are making it clear that bottom fishing is not as destructive as some would have you believe. That is because they are finally doing the work to quantify and understand things better. Again while this is happening let's not put the industry out of business, as once vessels are gone they won't come back.

The HSFG regards itself as an accurate and objective source of information on high seas fishing, and to this end it maintains an extensive repository of data and other materials dating back to the formation of SPRFMO.



Andy Smith

Chair HSFG

## **HSFG summary of Australia-New Zealand response to HSFG comments on the BFIA**

Below we repeat our numbered assertions from our presentation of paper SC-Obs02, to which NZL has provided a response. We note that in most places NZL is acknowledging/ agreeing with our assertions. That they provide a lot of additional commentary under each numbered point to claim that our numbered assertions somehow don't matter (what I would label the "Yes, but...." response) should not detract from the fact that they are acknowledging the factually true nature of our assertions.

### **HSFG numbered assertions in blue; our summary of NZL response in red**

1. The re-presented BFIA did not go through the usual process of technical review via the Fisheries New Zealand SPACWG

- NZL agrees.
  - o That NZL refers to the SPACWG and SC process of **2019** is explicit acknowledgement that that process did not happen in 2023

2. The 'percent protected' analysis is not an impact assessment, and does not address the requirements of the BFIA (see also SC11-Obs01).

- NZL agrees

3. The impact assessment in the re-presented BFIA has not been updated

- NZL agrees

4. Impact assessment results shown in the re-presented BFIA are not only outdated, they are directionally biased; these outputs will over-estimate true impact by a factor of roughly 2-6

- NZL agrees with the directional bias,
  - o and also agrees that the magnitude is impossible to determine

5. The impact assessment results are clear that none of these impacts exceed any existing precedent for what may constitute a 'significant adverse impact'.

- NZL declines to engage the question: instead they point out that there is no agreed definition of SAI,
  - o BBut this is not the same as asserting there are no international precedents
    - note that the BFIA itself already cites an international precedent, from MSC;
  - o Note also that NZL paid for a new review to investigate and summarise all such precedents (the 'exploring SAI thresholds' work in part funded by the EU)
    - **but then NZL declined to present the results of that review to the SC this year.**

6. The new spatial closures proposed under SC11-DW05 are completely unrelated to the results of the

impact assessment.

- NZL agrees

7. We can find no scientific justification to discard the base case HSI estimates and only present the ROC line and 'power' sensitivity outputs.

- NZL claims that the justification is in the original BFIA, where it is asserted that the transformed estimates are likely to be a better index of abundance
  - o But there was no subsequent decision to discard the original base case;
  - o if the justification were already there in 2019, then why were the original outputs only filtered out in 2022?
  - o and why are all of the analyses and 'validations' we have seen for the past 3 years done with reference to the original base case, if it's not what we are meant to be using?

8. The predictive power of the HSI models has never been demonstrated for the SPRFMO area or at the scale of the FMAs.

VME spatial model validation has only ever been carried out at the scale of the full model spatial domain, which includes the entirety of the New Zealand EEZ.

- NZL agrees

Most of the data to which the HSI models are fit are from temperate latitudes (e.g. the Chatham Rise); a

tiny proportion of the data comes from the SPRFMO area.

- NZL agrees

8.1. SC11-DW07 strongly suggests that if proper validation were done, we may learn that the HSI models are not fit for purpose within SPRFMO

- NZL '*strongly rejects this statement*' but then makes reference to different 'validations' that are not even similar to the ones we are referring to from SC11-DW07 and do not even try to address the concerns we have raised (i.e. over-fitting, extrapolation outside the environmental space)

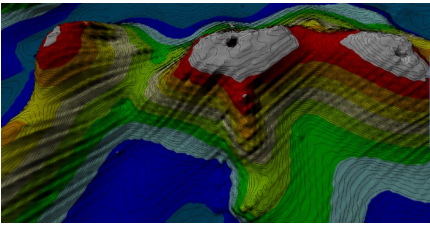
The authors write "using Pearson's correlation measure, 0.4 is considered good (based on a subjectively defined threshold)"; 12 of 15 taxa failed this test for the new abundance models (and this is a weak test; data withheld randomly not geographically).

- NZL agrees, but claims they are quoted out of context regarding how much model power is 'good enough'

Such a big drop in model power is clear evidence of over-fitting

- NZL initially proposes there could be another explanation for the drop in model power, but they don't identify what it could be.





- Then the reverse position and agree with us, saying “the final ensemble model fits should be treated with caution too, as they are likely overly ‘optimistic’ fits because they are based on the full training dataset”...
  - o this is precisely what is meant by over-fitting.

“and this is a weak test; data withheld randomly not geographically”

- NZL disagrees that it’s a weak test; nonetheless they do not claim to have passed the test.

Why aren’t similar validations shown for the HSI models actually used for CMM03?

- NZL does not engage the question; instead NZL points out that they did something else entirely.

8.2. There is no statistical relationship between modelled VME abundance and HSI. This conclusion was equally true for the base case HSI, the ‘Roc-0 linear’ sensitivity and the ‘Power Mean’ sensitivity. If the abundance models and the HSI models were indexing the same property (abundance) we should see a line, not a cloud of points.

The scientists presenting this work to the SPACWG concluded that “HSI is not an index of abundance”

- NZL agrees,
  - o But claims it’s not a problem because HSI was never meant to represent abundance
    - But this is directly contradicted by their response to our point #7, above, where they said. “Second, the HSI scores for each taxon were transformed to estimates of **abundance** using power curves estimated using information on the cover or **abundance** of VME indicator taxa within grid cells for which HSI predictions were available. **These estimates of abundance** were summed for cells inside and outside the BTMA to estimate the proportion of the overall **abundance** inside and outside the BTMA”

8.3. There is almost no statistical relationship between modelled VME abundance and VME bycatch, or between HSI and VME bycatch, including the transformed HSI sensitivities.

- NZL agrees but says it’s not surprising because
  - o i) bycatch does not represent abundance; and
  - o ii) HSI models do not represent abundance
    - Say explicitly “**HSI and HSI ROC-linear are not indexing abundance nor biomass**”
      - How are we meant to reconcile this with the text from answer #7, reproduced in 8.2, above?

Either: a) these models are not an index of VME abundance on the ocean floor; or  
b) VME bycatch is not an index of VME abundance on the ocean floor; or

- c) both a and b
  - If a) is true then HSI models are not adequate to evaluate spatial closures;
  - If b) is true then the move-on rule causes increased impact, and should be abandoned.
- NZL agrees
  - o **NZL has already acknowledged in its earlier answers that both a) and b) are TRUE**
- NZL claims that “the logic is flawed” because statements a) and b) do not follow from statement 8.3;
  - o but nonetheless NZL already acknowledged both statements are true;
- Regarding the logic of the implications (i.e. the ‘if-then’ statements):
  - a) The scientific committee has already agreed *“estimation of the fraction of VME indicator taxa abundance protected [by the spatial management measures] depends strongly on the ability of the available habitat suitability models to infer abundance”* (SC9 report executive summary).
    - **Is NZL disagreeing with this SC text?**
  - b) The proof that the move-on rule increases impact is based on logic/ first-principles, we are of course not relying on the data to prove it (the whole point of this assertion is that we are saying the data are too poor to be used in this way)
    - a. In any event, **by what logic would we be closing areas of the ocean floor based on data that we all agree do not provide an accurate indication of what exists on the ocean floor???**

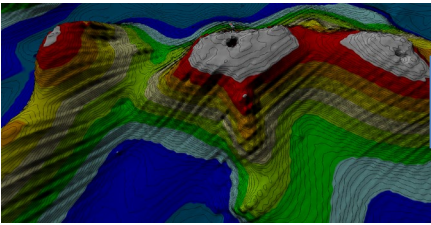
Annex B:

Total SPRFMO area is 49,000,000 km<sup>2</sup>

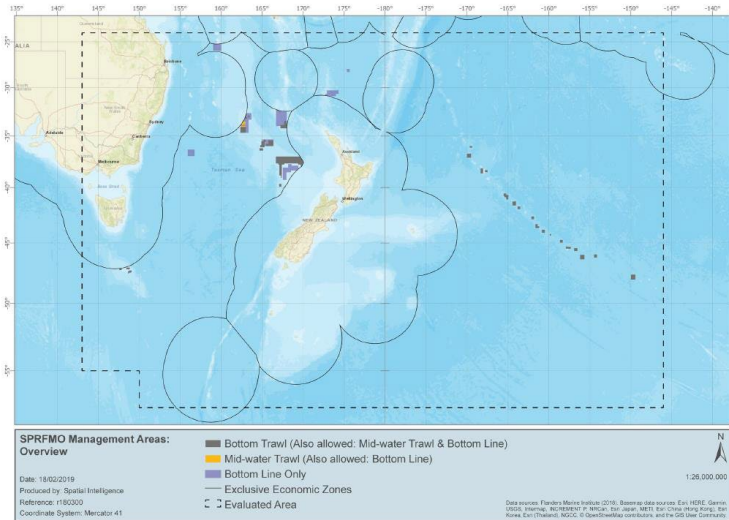
- The new Evaluated area within SPRFMO is 12,863,560 Km<sup>2</sup> (excluding land mass)
- Within the Evaluated area that is open to bottom trawl (63,745 km<sup>2</sup>), **0.50 %** is open **or.13%** of the area under management by SPRFMO soon to be **.07%**
- The area accessible by bottom trawl depth (up to 1500m) is 9452 Km<sup>2</sup>–**0.019 %**of the area under management by SPRFMO - And within this area the trawl tracks represent a small fraction of the **0.019%.**

The effect of the new measures is to close areas to bottom trawling amounting to 99.93 % of the total SPRFMO area. NOTE the remaining 0.07% has been made subject to a move on rule, notwithstanding that the convention provides for the **sustainable use of the fishery resources**. When I compare the area of the 2019 open boxes with the evaluated area (minus the area of NZ and portion of Australia that is within the evaluated area, I conclude that **0.5 %**of the evaluated area is open to fishing and not **5.5 %**as stated by New Zealand in COMM7-Prop 03.1

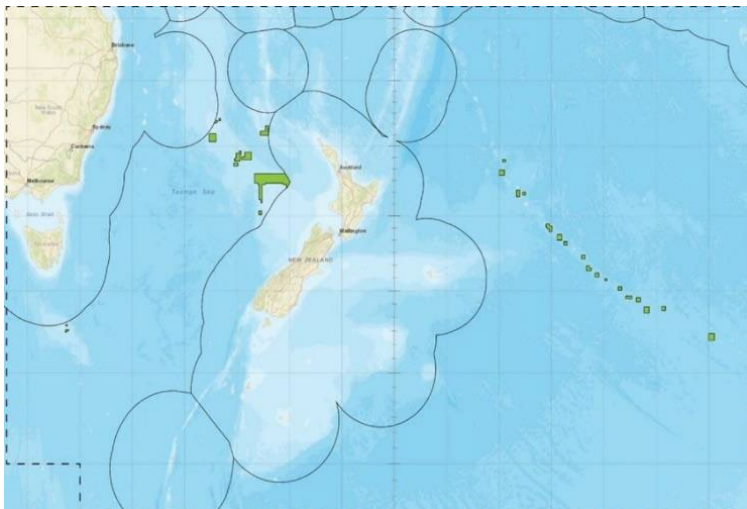
This slide below shows the Evaluated area (defined below) noting that bottom trawling was previously open across the whole of the SPRFMO area is now restricted to this much reduced area. *For the purposes of this CMM, the term “Evaluated Area” means those parts of the Convention Area that are within the area starting at a point of 24°S latitude and 146°W, extending southward to latitude 57°30S, then eastward to 150°E longitude, northward to 55°S, eastward to 143°E, northward to 24°S and eastward back to point of origin.*

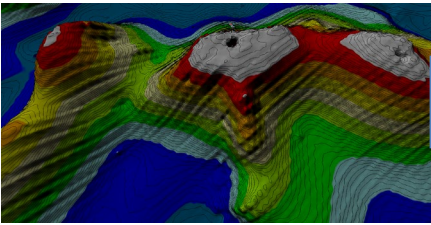


## ANNEX 1: SPRFMO Bottom Fishing Evaluated Area and Bottom Fishing Management Areas



The slide below shows the evaluated area against the backdrop of the SPRFMO area. We remind members that inside the evaluated area only a fraction of the area is actually fished. I suggest strongly this is hyper-precautionary and at odds with sustainable use of fishery resources. 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 long-term 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.





# High Seas Fisheries Group Incorporated

