Department of Conservation *Te Papa Atawhai*

Ministry for Primary Industries
Manatū Ahu Matua

Oceans Secretariat Briefing

Read

In Confidence

MPI ref: B23-0053
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To: Minister for Oceans and Fisheries
Minister of Conservation

Date: 20 February 2023

Cc: Minister for the Environment
Minister of Foreign Affairs

Subject: **Managing the effects of bottom trawling in the Exclusive Economic Zone forum: update and timing of next steps**

Action sought: Note the contents of this briefing and agree to discuss timing of next steps with officials.

Time Frame: Decision required by 23 February

Risk Assessment: There is a high level of public and international eNGO interest in the progress of this work and extended delays may result in negative perceptions and media coverage.

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Executive summary

1. There has been increasing attention and pressure both domestically and internationally regarding the effects of bottom trawling on the benthic environment (sea floor). A petition was presented to the House of Representatives in 2020 (signed by 52,443 people online) to ban bottom trawl fishing on seamounts and similar deep-sea features within New Zealand.

2. A multi-stakeholder forum was established last year, by previous Ministers, to develop recommendations on how best to manage the impacts of bottom trawling on the benthic environment within New Zealand's Exclusive Economic Zone.

3. The forum has agreed high-level objectives. However, they could not agree on management recommendations and have provided two sets of independent and different recommendations. These independently represent the views of the Deepwater Group and combined eNGO forum members. The intended next steps are to further engage with tāngata whenua to understand their rights and interests in regard to this issue, develop a range of management options for your consideration and undertake public consultation, pending Cabinet approval.

4. Earlier delays to the progress of the Forum have pushed back the timeline for the development of policy proposals. If you decide to target policy decisions before the election, officials consider the earliest Cabinet approval of proposals could be sought is August 2023, which is within the pre-election period.

5. We recommend you discuss the priority and timing of this work with officials given the challenges of progressing policy decisions within the pre-election period.

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Purpose

6. This briefing provides an overview of the outcomes from a multi-stakeholder forum established to provide recommendations on managing the effects of bottom trawling in New Zealand's Exclusive Economic Zone (EEZ) and seeks your agreement to discuss next steps and the associated timeline with officials.

Background and context

7. Bottom trawling is a key fishing method used in New Zealand, being used to take over 65 percent of all fish caught and the deepwater fisheries which operate in the EEZ are worth an estimated $680 million per year in export value.

8. There has been increasing attention and pressure both domestically and internationally regarding the effects of bottom trawling on the benthic environment. Much of the attention is focused on the impacts of bottom trawling on underwater features, such as seamounts, which rise above the seafloor and can support an exceptionally high richness of species, including species protected by the Wildlife Act 1953.

9. A petition on behalf of the Deep-Sea Conservation Coalition (DSCC) – a collection of international eNGOs that promote the conservation of biodiversity on the high seas – was presented to the House of Representatives on 26 November 2020. The petition (signed by 52,443 people online) requests legislative change to ban bottom trawl fishing on seamounts and similar deep-sea features in New Zealand.

10. As part of the submission of evidence to the Environment Select Committee hearing, DOC and MPI jointly considered the concerns raised by the petition and concluded that the impacts of bottom trawling on protected species and other seafloor taxa are of sufficient environmental concern to warrant consideration of additional management.

11. In New Zealand, impacts of fishing on the benthic environment are currently managed through spatial closures, most notably Seamount Closures and Benthic Protection Areas (BPAs) which close around 30 percent of the EEZ, or 14 percent of the fishable area <1600m, to bottom trawling and dredging, and restrict midwater trawling.

12. The multi-stakeholder forum was established in April 2022 under the previous Minister for Oceans and Fisheries (B21-0571), with the main goal to develop recommendations on additional measures to manage the impacts of bottom trawling on the benthic environment in the EEZ.

13. The forum was convened and supported by Fisheries New Zealand and the Department of Conservation, and included:

    a. *Industry representatives*: Doug Paulin (Sealord Ltd), George Clement (Deepwater Group Ltd), Andy Smith (Fishing Consultant);

    b. *Environmental NGO representatives*: Kat Goddard (Greenpeace), Duncan Currie (Deepsea Conservation Coalition) and Barry Weeber (Environment and Conservation Organisations); and

    c. *National Iwi Chairs Forum representative*: Mike Smith

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14. The Terms of Reference **(Appendix One)** outlines the scope for the forum that was agreed to by the previous Ministers and members (refer B21-0571). The following is out of scope for the forum: the territorial sea and the high seas, fishing methods other than trawling on or near the seabed, management actions under any legislation other than the Fisheries Act 1996 (the Act) e.g., the Marine Reserves Act or special legislation, and the phasing out of bottom trawling.

The forum process experienced delays

15. The original timeline was for Forum meetings to begin in December 2021. Due to extensive negotiations between officials and some Forum members, agreement on the content within the Terms of Reference could not be reached until March 2022 with the first Forum meeting being held in April 2022.

16. Monthly meetings were originally planned to occur over a 6–7-month period, however due to limited availability of Forum members it was often challenging to ensure appropriate sector representation at meetings. This resulted in Forum meetings being held over a longer period with the final meeting taking place in January 2023 - seven months behind schedule.

This project is part of a broader range of ongoing work

17. This project is part of a collection of ongoing work to understand and manage the effects of bottom trawling on the benthic environment:

- The proposed Hauraki Gulf Fisheries Plan is one of the key actions in the Government strategy 'Revitalizing the Gulf'. There will be a significant reduction in the area where commercial bottom trawling is permitted, with trawl fishing to be restricted to carefully selected corridors of the Hauraki Gulf Marine Park and 18 new marine protected areas to be established.
- The South East Marine Protected Area proposal will also see a reduction in the area where commercial trawling is permitted. Six marine reserves and five Marine Protected Areas (MPAs), which prohibit trawling and dredging, are proposed.
- New Zealand has worked alongside other member nations of the South Pacific Regional Fisheries Management Organisation (SPRFMO) in developing proposed improvements to bottom fishing measures in the high seas of the South Pacific, based on the best available science. Officials have engaged with both eNGO and industry representatives, who have participated as observers in the review process. The SPRFMO Commission is currently underway in Manta, Ecuador and the New Zealand delegation will be involved in making decisions on improvements to the SPRFMO bottom fishing measure.
- The development of an Industry Transformation Plan (ITP), which will investigate longer-term management considerations, such as innovation to support less impactful, more selective fishing practices.

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Forum members have proposed two independent sets of management recommendations

18. Over the last 10 months, forum members have together explored the relative costs and benefits of a range of spatial management approaches, with the goal of being able to propose combined management recommendations.

19. The forum primarily focused on exploring spatial closures to bottom trawling. Additional management measures, such as biodiversity encounter protocols[1] and gear innovation, that could manage any residual risk associated with spatial measures, were discussed in the later stages of the forum.

20. The forum members were able to reach agreement on shared high-level objectives for the management recommendations:

    - Recommend areas for closure that build upon existing Benthic Protection Areas and Seamount Closed Areas which are already closed to bottom trawling.
    - By December 2022 recommend spatial management options that clearly define where bottom trawling can and cannot occur within the EEZ and give consideration to their operationalisation.
    - Consider the use of additional management options (such as biodiversity encounter protocols) and monitoring and review plans for management options, and provide recommendations on these by December 2022. Recommendations should define whether these are required in conjunction with the spatial management options to manage any residual risk to avoid, remedy or mitigate any adverse effects of trawling (on, or near, the seabed) on the benthic environment in the EEZ.
    - Ensure that all recommendations have regard to the risks climate change (including ocean acidification) poses to the biological diversity of the aquatic environment when providing recommendations.
    - Ensure that the rights and obligations of both parties to Te Tiriti o Waitangi are adhered to.

21. Members were unable, however, to reach a consensus on the management recommendations themselves. Views were often polarised between industry and environmental NGO (eNGO) members on the need for additional management measures. Differences included:

    - the need to protect seamounts (greater than 1000m) versus seamounts and seamount-like features (greater than 100m);
    - move-on rules and biodiversity encounter protocols;
    - interpretation of the Fisheries Act and relevant obligations;
    - the level of caution required when information is uncertain; and

[1] A biodiversity encounter protocol is a set of management actions that are followed when a fishing vessel catches certain benthic taxa above a particular amount. A management action that is commonly part of an encounter protocol is a move-on rule. Move-on rules require vessels to move a pre-specified distance away from an encounter when an encounter protocol is triggered.

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- New Zealand's international obligations relating to fishing.

22. Two sets of separate and different eNGO and industry recommendations were submitted in mid-December 2022. They are included in full in **Appendix Two** and are discussed further below.

23. Additional themes presented in the recommendations and common to all members include agreement on a need for more research to improve our understanding of benthic biodiversity in the EEZ, considering the climate change impacts on biodiversity, and a desire for forum members to continue to work with agencies.

An overview of the forum management recommendations

24. The recommendations present two ends of a spectrum of options that vary in scale of potential biodiversity protection and impact to fishing:

    a. The industry option proposes protection of an additional 49 seamounts over 1000m in elevation that have not been previously bottom trawled. s9(2)(g)(i) [redacted]

    b. The eNGOs presented three options that take different approaches to closing all seamounts and features with elevations over 100m (an additional ~1,100 seamounts and features) that are outside of existing protection to bottom trawling (as called for in the petition). Two of the three eNGO options also propose to freeze the trawl footprint, close additional high biodiversity areas, and introduce a biodiversity encounter protocol (including a move-on rule) and 100% observer coverage for bottom trawl vessels. s9(2)(g)(i) s9(2)(g)(i) [redacted]

25. Mike Smith, the member from the National Iwi Chairs Forum, did not formally submit a spatial recommendation. Mike did emphasise the following considerations for the development of management options (as an individual not a representative of the National Iwi Chairs Forum):

    a. That the rights and obligations of both parties to Te Tiriti o Waitangi be incorporated into all future processes and recommendations particularly the provision of mechanisms that enable both tino rangatiratanga and kawanatanga, in order to give effect to Te Tiriti o Waitangi;

    b. Engagement with tangata whenua is necessary prior to any public consultation and should be undertaken in conjunction with the National Iwi Chairs Forum;

    c. The objectives must align with the objectives of Te Mana o te Taiao to recognise the urgent response needed to the current biodiversity crisis;

    d. Climate change risk must be elevated in framing policy and regulation settings to protect vulnerable ecosystems; and

    e. All seamounts and similar features (>100m) that host vulnerable marine ecosystems such as protected corals and sponges should be protected.

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26. **Table 1:** Summary of spatial options proposed by forum members.

Spatial option		Close unfished seamounts >1000m	Close all seamounts >100	Freeze trawl footprint	Close high biodiversity areas off seamounts	Move on rule, 100% observer coverage
Industry		✓	✗	✗	✗	✗
eNGO	Option 1	✓	✓	✗	✗	✗
	Option 2	✓	✓	✓	✓	✓
	Option 3*	✓	✓	✓	✓	✓

* Option 3 has the same components as Option 2, however the method of closing areas is different - the entire EEZ is closed to bottom trawling and then specific areas are opened.

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Industry recommendation

27. The combined industry member recommendations represent an agreed approach by Deepwater group (DWG). DWG represents the collective views of the owners of 91% of the quota for deepwater fisheries. Industry participants note that this represents a consensus industry position.

28. Combined with current closures, this recommendation would restrict bottom trawling from 123 of the 144 seamounts over 1,000m in height in the EEZ.

29. s9(2)(g)(i)

30. In addition to the recommended seamount closures, the industry proposal included the development of an area within the EEZ that is zoned for sustainable food production by bottom trawling (i.e. securing the future of bottom trawling in parts of the EEZ). It is proposed that this zone be based on the 30-year trawl footprint and be managed under different environmental bottom lines. Industry is not proposing this as a spatial management measure to be implemented now and proposes that the details of this are worked through in dialogue with FNZ.

eNGO recommendations

31. The combined eNGO member recommendations outline three alternative management options that are stated to deliver the same outcomes. It is outlined in the eNGO recommendations that for each alternative option the management measures included should be implemented as a package and not partially implemented.

32. Option 1 largely reflects the petition discussed earlier in the briefing and proposes closing all seamounts and features with elevations over 100m within the EEZ that are outside of existing protection to bottom trawling. This

is based on the principle that features over 100m can be associated with deep-sea coral habitats and hotspots of deep-sea biodiversity.

33. It has been presented in joint FNZ and DOC evidence to the Environment Select Committee that the physical characteristics of small seamount-like features less than 1,000 metres above the seafloor affect biology in very similar ways to large seamounts greater than 1,000 metres above the seafloor.

34. Option 1 would result in the additional closures of approximately 1,100 features over 100m in elevation in the EEZ. s9(2)(g)(i) [redacted]

35. Indicative values of the impact to the catch of key deepwater fisheries of this spatial option were presented during the forum meetings. The combined impact of these closures when converted into fishing value across all key deepwater fisheries was approximately 6%.

36. This impact would not be evenly distributed amongst fisheries, with the impact being negligible for some fisheries and significant for others. For example, indicative data shows that approximately 36% of orange roughy and 19% of oreo have been historically caught in the areas proposed for closure under Option 1.

37. Options 2 and 3 provided in the eNGO recommendations build upon Option 1. Option 2 restricts bottom trawling to previously trawled areas, calls for closure of non-feature based high biodiversity areas, introduces a biodiversity encounter protocol/move on rule and stipulates 100% observer coverage for bottom trawl vessels.

38. Option 3 has the same components as Option 2, however the method of closing areas is different- the entire EEZ is closed to bottom trawling and then specific areas are opened. This is the approach that New Zealand and members of the South Pacific Regional Fisheries Management Organisation adopted to manage bottom fishing in the high seas of the Southwest Pacific Ocean. It is also the approach proposed to be undertaken for the Hauraki Gulf under the Government strategy 'Revitalizing the Gulf' for the establishment of trawl corridors.

Indicative maps and a summary assessment of the forum recommendations

39. Indicative maps and summary statistics of members' spatial recommendations are presented in **Appendix Three** and **Table 2**. These have been generated as part of ongoing work between officials and forum members to translate spatial descriptions provided in recommendations into practical spatial management options.

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40. **Table 2.** Indicative summary metrics of the biodiversity outcomes and impact to fishing for the forum spatial management recommendations. Figures in parentheses represent the range of values for different species.

Metric	Status Quo	Industry	eNGO	
			Option 1	Option 2/3
% EEZ area for proposed closures	-	8%	16%	51%
% EEZ area for total closures (proposed + current)	31%	39%	47%	82%
% fishable depth area for proposed closures (<1600 m)	-	0%	3%	40%
% fishable depth area for total closures (<1600 m; proposed + current)	14%	14%	18%	54%
% seamounts > 100 m in proposed closures	44%	52%	100%	100%
% seamounts > 1000 m in proposed closures	52%	85%	100%	100%
% of predicted distribution of protected corals in proposed closures	29% (4 - 62)	29% (5 - 63)	36% (15 - 75)	91% (82 - 100)
% total fishing value lost	0	0	6% (<0.1 - 36)	11.3% (0.1 - 57)

Progressing management options for public consultation

41. s9(2)(g)(i)

42.

43.

Risk assessment

44. The separate recommendations received reflect polarized views from eNGO

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and industry members, particularly different interpretations of the Fisheries Act 1996 and the relevance of international fisheries obligations and guidelines. s9(2)(g)(i) [redacted]

45. There has been significant public and international eNGO concern about the impact of bottom trawl fishing to the benthic environment in New Zealand and in the South Pacific. There has also been significant investment by key stakeholders to participate in the forum and reach a point of being able to provide management recommendations on this issue.

46. Prior to any consultation, the statutory requirement for input and participation of tāngata whenua will need to be provided for. Fisheries New Zealand will consider how best to engage with tāngata whenua and this will include engagement through Iwi Fisheries Forums.

Next steps

47. The original timing for this work, prior to the delays in the Forum process, was to provide advice to Ministers on consultation options in 2022. Further delays are likely given that forum members provided split and highly different management recommendations and officials will need to develop additional recommendations for consultation.

48. Given the delays in the Forum process, we consider the earliest public consultation could occur would be May/June. We note, however this would place consideration of final advice and Cabinet approval of proposals during the pre-election period. The pre-election period will commence this year on 14 July 2023, and applies to government decisions and actions in the lead up to the 14 October election (CO(23)1).

49. This approach would also carry process risks given the condensed timeframe, including limitations on how extensive our engagement with tāngata whenua could be prior to consultation, while meeting our statutory requirements as a minimum.

50. We recommend you discuss the priority and timing of this work with officials given the challenges of progressing policy decisions within the pre-election period.

51. You may wish to consider targeting Cabinet decisions after the election. This would provide more time for officials to develop management options, a longer pre-consultation period and opportunity for more extensive engagement with tāngata whenua.

52. A delay to the progress of responding to the forums recommendations will likely result in a negative public and eNGO response due to a perceived lack of progress/action on this issue. This may be mitigated with clear communication of a revised timeline and planned next steps.

53. Pending this discussion and/or further advice from you both, officials can provide further advice to you on a proposed range of options for public consultation.

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54. There will likely be overlap with the advice and consultation associated with the Industry Transformation Plan (ITP). The Minister for Oceans and Fisheries will receive a separate briefing on the development of the ITP [refer B23-0059].

ENDS

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We recommend that you

		Decision
(a)	**Note** that the Managing the Effects of Bottom Trawling in the Exclusive Economic Zone forum has agreed high-level objectives to support the development of management options.	Noted
(b)	**Note** that the forum could not agree on management recommendations, and the Deepwater Group and combined eNGO members have provided two sets of independent and different recommendations.	Noted
(c)	**Note** that the recommendations received represent a broad range of spatial closures and include additional management measures, such as biodiversity encounter protocols and observer coverage.	Noted
(d)	**Note** that officials are currently developing further spatial management options for you to consider, in addition to those that have been proposed by the forum members.	Noted
(e)	**Note** that if you wish to target policy approval before the election, this will require Ministerial and Cabinet decision-making in the pre-election period (which will commence this year on 14 July 2023, and applies to government decisions and actions in the lead up to the 14 October election).	Noted
(f)	**Agree** to discuss the next steps and proposed timing of the consultation period and policy decision-making with officials.	Yes/No

Emma Taylor
Director, Fisheries Management, Ministry for Primary Industries

___ / /

Hon Stuart Nash
Minister for Oceans and Fisheries

Amber Bill
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___ / /

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Joint eNGO Exclusive Economic Zone Benthic Forum Recommendations for the Department of Conservation and Fisheries New Zealand

20th December 2022

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Summary Spatial Recommendation:

The Deep Sea Conservation Coalition, ECO and Greenpeace Aotearoa recommend protecting all seamounts and features within the Exclusive Economic Zone of Aotearoa, alongside protecting priority high value biological benthic areas from bottom trawling by the 1st October 2022.

We have proposed options to operationalise this, with key principles. These key principles are designed to be implemented as a package.

This spatial recommendation meets the legal requirements of the Fisheries Act, Wildlife Act, international obligations, and domestic mandatory policies, alongside the seven objectives and terms of reference of the Benthic Forum.

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Context for eNGO Recommendations

Deep sea corals, delicate sponges, and other vulnerable marine species - including many that are listed as protected species under the Wildlife Act 1953 - are at risk from bottom trawl fishing within the Exclusive Economic Zone (EEZ) of Aotearoa.

Bottom trawling is a destructive fishing method that uses heavy nets dragged across the seabed to catch deep-sea fish, to date approximately 21% of the EEZ has been bottom trawled over the last 30 years. Bycatch data from the 2020-21 fishing year indicates 94 tonnes of corals, sponges, and bryozoans were dragged up in trawl nets as bycatch, along with 22 tonnes of other benthic species.[1] A breakdown by trawl sector for that fishing year is not yet released, however in previous years the squid fishery and deep-water bottom trawl (orange roughy, cardinal, and oreo) fisheries have accounted for over 90% of coral bycatch.[2] Furthermore, scientific studies indicate that what comes up in the net is only a fraction of what is destroyed on the seabed.[3]

Seamounts and similar features (widely defined as undersea mountains that rise more than 100m from the surrounding seafloor[4]) are known to be associated with deep-sea coral habitats,[5] and are hotspots of deep-sea biodiversity.[6,7,8] NIWA scientists have shown in Aotearoa that it is not the height of the seamount above the seafloor, but the depth of the seamount summit from the surface that influences the abundance and diversity of endemic, rare and vulnerable invertebrates like corals and sponges.[9]

Deep-sea corals are critical, as they form biogenic habitat, provide sanctuaries, and nursery areas for many associated species, including various invertebrates and fish, including orange roughy and deep-sea cardinal fish species.[10] Only a fraction of seamounts and associated biodiversity in Aotearoa has been sampled or surveyed, and what is known is that Aotearoa seamounts host abundant and diverse benthic life, including taxa protected under the Wildlife Act 1953, and taxa classified as vulnerable

[1] Fisheries New Zealand, 2021
[2] Conservation Services Programme Annual Research Summary 2018-19, 2019-20
[3] These figures represent only what is recorded by fishery observers or self-reported by fishers. However, we know that only a small fraction of coral that is smashed on the seabed makes it up to the surface in the net. Based on work by Australian scientists presented at SPRFMO (Pitcher *et al* 2019) the amount of coral destroyed on the seabed may be 108-340 times greater than the amount that comes up in the net.
[4] Staudigel et al., 2010
[5] Tracey & Hjorvarsdottir, 2019
[6] Ministry for the Environment and Statistics New Zealand, 2019
[7] Iyer et al., 2012
[8] Schlacher et al. 2014
[9] Tracey & Hjorvarsdottir, 2019
[10] Rowden & Clark, 2004.

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marine ecosystems (VME) indicator species.[11,12] VME indicator species include rare and unique species, species that are functionally significant to the health of marine habitats and species which are particularly complex, slow growing or long lived.[13] There is evidence of extensive coral endemism within Aotearoa, with over 196 known endemic coral species.[14] With more research this number will increase.

Recently, scientists in Aotearoa have identified 135 taxa new to science from fisheries bycatch samples collected between 1994 to 2020, including 128 new species, six new genera and one new family, as part of an invertebrate identification project.[15] Research has also demonstrated that seamounts in Aotearoa are incredibly unique as the assemblages of macroinvertebrates (like corals and sponges etc.) can be distinct from neighbouring seamounts separated by relatively small distances (tens of kilometres).[16] This means a small area of ocean with several seamounts could have entirely unique and even endemic macroinvertebrate communities. For more information refer to the report, *Biodiversity on Seamounts in Aotearoa* (2021).[17]

When bottom trawling (including other forms of trawling that involve the net contacting the seabed) is done on seamounts and features, endemic, rare and vulnerable species (VMEs) are put at risk of damage or destruction. Concerningly, recent research in Aotearoa shows that some of the very areas that scientists are discovering new species from are also the same areas being bottom trawled. This means there is the potential for New Zealand vessels to destroy endemic or rare invertebrate (VME) species before they can be discovered and identified. This highlights the importance of taking a precautionary approach and protecting these important deep-sea ecosystems and associated biodiversity, like those around seamounts.

Aotearoa has signed up to numerous international resolutions that commit us to preventing significant adverse impacts on vulnerable marine ecosystems and threatened species, and has a range of domestic requirements including under the Fisheries Act 1996, Te Mana o te Taiao, the Wildlife Act 1953 and the Exclusive Economic Zone and Continental Shelf Act 2012, as set out in Goddard (2021).[18]

[11] NIWA, 2016
[12] Note some taxa in Aotearoa are also classified as VME indicator species by the South Pacific Regional Fisheries Management Organisation, which NZ also has straddling fish stocks.
[13] Watling & Austin, 2021
[14] Tracey & Hjorvarsdottir, 2019
[15] Schnabel et al., 2021
[16] Rowden & Clark, 2004
[17] Goddard, 2021
[18] Goddard, 2021 pages 9-16

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In 2020, an alliance of environmental groups presented a petition to newly appointed Minister of Oceans and Fisheries, David Parker, calling for an end to bottom trawling on seamounts and similar features in Aotearoa waters and by New Zealand vessels in the South Pacific. At the time, the petition had 52,443 signatures - that number is now over 80,000. In 2021, 79% of respondents to a Horizon Poll agreed that the government should ban bottom trawling on seamounts.[19]

Previous efforts to close areas for benthic protection within the EEZ, primarily the Benthic Protection Areas (BPAs), established in 2007, have focused on avoiding areas used by the fishing industry, and have failed to provide adequate biodiversity conservation value. A recent study by NIWA has shown that existing BPAs, for example the Mid-Chatham Rise and East Chatham Rise, contain on average 20% of the known benthic invertebrate species.[20] Therefore, existing BPAs lack biodiversity value or species representativeness.[21,22] Clark *et al.* (2019) demonstrated that an approach based on known biological diversity or likely locations of suitable habitat could provide on average 85% representation of known benthic invertebrate species, from the same scale of closures.[23] We describe here a spatial proposal that would take a science-based approach to benthic protection, closing areas of known and predicted benthic biodiversity and focusing on seamounts and features associated with species diversity and as indicators of habitat suitability. We present this on behalf of over 80,000 people that have called on the New Zealand government to protect deep-sea biodiversity by closing seamounts and features to bottom trawling.

The EEZ Benthic Forum was established with the purpose, as stated in the terms of reference,[24] *to make recommendations on potential management measures to avoid, remedy or mitigate any adverse effects of trawling (on, or near, the seabed) on the benthic environment in the EEZ.*

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[19] Hooper (2022) Horizon poll reveals nearly 80% of NZers want bottom trawling banned on seamounts
[20] Clark et al., 2019
[21] Rieser et al., 2013
[22] Leatherwick et al., 2008.
[23] Clark et al., 2019
[24] EEZ Benthic Form Terms of Reference: https://www.mpi.govt.nz/dmsdocument/52099-Managing-the-effects-of-bottom-trawling-in-the-Exclusive-Economic-Zone-Forum-Terms-of-Reference

EEZ Benthic Forum Objectives

All recommendations put forward by Forum members must comply with the EEZ Benthic Forum objectives. Forum members proposed a range of objectives, and based on these proposals and additional feedback, officials drafted a series of management objectives for consensus agreement by Forum members. Objectives not agreed to by all members of the Forum were to be included separately, with rationale.

All proposed Forum objectives needed to be consistent with the Fisheries Act 1996, the Wildlife Act 1953, and New Zealand's international obligations relating to fishing and domestic policies.

The Forums consensus objectives are:

1. *Recommend areas for closure that build upon existing Benthic Protection Areas and Seamount Closed Areas which are already closed to bottom trawling.*

2. *By December 2022 recommend spatial management options that clearly define where bottom trawling can and cannot occur within the EEZ and give consideration to their operationalisation.*

3. *Consider the use of additional management options (such as encounter protocols) and monitoring and review plans for management options, and provide recommendations on these by December 2022. Recommendations should define whether these are required in conjunction with the spatial management options to manage any residual risk to avoid, remedy or mitigate any adverse effects of trawling (on, or near, the seabed) on the benthic environment in the EEZ.*

4. *Ensure that all recommendations have regard to the risks climate change*[25] *(including ocean acidification) poses to the biological diversity of the aquatic environment when providing recommendations.*

5. *Ensure that the rights and obligations of both parties to Te Tiriti o Waitangi are adhered to.*

The following two objectives were proposed by the eNGO sector and built on previously developed management objectives drafted by officials. These two objectives were not agreed to by the commercial fishing sector representatives on the Forum:

6. Using a precautionary approach, by December 2022 identify areas for closure to bottom trawling that contain significant biodiversity (including protected,

[25] *e.g., having regard to any predicted change in the distribution of protected benthic taxa under climate change scenarios*

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threatened, endangered, rare and/or vulnerable benthic taxa and ecosystems), including seamounts and similar features over 100m elevation.

7. All recommendations meet the objectives of Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy (2020), specifically objectives 12 and 15[26] and give effect to the Wildlife Act (1953), specifically species listed on Schedule 7A[27] which are to be absolutely protected throughout New Zealand and New Zealand fisheries waters.

Rationale for Objectives 6 and 7

The eNGO sector recommends agencies (Department of Conservation and Ministry for Primary Industries) include Objectives 6 and 7 when assessing the effectiveness of all EEZ Benthic Forum member spatial recommendations.

Objective 6 is to ensure that a precautionary approach is applied when identifying areas to be closed to bottom trawling, given the significant level of impact from bottom trawling on biodiversity, and given the uncertainties and limited biological information available.

Clarke et al. (2010) found that as few as ten individual bottom trawls can reduce deep-sea coral forests to rubble.[28] This is important as it not only illustrates the significant impact trawling has had, but that trawling on new areas, even just a few times, can have catastrophic cumulative impacts to deep-sea benthic communities and ecosystem services.

The precautionary principle in the context of EEZ Benthic Forum means that precaution is taken to protect the environment, even where there is not yet enough evidence or scientific information to provide certainty on cause and effect or prove causation of harm,[29] such as the impact of bottom trawling on benthic biodiversity and habitat. The precautionary principle is incorporated in the Fisheries Act 1996, s 10.[30] To date the application of the precautionary principle has been ineffectively applied in fisheries management. Applying precaution is not just a domestic requirement, but an international

[26]Objectives 12.2 (12.2.1, 12.2.2, 12.2.3) and 12.5 (12.5.1, 12.5.2 and 12.5.3); https://www.doc.govt.nz/globalassets/documents/conservation/biodiversity/anzbs-2020.pdf

[27] Wildlife Act 1953 Schedule 7A: https://www.legislation.govt.nz/act/public/1953/0031/latest/whole.html#DLM278598

[28] Clark et al. (2010) found that for New Zealand seamounts in depths of 700 - 1,000m as few as 10 trawls could eliminate corals from 15 to 20% cover to no visible cover.

[29] Iorns, 2014

[30] Fisheries Act 1996 s 10 Information principles: All persons … under this Act … shall take into account the following information principles:
(a) Decisions should be based on the best available information;
(b) Decision makers should consider any uncertainty in the information available in any case;
(c) Decision makers should be cautions when information is uncertain, unreliable, or inadequate;
(d) The absence of, or uncertainty in, any information should not be used as a reason for postponing or failing to take any measures to achieve the purpose of this Act

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one and is well established. The Fish Stocks Agreement 1995 requires its application in Article 5 and it is elaborated in Article 6.[31] The 1995 FAO Code of Conduct for Responsible Fisheries[32]adopts the precautionary principle as part of fisheries management policies.

On this basis we recommend including the eNGO management objective specifically requiring a precautionary approach.

Objective 6 also acknowledges that seamounts and features over 100m within appropriate core coral depth ranges[33], in this case waters less than 1,600m (the depth bottom trawling is restricted to)[34] are best proxies of habitat that are likely to contain protected corals, or endemic, rare and vulnerable benthic invertebrate species (VMEs). On this basis we recommend agencies include this eNGO management objective requiring protection of all known seamounts and features.

The Forums ToR refer to both the Fisheries Act 1996 and Wildlife Act 1953, objective 7 reflects this mandatory obligation for agencies to assess recommendations against the Wildlife Act, and specifically lists the appropriate schedule to ensure agencies don't focus on only assessing recommendations against the Fisheries Act.

The Wildlife Act 1953 in Schedule 7A lists the marine species that are absolutely protected. In 2010 the Act was amended to protect four coral groups these are; black corals (all species in the order Antipatharia), gorgonian corals (all species in the order Gorgonacea), stony corals (all species in the order Scleractinia) and hydrocorals (all species in the family Stylasteridae).[35]

Under the Wildlife Act the protection status means it is illegal to hunt or kill these animals (s 63A), but under s 63B a permitted commercial fisher can destroy and kill any protected coral species while fishing in the waters of Aotearoa, as long as they record the event and report it in writing within 48 hours (or as soon as practicable) and return the protected coral to the sea immediately.[36] But the exception only applies to "*accidentally or incidentally*" killing or injuring any marine wildlife.

Given the known locations of protected deep-sea corals using the best available information, there is a legal question to define: "***accidentally or incidentally*"**. If key agencies (MPI and DOC), and commercial fishers, know protected species are within the

[31] The Fish Stocks Agreement 1995 https://www.un.org/depts/los/convention_agreements/texts/fish_stocks_agreement/CONF164_37.htm

[32] Food and Agriculture Organization of the United Nations, Code of Conduct for Responsible Fisheries, 1995

[33] Core coral depth distribution range based on Tracey & Hjorvarsdottir (2019) are between 200 - 1,000m deep (not height of seamount or feature). This means many protected corals in Aotearoa are unable to live on deeper seamounts, even those that have elevations over 1,000m as they are simply too deep.

[34] Tracey, 2018.

[35] Wildlife Act 1953 Schedule 7A: https://www.legislation.govt.nz/act/public/1953/0031/latest/whole.html#DLM278598

[36] Unless part of an observer collection program

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areas being bottom trawled, e.g. on seamounts and features within the trawl footprint, then they are not accidentally or incidentally killing or injuring these absolutely protected species. Section 63B is a measure that should be applied as such that in areas open to bottom trawling where it is not known that protected deep-sea coral occur, if a permitted commercial fisher encounter protected coral they are exempt from being prosecuted provided they report this information as required by the Act. Section 63B should not be applied so that in areas where protected corals are known fishers can still kill or injure them as the activity is not 'accidental' nor is it 'incidental' to harm and kill these animals.

The preservation of ecosystem integrity is achieved by delivering on s 9 (Environmental Principles) of the Fisheries Act, as well as the general s 8 purpose of ensuring sustainability, and should be supported by a precautionary application of s 10 of the Fisheries Act.

Te Mana o te Taiao the New Zealand Biodiversity Strategy is a formally agreed Government policy with fisheries-specific and biodiversity-specific objectives that was developed through a thorough process of technical, stakeholder and policy engagement. Te Mana o te Taiao objectives should be considered a mandatory consideration by agencies when assessing Forum member recommendations, which is why the eNGO sector has insisted on including objective 7.

The relevant Te Mana o te Taiao objectives are:

- 10.5.1: A framework has been established to promote ecosystem-based management, protect and enhance the health of marine and coastal ecosystems, and manage them within clear environmental limits by 2025
- 12.1.1: Environmental limits for the sustainable use of resources from marine ecosystems have been agreed on and are being implemented by 2025
- 12.1.2: Marine fisheries are being managed within sustainable limits using an ecosystem-based approach by 2030
- 12.1.3: Marine fisheries resources are abundant, resilient and managed sustainably to preserve ecosystem integrity by 2050
- 12.2.1: The number of fishing-related deaths of protected marine species is decreasing towards zero for all species by 2025
- 12.2.2: The direct effects of fishing do not threaten protected marine species populations or their recovery by 2030
- 12.2.3: The mortality of non-target species from marine fisheries has been reduced to zero by 2050

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Key legal considerations

This section describes key legal considerations to support the eNGO spatial recommendations.

A key obligation under the Fisheries Act is that utilisation is permitted but only "*while ensuring sustainability*" which requires avoiding, remedying, or mitigating any adverse effects of fishing on the aquatic environment. The Supreme Court in *New Zealand Recreational Fishing Council Inc v Sanford Limited and Ors* [2009] NZSC 54[37] made it clear that sustainability is to be ensured.

In other words, if sustainability cannot be ensured in a fishing activity there should be no such fishing. The environmental principles in s 9 include that; *(a) associated or dependent species should be maintained above a level that ensures their long-term viability; (b) biological diversity of the aquatic environment should be maintained; and that (c) habitat of particular significance for fisheries management should be protected*.

Destroying protected corals, or endemic, rare and vulnerable benthic invertebrates (VME) species is consistent with none of these principles, particularly when the precautionary approach according to s 10 is applied. For instance, as we do not know the level that ensures the long-term viability of all the species damaged by bottom trawling, bottom trawling should not be permitted. Likewise, without sufficient knowledge of biodiversity affected, there is no certainty that biological diversity will be maintained. Lastly, coral forming habitat should be protected, particularly when we do not have adequate information as to their significance.

Section 5 provides for the Act to be interpreted and people to act consistent with New Zealand's international obligations relating to fishing. Those obligations include the general obligation in UNCLOS Article 192 that States have obligation to protect and preserve the marine environment and the obligation in Article 194(5) to take measures to protect and preserve rare or fragile ecosystems and habitat of depleted, threatened or endangered species; other forms of marine life.[38] With specific reference to New Zealand's EEZ, UNCLOS Article 61 requires that proper conservation and management measures that ensure maintenance of living resources in the EEZ not endangered by overexploitation; take into account generally recommended international minimum standards as well as to take into consideration effects on associated and dependent

[37] New Zealand Recreational Fishing Council Inc v Sanford Ltd [2009] NZSC 54, [2009] 3 NZLR 438, at [39] and [40] ("Supreme Court kahawai case")
[38] UNCLOS Part XII: https://www.un.org/depts/los/convention_agreements/texts/unclos/part12.htm

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species and maintain/restore populations above levels at which reproduction may become seriously threatened.[39]

The Arbitral Tribunal in the South China Sea Arbitral Award[40] found that Part XII UNCLOS applies to EEZs and that Article 192 is a positive obligation to take active measures to protect and preserve the environment. Moreover, it is informed by Article 194(5). In other words, it does not only operate to prevent New Zealand from allowing activities which will harm the marine environment but requires active measures. Indeed, the New Zealand Supreme Court in Trans-Tasman Resources v Taranaki-Whanganui Conservation Board[41] and others found that Part XII UNCLOS is an environmental bottom line: *activities should not be permitted if material environmental harm cannot be avoided, remedied or mitigated*.[42]

These obligations are further reinforced by the United Nations Fish Stocks Agreement (1995),[43] in its requirements in Articles 5 and 6 to apply the precautionary approach and assess impacts of fishing and adopt measures on associated and dependent species; protect biodiversity, and in Article 7 to apply compatible measures - this provision requires an analysis of measures applied in by the South Pacific Regional Fisheries Management Organisation (SPRFMO) such as the encounter protocol or move-on rule as a well as the United Nations General Assembly (UNGA) resolutions[44] on bottom trawling, starting with UNGA resolution 61/105. These include:

- 61/105 (2006): Assess, identify VMEs, close areas until establish measures to prevent SAIs on VMEs; encounter protocol
- 64/72 (2009): Undertake marine scientific research to identify where VMEs are known or likely to occur; establish/implement protocols for encounters, esp. threshold levels and indicator species; not authorise fishing until measures adopted and implemented.
- 66/68(2011): Strengthen assessments; improve procedures; publish assessments; MSR including seabed mapping identifies VMEs and helps measures; encourage MSR and mapping or close areas until such measures are adopted.

[39] UNCLOS: Living Resources Provisions (2011). https://sgp.fas.org/crs/row/RL32185.pdf
[40] The South China Sea Arbitration (The Republic of Philippines v. The People's Republic of China) https://pca-cpa.org/en/cases/7/
[41] Trans-Tasman Resources Limited v The Taranaki-Whanganui Conservation Board - [2021] NZSC 127 https://www.courtsofnz.govt.nz/cases/trans-tasman-resources-limited-v-the-taranaki-whanganui-conservation-board-
[42] Trans-Tasman Resources Limited v The Taranaki-Whanganui Conservation Board - [2021] NZSC 127 https://www.courtsofnz.govt.nz/cases/trans-tasman-resources-limited-v-the-taranaki-whanganui-conservation-board-
[43] UN Fish Stock Agreement (1995): https://sustainabledevelopment.un.org/topics/oceans/unfishstock
[44] UNGA Resolutions https://research.un.org/en/docs/ga/quick/regular/76

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- 71/123 (2016): Use the full set of criteria in Guidelines to identify VMEs; assess SAIs; review assessments; improve effective implementation of thresholds, move-on rules.

Also relevant is the UNGA 2022 sustainable fisheries resolution,[45,46] which noted the need for progress with information on species that comprise VMEs and called for assessment of significant adverse impacts (SAIs) and protecting and conserving biodiversity; identifying barriers to implementation such as data availability, baseline data, spatial distribution and connectivity of VMEs, including associated and dependent species; using the full set of criteria in Guidelines to identify VMEs and SAIs including their associated and dependent species; ensuring the precautionary approach is applied including in assessments of SAIs on VMEs; and improving understanding of connectivity of populations of deep-sea fish species.[47]

The International Guidelines for the Management of Deep-Sea Fisheries in the High Seas (FAO Deep-Sea Guidelines, 2009)[48] in paragraph 18;

> 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.
>
> 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

[45] UNGA Resolutions https://research.un.org/en/docs/ga/quick/regular/76
[46] Noting that New Zealand voted in favour of the UNGA 20222 Sustainable Fisheries Resolution at the 76th General Assembly, 2022
[47] UNGA Resolutions https://research.un.org/en/docs/ga/quick/regular/76
[48] The International Guidelines for the Management of Deep-sea Fisheries in the High Seas (FAO 2009). https://www.fao.org/3/i0816t/i0816t00.htm

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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.

The Convention on Biological Diversity (CBD)[49] in Articles 6, 7 and 8 require New Zealand to develop strategies, plans, programmes for conservation and sustainable use of biodiversity; integrated into sectoral/cross-sectoral plans (Article 6);monitor components of biological diversity, and pay particular attention to urgent conservation measures (Article 7); and establish protected areas, promote protection of ecosystems etc, further protection, rehabilitate/restore degraded ecosystems, recovery of threatened species (Article 8). The CBD has just agreed to new commitments at its most recent meeting in Montreal[50] which are relevant to the protection of marine biodiversity. We will comment on this further when the confirmed commitments are posted.

The ecosystem is defined in Article 2 of the Convention on Biological Diversity as "*a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit*." Applying a spatial management approach that is heavily reliant on the habitat suitability models alone risks protecting not ecosystems but at most individual components of ecosystems, ignoring connectivity, associated species etc. This is antithetical to the ecosystem approach which the Minister and the Government is committed to.

New Zealand is required within the EEZ,[51] as SPRFMO is required within the convention area, to apply an ecosystem approach. SPRFMO Convention Article 3(2)(b) in stating that 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. Particularly important is safeguarding those marine ecosystems. This is relevant within the EEZ for straddling stocks, such as orange roughy 7A.

New Zealand should implement the approach laid down in the UNGA resolutions, and the provisions in UNCLOS, the UN Fish Stocks Agreement (FSA), and FAO Guidelines within the EEZ; closing areas where protected, endemic, rare or vulnerable species (including VMEs) are known or likely to occur, conducting prior impact assessments and requiring bottom trawling to stop fishing in an area where a protected, endemic, rare or vulnerable species (including VMEs) has been encountered. Moreover, closing bottom trawling on seamounts to protect protected, endemic, rare and vulnerable (including VMEs) would be

[49] Convention on Biological Diversity, 1992; https://www.cbd.int/doc/legal/cbd-en.pdf
[50] December, 2022
[51] See e.g. FSA Art 5(d) and (e)

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a faithful interpretation of not only the UNGA resolutions and FAO Guidelines but of the UNGA and FSA requirements outlined above and of the Fisheries Act purpose, environmental principles and information principles and respecting the absolute protection of species under the Wildlife Act.

Refer to Appendix 1 for a summary of key legal obligations relevant to bottom trawling within Aotearoa New Zealand's EEZ.

Status of seamounts, area bottom trawled, and value to fisheries

Status of seamounts and area bottom trawled in Aotearoa

Within the EEZ of Aotearoa there are 1,907 seamounts or features (over 100m elevation).[52] Of these, 1,119 seamounts or features are unprotected from bottom trawling as they are outside of existing Benthic Protection Areas (BPAs) or Seamount Closed Areas (SCAs), refer to Figure 1.

Agencies have mapped the 30-year bottom trawl footprint (1989-2019), which broadly represents all areas that have been bottom trawled in Aotearoa, as shown in Figure 1 (light grey). This area represents 21.9%[53] of the EEZ, and largely aligns with the maximum bottom trawlable depth, the 1,600m bathymetry.[54]

Within this 30-year bottom trawl footprint there are 366 seamounts or features that are unprotected and remain at risk from bottom trawling. These 366 unprotected at-risk seamounts or features represent 0.24% in combined basal area (km^2) of the EEZ, or approximately 1% of the 30-year bottom trawl footprint in area.

Not all seamounts are the same, and often vary in shape and size, Figure 2 shows the basal area of all 1,907 seamounts (red), including the 366 at-risk from bottom trawling (located within the light grey).

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[52] Note all figures used in this report come from the UTF database (2022), provided by MPI to the EEZ Benthic Forum.
[53] Based on figures provided by MPI
[54] Fisheries New Zealand, 2020

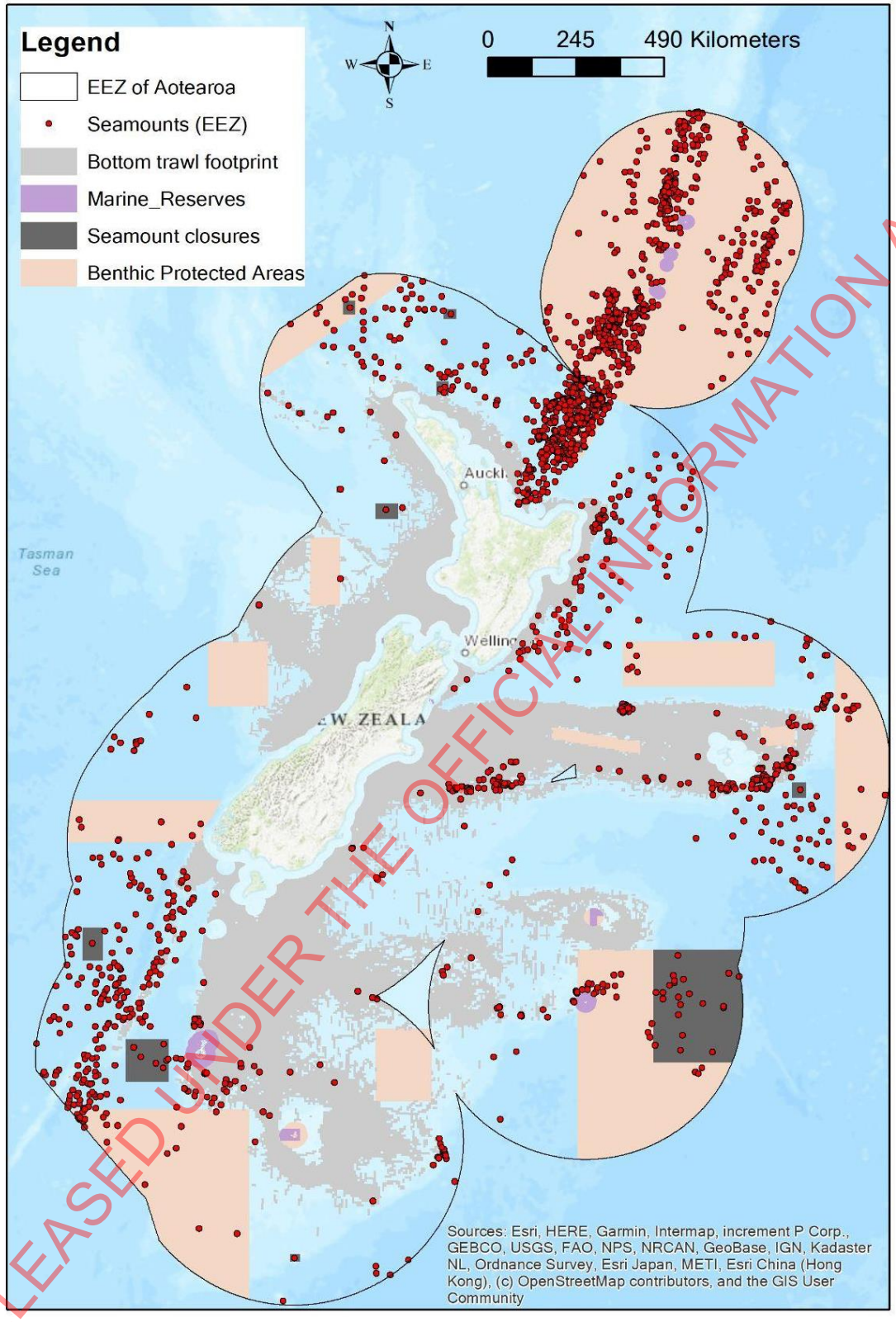


Figure 1: Point location of all seamounts and similar features, over 100m elevation (red) within the EEZ of Aotearoa, showing existing bottom trawl closed areas and the 30-year (1989-2019) bottom trawl footprint. Source: Greenpeace Aotearoa, 2022

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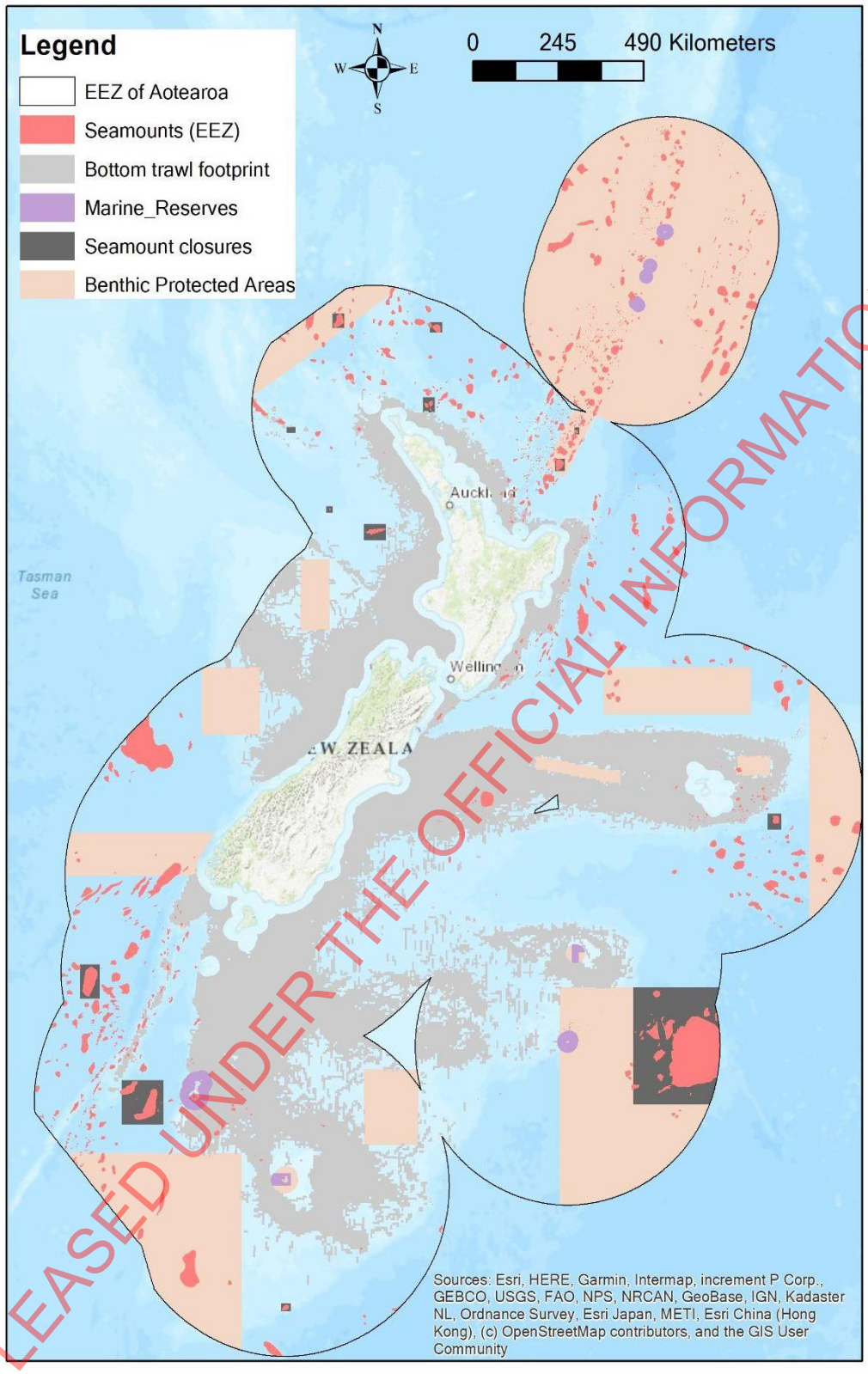


Figure 2: Basal area of all seamounts and features, over 100m elevation (red) within the EEZ of Aotearoa, showing existing bottom trawl closed areas and the 30-year (1989-2019) bottom trawl footprint. Source: Greenpeace Aotearoa, 2022

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Harvest value to fisheries

Agencies provided information to the Forum on the value of fisheries, specifically how much deep-water fisheries catch is caught on seamounts and features, referred to by officials at underwater topographic features (UTFs). To date the best available information[55] is the zonation analysis output. The analysis found that 3.5% of the total volume of all deep-water fisheries (hake, hoki, jack mackerel, ling, oreo, orange roughy, southern blue whiting, scampi and arrow squid) is caught on all of the UTFs over 100m in elevation, based on the average of the 12-year period (2007 - 2019) (Table 1).

Table 1 shows that closing bottom trawling on all 366 seamounts and features within the 30-year bottom trawl footprint would result in a displacement of 3.5% of catch by volume for all deep-water species. It's important to note that closing a seamount or feature to bottom trawling does not mean that the affected deep-water fisheries catch is not landed, it means that 3.5% of the volume caught would be displaced and most likely caught in the surrounding areas. There was no suggestion by officials that catch for deep-water fisheries, listed in Table 1, would need to be reduced.

Table 1 also highlights that some fisheries would be potentially more displaced than others, based on information over the 12-year period. Approximately 30% of orange roughy catch and 20% of oreo catch (kgs of catch per km^2) was caught on the 366 seamounts and features within the 30-year bottom trawl footprint. No finer detail on the locations or number of specific seamounts and features bottom trawled for orange roughy or oreo was provided to Forum members, so no further analysis to look at this could be done to assess potential displacement economic impacts.

Table 1: Percent of catch (kgs catch per km^2) based on an average of 12 fishing years (2007 - 2019) taken off of all UTFs within the 30 year trawl footprint, broken down by fisheries.[56]

Scenario 1 – Current protection and all UTF > 100m

Input	UTF 100 -500	UTF 500-1000	UTF 1000m +	All UTF	Current protection	Current protection + UTF
% evaluated area	0.5	0.4	0.6	1.5	15.4	16.9
ALL	2.5	0.9	0.1	3.5	0.0	3.5
Hake	0.0	0.0	0.0	0.0	0.0	0.0
Hoki	0.6	0.4	0.0	1.0	0.0	1.0
Jack Mackerel	0.0	0.0	0.0	0.0	0.0	0.0
Ling	0.1	0.0	0.0	0.1	0.0	0.1
Oreo	18.5	0.8	0.9	20.2	0.0	20.2
Orange roughy	28.7	7.7	0.6	36.9	0.1	37.0
Southern blue whiting	0.4	0.0	0.0	0.4	0.1	0.5
Scampi	0.9	0.0	0.0	0.9	0.0	0.9
Arrow squid	0.0	2.4	0.0	2.4	0.0	2.4

[55] Confirmed on Wednesday, 30th November 2022 with the science support team from both MPI and DOC that this data remains the best available information to use on catch (by volume).
[56] Table provided by FNZ to the EEZ Benthic Forum on 23rd June '*Results of Scenario 1-3*'

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Economic assessments

An accurate economic assessment of all Forum members' proposed spatial measures should assess both the market and non-market costs of fishing and compare this with the net value added of fishing. The quantity of fish unavailable to fishers multiplied by the port price to equal revenue calculation overstates the losses to society, nor does it reflect potential displacement over loss.

The value-added approach to economic assessment means that gross value should be adjusted by the subtraction of the value of the wages, rental, capital payments etc. of any inputs that can be deployed elsewhere. That should provide the net loss of value added.

That figure should then in turn be adjusted to account for the enhanced value gained to non-fishing interests by the avoidance of losses to fishers. The value of ecosystem services not lost, the values attached by people of passing on the environment more intact to the future (bequest value), the value gained to people now and in the future from less damage to the ecosystem and the values of knowledge gained by forbearance now, should be counted as pluses to society from removing damaging bottom fishing methods.

The payments to factors of production in fishing – labour, capital, and other expenditure, accrue to those involved, possibly with a multiplier. If payments to labour and capital do not accrue to New Zealand nationals, then these flows should not be included in any national economic assessment.

The non-market values gained by not fishing accrue across time well into the future, and they also accrue to all who derive these “non rival’ values – typically far more people now and in the future than those who derive market benefits. The total of the value gained from not fishing may well be considerable because there are far more non-fishing people who gain and for much longer, than those who own inputs to fishing. The totals of non-market values are typically much larger in total than those derived from the once-off payments to harvesters and those who fund them

Similarly, the losses of cultural values from harms caused by fishing may be considerably higher in total than the benefit gained by those who fish.

Any future economic impact assessments carried out on Forum members’ proposed spatial measures must include:

- Net added market value to the owners of the inputs to production
- Lost or gained non-market value x the valuing population
- The value of the ecosystem services saved / forgone.

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Monetisation of these values should be recognised as a lower bound on the true values of ecosystem services given that maintenance of the natural capital is maintenance or destruction or recovery not just of elements of biophysical processes but their systems values – and the irreversibility and non-substitutability of natural systems.

eNGO Spatial Recommendations

The eNGO sector recommends three spatial options, which deliver the same outcomes but are operationalised in different ways. All options are consistent with the Fisheries Act 1996, the Wildlife Act 1953, and New Zealand's international obligations relating to fishing alongside domestic policies. Options meet all Forum and eNGO objectives. The principles for each option are to be implemented as a package of measures not cherry picked or partially implemented.

Option 1

Close all seamounts and features within the EEZ of Aotearoa outside of existing protection to bottom trawling by 1st October 2023.

The eNGO principles for this option are:

- Closing 1,119 seamounts and features (over 100m elevation) that are within the EEZ, but outside of existing areas where bottom trawling is prohibited (BPAs, SCAs and cable zones).

Rationale

This option would protect all seamounts and features outside of existing areas closed to bottom trawling. The cumulative area (basal area in km^2) of these 1,119 seamounts and features is 3% of the EEZ[57]. Comparatively, the area that has been bottom trawled over the last 30 years (trawl footprint) represents 21.9% of the EEZ.

Given the limited time available within the EEZ Benthic Forum after all scenarios were completed for members to review and develop spatial recommendation, no mapping for this option could be done. This option requires agencies to design a network of polygons to protect individuals and groups of seamounts and features, and would likely have a significant number of proposed area closes within the EEZ.

[57] All values are based on figures provided by MPI.

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Option 2

Close all seamounts and features within the EEZ of Aotearoa outside of existing areas closed to bottom trawling that are located within the 30-year bottom trawl footprint, alongside protecting priority non-feature high value biological benthic areas, and in conjunction with a move on rule and encounter protocol to manage residual risk by 1st October 2023.

The eNGO principles for this option are:

- Restrict bottom trawling on 366 seamounts and features (over 100m elevation)[58] that are located within the existing 30-year trawl footprint.
- Legally restrict bottom trawling to the 30-year (1989 - 2019) trawl footprint.
- Identify non-feature high biodiversity value benthic areas within the 30 -ear trawl footprint, as identified in scenario 5 model outputs (minimum top 5%) and restrict bottom trawling.
- In conjunction with spatial closures, apply an encounter protocol and move on rules.
- To monitor and enforce legally require all deep-water bottom trawl vessels to have 100% observation through the use of on-board cameras and at sea observers.

Rationale

This option requires legally restricting all bottom trawling to the 30-year (1989-2019) trawl footprint (as shown in Figures 1 and 2 - light grey). This requires agencies to create a polygon(s) that closely follow the existing footprint. This area should largely reflect the 1,600m bathymetry and should not include areas that have not been bottom trawled before. Given the change in fishing behaviour and technology over the last 30-years, we recommend comparing the 30-year trawl footprint polygon to the last 10-years, which is a more accurate reflection of where bottom trawling occurs within the EEZ. The eNGO sector recommends using the 10-years bottom trawl footprint, as it is more representative of current bottom trawl fishing effort and catch limits in the EEZ.

Protecting the 366 seamounts and features within the legally frozen 30-year trawl footprint is complicated, and requires multiple polygons of varying sizes, given the locations and shape of many of the features. Closed areas need to be easy to operationalise and enforce, this means using simple east - west, north - south straight lines where possible. Given the status of work completed by the EEZ Benthic Forum in December, full mapping of Option 2 was not able to be completed. Agencies will need to develop spatial polygons to meet Option 2 principles in order to assess the effectiveness of this option. To support

[58] List of the 366 individual seamounts can be provided

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this, we have provided some additional guidance and three examples around designing these closed areas.

Based on the eNGO recommended principles for Option 2, where seamounts and features and non-feature high biodiversity value benthic areas are spatially grouped together it would be preferable to create one polygon to capture these areas. Where seamounts and features are not grouped it would be preferable to create a small polygon around the individual seamount or feature. Where non-feature high value biodiversity benthic areas are identified alone, it would be preferable to create simple polygons to include as much of these areas identified as possible, cumulatively protecting a minimum of 5% of prioritised areas from scenario 5 model output. These areas represent the highest priority areas for protection.

Cluster spatial example:

There are over 60 unprotected seamounts and features located in a small group east of the Chatham Islands, mostly south of an existing BPA, as shown in Figure 3. As shown, this existing BPA only protects one seamount from bottom trawling (Figure 3 - pink seamount polygon wihtin the orange BPA) and therefore offers very little protection in the area. In this example, where there is a cluster of seamounts and features of varying shapes and sizes, we recommend agencies design a bottom trawl closed area that includes the whole cluster, as shown in Figures 4 and 5 (yellow). This proposed closed area follows best practice MPA design principles[59], for example using straight enforceable lines. It also incorporates the existing BPA and a small seamount closed area, as required by the Forum's ToR. The size of the proposed closed area was also chosen as it incorporates non-feature high biodiversity value areas and is of similar scale to existing closed areas.

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[59] Department of Conservation, 2005

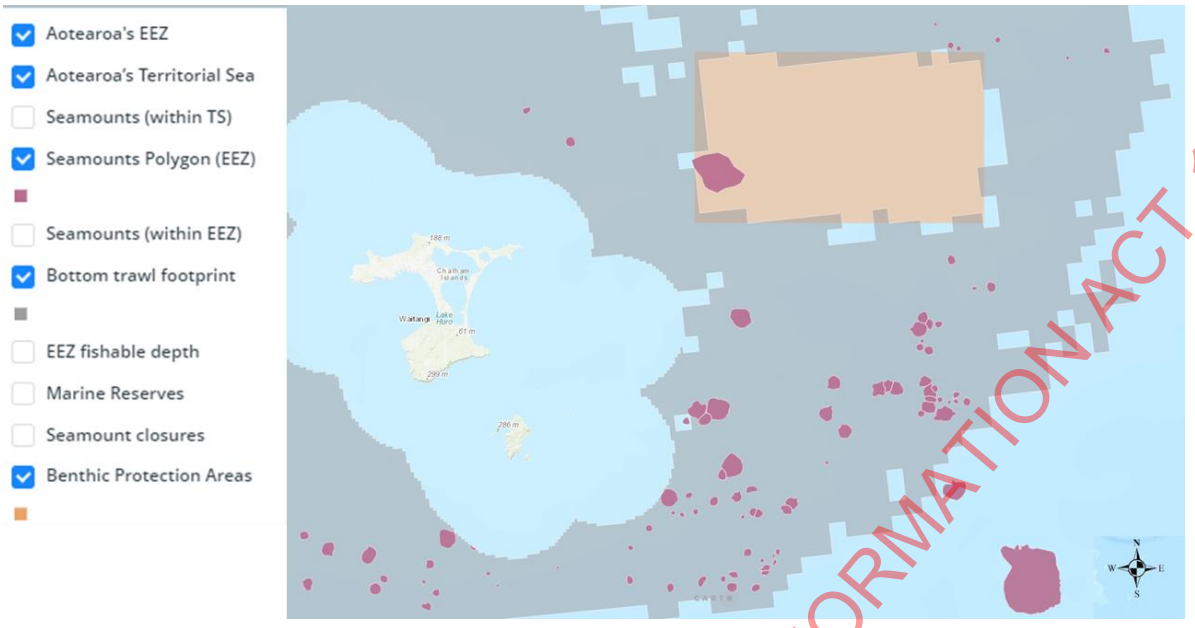


Figure 3: Basal area of seamounts and features (over 100m elevation) (purple) inside and outside the existing Benthic Protection Area (orange) located East of Chatham Islands, New Zealand. Source: Greenpeace Aotearoa New Zealand, 2022

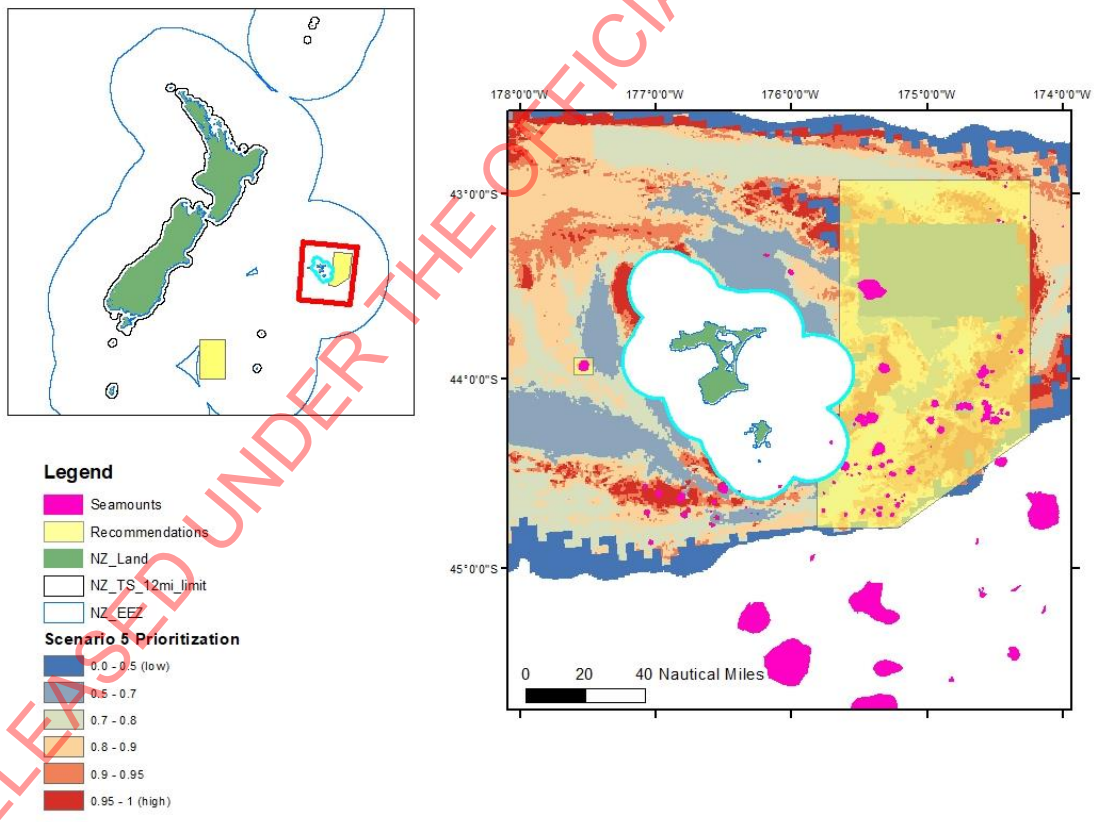


Figure 4: Example of eNGO spatial closure for cluster of seamounts and features and an individual seamount. The model output displayed is from scenario 5 top 5% (high prioritised areas in red).

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The boundaries of this example of a closed area to protect multiple seamounts and non-feature high value biodiversity benthic areas has prioritised including all features while minimising the impact to existing bottom trawl fishing effort. The southern boundary is an example of how a closed area would follow the trawl footprint curved boundary (frozen footprint polygon).

Data on fishing effort wasn't available for Forum members to map and assess, due to agencies withholding it. Only the 30-year bottom trawl footprint data layer was available for mapping, as shown in Figure 6 (black). The 30-year bottom trawl footprint doesn't reflect recent fishing locations or effort, or break down effort by fishery. However, scenario 7 which equally weighted biodiversity and fishing value, a weighting the eNGO sector does not support, given the legal requirements of both the Fisheries Act 1996 and Wildlife Act 1953, is useful to compare to. Scenario 7 model output prioritises areas biologically important while trying to avoid areas fished. The outputs for scenario 7 are shown in Figure 5 alongside our example of a closed area. When comparing scenario 5, which only weights biodiversity and prioritises areas of high biodiversity value, against scenario 7, the area proposed to be closed to bottom trawling still remains a priority (as shown by the red in Figure 5). This means scenario 7 outputs also prioritise protecting this area.

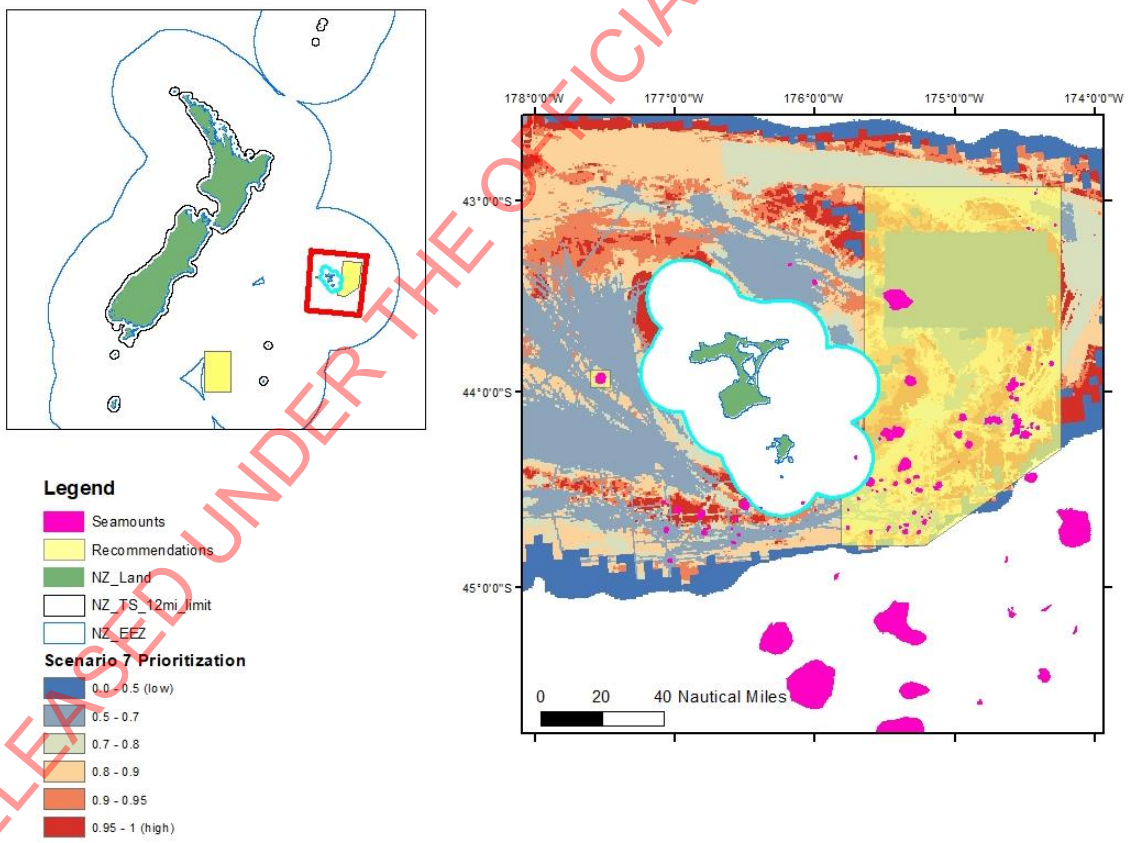


Figure 5: Example of eNGO spatial closure for cluster of seamounts and features and an individual seamount. The model output displayed is from scenario 7 top 5% (high prioritised areas in red).

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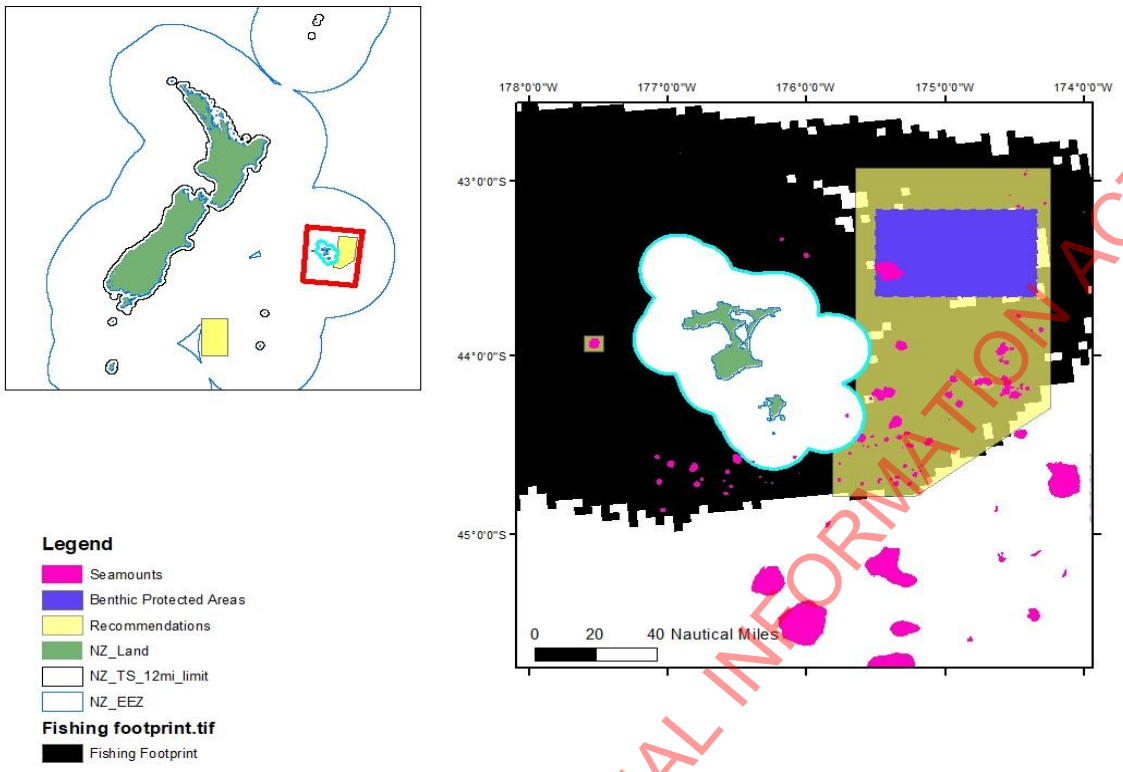


Figure 6: Example of eNGO spatial closure for cluster of seamounts and features and an individual seamount showing the 30-year (1989-2019) trawl footprint in black.

There will be some bottom trawl effort displacement, but it should be limited, as oreo is primarily fished further south and further west along the southern part of the Chatham Rise, and scampi primarily to the east of the proposed closed area.[60] Historically there has been bluenose target bottom trawls in the shallower part of this area but bluenose is also caught here with bottom longlines (with ling and hapuuku-bass) and mid-water trawls[61], which means this bottom trawl restriction should not affect bluenose catch. There were no reported bluenose catches in this area in 2017-2018, we have no information for more recent years. The TACC for bluenose was reduced by 40% in 2015-2016 for BNS3.[62]

The shape of the proposed area was designed to avoid the main orange roughy trawl tracks, which are the main deep-sea bottom trawl fishery operating in this area, provided this didn't compromise on the ecological integrity of the area.

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[60] Plenary, 2022 (Vol 2 & Vol 3)
[61] Dutiloy et. al., 2020
[62] Plenary, 2022 (Vol 1)

As previously highlighted, key fisheries information was not provided to Forum members breaking down individual bottom trawl tracks by fishery, so no analysis has been done to determine which fisheries and how much catch is landed within the eNGO cluster example area. If the EEZ Benthic Forum was provided with a mapping platform with adequate data layers to develop recommendations, similar to SeaSketch, this continuous limitation could have been resolved. Any future spatial mapping projects must use an appropriate mapping platform with adequate information for stakeholders to meaningfully participate.

Individual spatial example:

Where seamounts and features are not in clusters, we recommend developing a simple 'square' polygon around the individual seamount basal area to be closed to bottom trawling. An example of this is to the west of the Chatham Islands, as shown in yellow in Figures 4 and 5. There are no best practice recommendations as to the minimum buffer distance around the base of a seamount that should be closed to bottom trawling, but five kilometres was discussed in some Forum meetings when discussing catch estimates, volume of fish estimated to be caught on / associated with seamounts (within 5 kms). This distance could be a useful minimum buffer distance, until further work is completed to refine this.

The boundaries of this example of an individual seamount closure would likely have limited to no impact on existing bottom trawling, while meeting the Forums objectives and the eNGO objectives.

Non-feature spatial example:

The spatial support decision tool has limitations, primarily the limited biological data available to inform the prioritisation, meaning not all biologically important benthic areas will be identified within the EEZ. This is concerning for example given the high level of endemism in protected corals found within the EEZ of Aotearoa, as discussed earlier. This is why a precautionary approach must be applied. The model outputs can however be used to identify non-seamount, non-features high value biodiversity benthic areas based on the biological data available.

An example of non-seamount or non-feature high value biodiversity areas can be seen in both scenario 5 and scenario 7 model outputs east of the EEZ 'key hole', an area south-east of Stewart Island that is beyond the EEZ of Aotearoa, as shown in white in Figures 7 and 8. The red areas in the figures represent the highest priority areas (best value biological areas).

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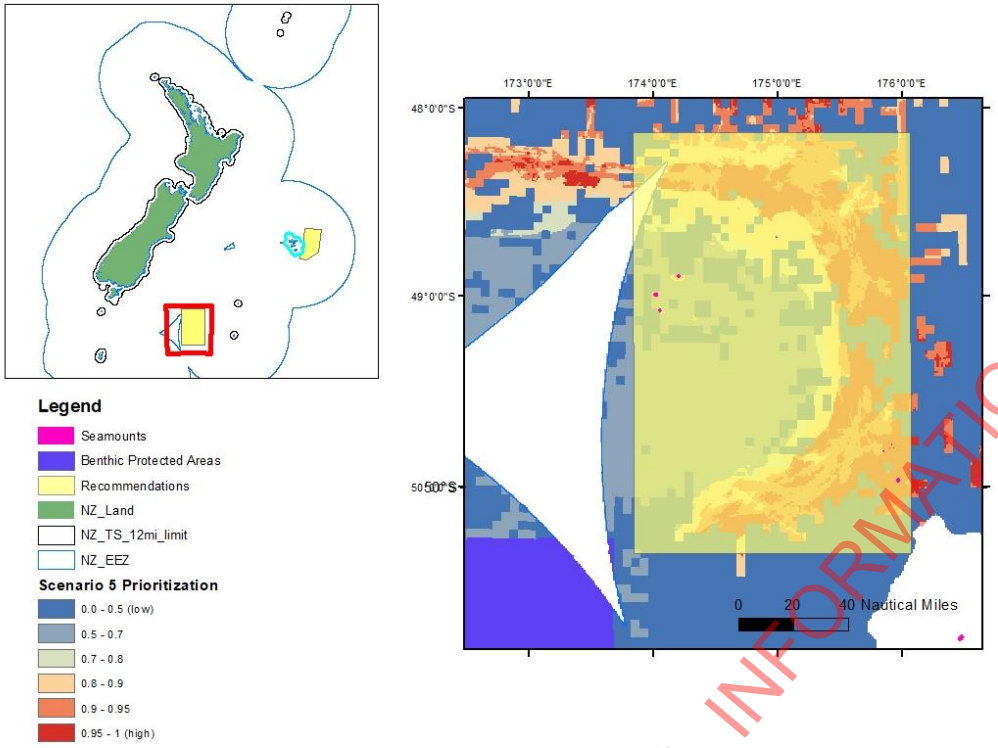


Figure 7: Example of eNGO spatial closure for non-features high value biodiversity benthic areas, with scenario 5 model output top 5% displayed (high prioritised areas in red).

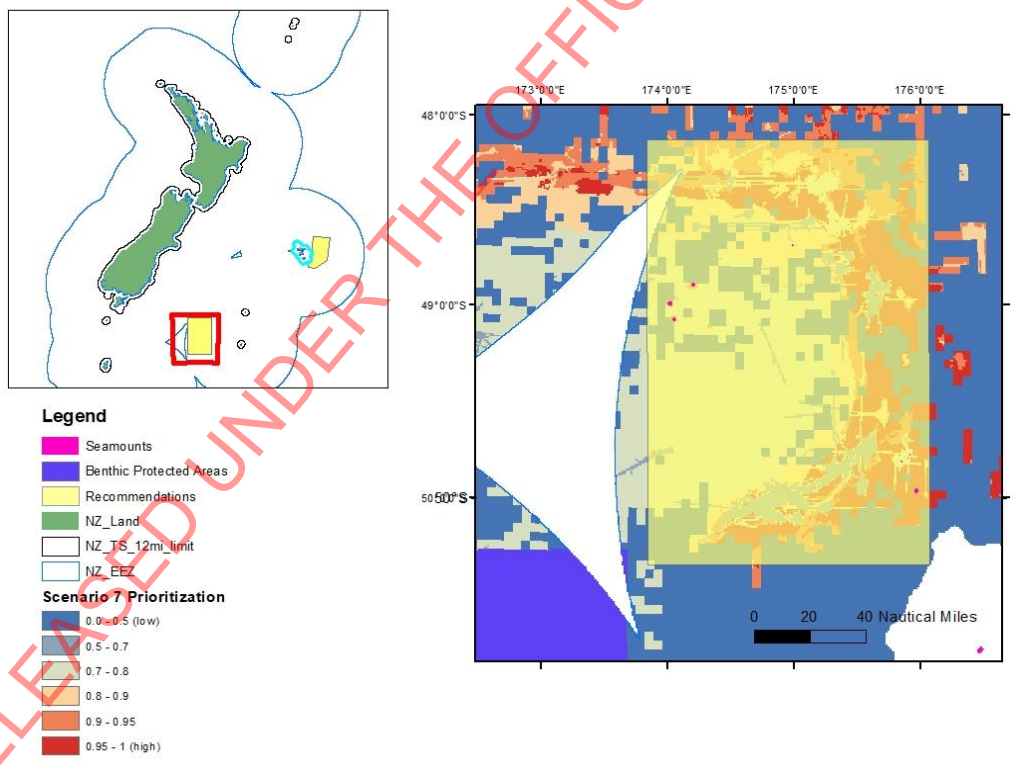


Figure 8: Example of eNGO spatial closure for non-features high value biodiversity benthic areas, with scenario 7 model output top 5% displayed (high prioritised areas in red).

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The boundaries of this non-feature example were designed to primarily capture all of the high value biological benthic areas using straight lines (yellow rectangle Figures 7 and 8). The westward boundary does include three seamounts (pink), but it could have easily excluded these to achieve protection of non-feature areas. Therefore, it is important to acknowledge that this example of a closed area could be a variety of polygon shapes, but for simplicity we have used a rectangle. There is a slight difference in the amount of area within the proposed polygon that is red (highest priority) between scenario 5 and scenario 7 (Figures 7 and 8), as scenario 7 tries to avoid areas where bottom trawling occurs. What is important to note is that both model outputs confirm and identify these areas as biologically important (priority areas in red).

There is likely to be some fishing effort displacement based on this proposed polygon. As per previous examples no fisheries bottom trawl information was available to Forum members to map and assess this. The only information is the 30-year bottom trawl footprint, which in Figure 9 shows some black within the proposed closure. Based on the latest Fisheries Plenary report (2022), bottom trawling for oreo has occurred within this proposed area. It is unlikely this proposed area would significantly impact other current deep-sea bottom trawl fisheries, such as orange roughy.

Some of the trawl footprint (black) in Figure 9 are likely to be from the historic unsustainable orange roughy that occurred in the southern area before stock declined rapidly.[63] Therefore ceasing orange roughy bottom trawl fishing in this area would have little impact on commercial interests given the low level of recent bottom fishing in this area. For oreos the current combined catches for all species (black, smooth and spiky) have been about 25% of the catch limit in OEO6 for the last 10 years.[64]

This all indicates that effort in these areas, east of the ‘key hole’ is considerably less than may be indicated by the combined historic fishing effort data set.

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[63] Plenary, 2022 (Vol 2)
[64] Plenary, 2022 (Vol 2)

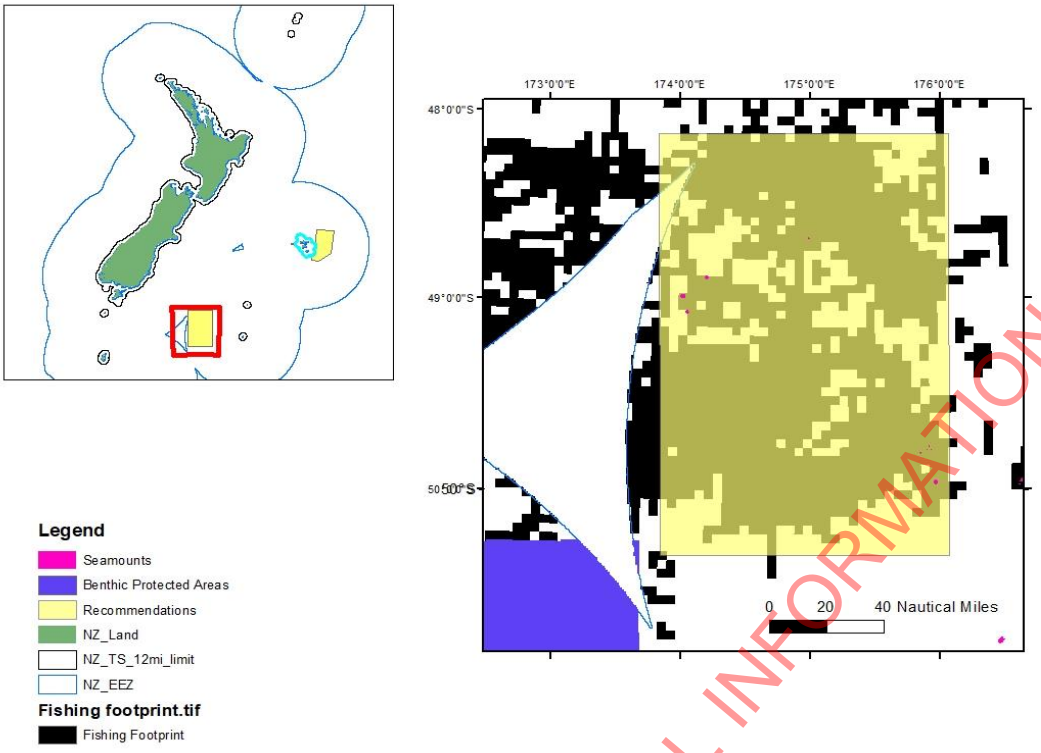


Figure 9: Example of eNGO spatial closure recommendation for non-features high value benthic biodiversity areas, showing the 30-year (1989-2019) trawl footprint in black.

It is possible that an alternative design / shape could be used to better capture the 'red' high value benthic biological areas in the North and South of this example while excluding the western areas where trawling could continue. In other words, design an alternative polygon shape that excludes more of the blue low prioritisation areas, as shown in Figures 7 and 8 to allow for bottom trawling to continue in those blue areas.

Option 3

Create multiple areas within the EEZ of Aotearoa outside of existing areas closed to bottom trawling that are located within the 30-year bottom trawl footprint, and restrict bottom trawling to only legally occur within them. Within these areas open to bottom trawling ensure that no seamount or features or priority non-feature high value biological benthic areas occur and apply an encounter protocol and move on rule to manage residual risk, implemented by 1st October 2023.

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The eNGO principles for this option are:

- Create multiple areas within the existing 30-year bottom trawl footprint and legally restrict bottom trawling in the EEZ to these designated areas.
- Within these designated bottom trawl areas exclude all 366 seamounts and features (over 100m elevation) that are located within the existing 30-year bottom trawl footprint.
- Identify non-feature high biodiversity value benthic areas within the 30-year bottom trawl footprint, as identified in scenario 5 model outputs (minimum top 5% priority areas) and restrict bottom trawling.
- In conjunction with spatial closures, apply an encounter protocol and move on rules.
- To monitor and enforce legally require all deep-water bottom trawl vessels to have a 100% observation through the use of on-board cameras and at sea observers.

Rationale

As demonstrated from the three examples above, designing multiple polygons to ensure all 366 seamounts and similar features and at a minimum the top 5% of the prioritised non-feature high biodiversity value benthic areas within the 30-year bottom trawl footprint are protected is complicated, and will require many polygons to be designed.

An alternative approach, applying the same eNGO principles described in Option 2 is that agencies identify multiple spatial areas within the 30-year bottom trawl footprint that can be open to bottom trawling, using best practice design principles and avoiding all 366 seamounts and features (individuals or clusters) and the high biodiversity value benthic areas. This approach would still meet the Forum's objectives and provide clear boundaries of where bottom trawling can continue within the EEZ and where it cannot. When agencies progress this approach we request that we are consulted on these areas to ensure they meet our eNGO principles before being assessed.

Managing Residual Risk

The network of areas where bottom trawling is closed is designed using the best available information, as required by s 11 of the Fisheries Act, and other key Government policies.

The eNGO sector is recommending an encounter protocol and move on rule in any spatial management regime applied (either Option 2 or Option 3) within the EEZ to be implemented as of the 1st October 2022.

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Rationale

Given the entire EEZ of Aotearoa will not be fully mapped, the encounter protocol and move-on rule is a backstop sustainability measure in addition to spatial management and protection of seamounts and features and known and predicted non-feature high value biodiversity benthic areas, as it manages residual risk of bottom trawling on biodiversity.

The encounter protocol and move-on rule acknowledges:

- That there are uncertainties in any HSI model of where vulnerable marine biodiversity actually are;
- Marine biodiversity contains many species that have not been described or cryptic species[65] that are not modelled and would be vulnerable to bottom trawling;
- A residual risk of impacts of vulnerable biodiversity and habitats of significance
- The modelling is primarily reliant on trawled taxa, rather than systematically sampled taxa.
- There are significant uncertainties as to the catchability of taxa. For example, Pitcher et al in Progress with investigating uncertainty in the habitat suitability model predictions and VME indicator taxa thresholds underpinning CMM 03-2019 (SC7-DW21_Rev1) (2019) found that "fish trawls may catch only ~100 g/Ha of coral when benthic cover with corals is about 4%, only ~100 g/Ha of sponges when benthic cover with sponges is about 9%, and only ~100 g/Ha of gorgonians when benthic cover with gorgonians is about 16%." These findings are directly applicable to the VME encounters, bycatch and encounter protocols since they underline the need to take catchability uncertainties into account when setting VME taxa thresholds.

As SPRFMO SC8 noted: "*The habitat suitability models have high statistical skill in classifying suitable VME taxa habitat. However, there is great uncertainty in translating model outputs to estimates of abundance of VME taxa on the seafloor, as well as issues of potential model over-prediction leading to over-optimistic estimates of protection for some taxa*."[66]

As Stephenson et. al., (2021) noted "*the models are likely to overestimate the extent of suitable habitat. Thus, if the management objective is to keep fishing grounds open or*

[65] There is growing evidence of cryptic diversity amongst a range of deepwater benthic species including corals. For example Bilewitch et la 2017 investigation of one "species" of black coral *Bathypathes patula* found "*the tested specimens belonged to a cryptic complex of at least five different genera- not a single species - and no obvious subdivision of these genera into species or populations was discernible from over 2000 base pairs of DNA sequence data*." They "suggest that this complex warrants a reconsideration of past estimates of anthropogenic effects on *B. patula*, and allowances for hidden diversity should be made during management considerations for black coral species."

[66] SC-SPRFMO, 2020., para 73.

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largely open with the proviso that some level of suitable habitat for VMEs occur in closed areas, then there is a high risk that the amount of apparently protected VME area is less than predicted by presence-only models".

These problems need to be considered and precaution taken in setting thresholds for move-on rules.

Applying the encounter protocol and move on rule within the EEZ is consistent with an international legal obligation for compatible measures with straddling stocks e.g. Challenger orange roughy in the SPRFMO area.

The encounter protocol and move on rule we proposed is based on the measure in CM 03-2022 of SPRFMO[67] with amendments to adjust to the in zone (within EEZ) application. We have recommended this approach as:

- The measure includes both individual vulnerable taxa and a multi-species component – the biodiversity threshold which would further indicate a diverse seabed fauna.
- The taxa found in the New Zealand deepwater are the same or similar to those found in the surrounding SPRFMO area or in the modelled taxa used in HSI models.
- They would include straddling stocks found in the New Zealand EEZ (eg Challenger orange roughy).

Further analysis is needed by agencies to assess how SPRFMO thresholds compare with the past and current impact of within the EEZ bottom trawling. The groups recommend a threshold which is less than 80th percentiles of past benthic trawl net captures, which has been used in the modelling for the biodiversity component.

As SPRFMO SC7 noted "*lower encounter thresholds for VME indicator taxa would help to mitigate risks of significant adverse impacts on VMEs until key uncertainties with the performance of the spatial management measures can be resolved*".[68]

More precautionary values for thresholds (e.g. 70%) can be found in table 3 and Appendix 3 from Milardi et al 2021 SC9 DW10.

Refer to Appendix 2 for more detail.

[67] SPRFMO CM03-2022 https://www.sprfmo.int/assets/Fisheries/Conservation-and-Management-Measures/2022-CMMs/CMM-03-2022-Bottom-Fishing-7Mar22.pdf
[68] SPRFMO, 2019 https://www.sprfmo.int/meetings/scientific-committee/7th-sc-2019

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Observation Recommendation

To monitor and enforce the spatial management regime legally requires all deep-water bottom trawl vessels to achieve a 100% observation through the use of on-board cameras and at sea observers by 1st October 2023. This is the arrangement that is required for any deep-water vessels operating in SPRFMO waters.

Climate Change

Forum members were required to:

> *Ensure that all recommendations have regard to the risks climate change[69] (including ocean acidification) poses to the biological diversity of the aquatic environment when providing recommendations.*

Very little information was provided to Forum members to assist this objective. However, the eNGO spatial recommendation applies a precautionary approach and aligns with the most recent UNGA 2022 resolution 77/118. Paragraph 218 calls upon States, individually and through regional fisheries management organisations and arrangements, to take into account the potential impacts of climate change and ocean acidification in taking measures to manage deep-sea fisheries and protect vulnerable marine ecosystems, including by identifying areas, based on scientific information, where deep-water species (such as protected, endemic, rare and vulnerable species) and vulnerable marine ecosystems are likely to better survive such impacts, and establishing measures to support their resilience. New Zealand agreed to this resolution by consensus.

The impact of ocean acidification must be considered in parallel to the impacts of climate change. As Law et. al., (2017) noted: "*The skeletons of cold-water scleractinian corals are composed of aragonite, the more soluble polymorph of carbonate, which makes them vulnerable to OA-induced dissolution*." Consequently, the shoaling of the ASH represents a potential threat to the abundance and distribution of deep-sea cold-water corals, as it will become challenging to construct and maintain their skeletons in water undersaturated with respect to aragonite.[70] They went on to note that "s*eamounts and other topographic features around New Zealand could represent important future refugia for cold-water corals*".[71]

[69] *e.g., having regard to any predicted change in the distribution of protected benthic taxa under climate change scenarios*

[70] Guinotte et al. 2006; Tracey et al. 2013; Bostock et al. 2015

[71] Tittensor et al. 2010; Thresher et al. 2015

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Next Steps

Once agencies have progressed the eNGO spatial management recommendations, specifically once mapping is completed, we request an opportunity to review this with officials to ensure all principles are met before these spatial recommendations are assessed and presented to the relevant Ministers.

If agencies have any questions please contact the three eNGO EEZ Benthic Forum representatives, Kat Goddard, Barry Weeber and Duncan Currie.

While out of scope of the ToR for the Forum, it is clear there is mounting evidence of the ineffectiveness of existing BPAs to protect biodiversity. The eNGO sector recommends agencies prioritise reevaluating the biological conservation value of existing BPAs, not the SCAs, when progressing all Forum members' spatial recommendations.

Members of the EEZ Benthic Forum would like to acknowledge all the work of officials, and thank Shane Geange, Karen Tunley and Andy Biggerstaff for supporting the eNGO members.







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Appendix 1: Summary of key legal obligations relevant to bottom trawling within Aotearoa New Zealand's Exclusive Economic Zone

Prepared by Duncan Currie, 14th December 2022

Fisheries Act 1996	S 5	Act to be interpreted and people to act consistent with NZ's international obligations relating to fishing
	S 8(b)	Utilisation *while* ensuring sustainability; which requires avoiding, remedying, or mitigating *any* adverse effects of fishing on the aquatic environment. *New Zealand Recreational Fishing Council Inc v Sanford Limited and Ors* [2009] NZSC 54: sustainability is to be ensured.
	S 9	(a) associated or dependent species should be maintained above a level that ensures their long-term viability: (b) biological diversity of the aquatic environment should be maintained: (c) habitat of particular significance for fisheries management should be protected.
	S 10	decision makers should be cautious when information is uncertain, unreliable, or inadequate, etc
Wildlife Act 1953	S 3, s 64B, s 41(1)(fa)	Listed marine species absolutely protected. Person who kills/injures any marine wildlife shall record and report it.

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	Schedule 7A	Minister may protect and preserve absolutely protected wildlife.
	S 63A S 63B	Offence for person who (a) hunts or kills any absolutely or partially protected marine wildlife; Reporting required if a person "accidentally or incidentally kills or injures any marine wildlife"
UNCLOS	Art 192	States have obligation to protect and preserve marine environment.
	Art 194(5)	Take measures to protect and preserve rare or fragile ecosystems and habitat of depleted, threatened or endangered species; other forms of marine life.
	Art 56(2)	States required to act in manner compatible with provisions of Convention
	Art 61	Proper conservation and management measures that maintenance of living resources in EEZ not endangered by over-exploitation; take into account generally recommended international minimum standards; take into consideration effects on associated and dependent species and maintain/restore populations above levels at which reproduction may become seriously threatened

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Caselaw	South China Sea Arbitral Award	Part XII applies to EEZs; Art 192 is positive obligation to take active measures to protect and preserve environment; is informed by Art 194(5). Ecosystem defined in Art 2 CBD "a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit."
	Trans-Tasman Resources v Taranaki-Whanganui Conservation Board & others	Part XII UNCLOS is environmental bottom line: activities should not be permitted if material environmental harm cannot be avoided, remedied or mitigated.
Fish Stocks Agreement	Art 5	Apply precautionary approach; assess impacts of fishing and adopt measures for on associated and dependent species; protect biodiversity.
	Art 6	Apply precautionary approach as defined.
	Art 7	Apply compatible measures

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CBD	Art 6, 7, 8	Develop strategies, plans, programmes for conservation and sustainable use of biodiversity; integrated into sectoral/cross-sectoral plans etc; monitor, components of biological diversity, pay particular attention to urgent conservation measures; establish protected areas, promote protection of ecosystems etc, further protection, rehabilitate/restore degraded ecosystems, recovery of threatened species.

UNGA resolutions		Nb: compatibility (Art 7 FSA), int'l minimum standards (Art 61); Arts 192, 194(5) make these relevant to EEZ.
	61/105 (2006)	Assess, identify VMEs, close areas until establish measures to prevent SAIs on VMEs; encounter protocol
	64/72 (2009)	Marine scientific research to identify where VMEs known/likely to occur; establish/implement protocols for encounters, esp. threshold levels and indicator species; not authorise fishing until measures adopted and implemented.
	66/68(2011)	Strengthen assessments; improve procedures; publish assessments; MSR including seabed mapping identifies VMEs and helps measures; encourage MSR and mapping or close areas until such measures adopted.
	71/123 (2016)	Use full set of criteria in Guidelines to identify VMEs; assess SAIs; review assessments; improve effective implementation of thresholds, move-on rules.

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	2022 Susfish resolution	Need progress with information on species that comprise VMEs, assessment of SAIs an protecting and conserving biodiversity; identify barriers to implementation such as data availability, baseline data, spatial distribution and connectivity of VMEs, including associated and dependent species; use full set of criteria in Guidelines to identify VMEs and SAIs including their associated and dependent species; ensure precautionary approach is applied including in assessments of SAIs on VMEs; improve understanding of connectivity of populations of deep-sea fish species.
FAO Deep-Sea Guidelines	Paras 17,18	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. Determine intensity, severity of impact at specific site being affected; ability of an ecosystem to recover from harm etc (emphasis on site and ecosystem)

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Appendix 2: Encounters with endangered, threatened and protected (VME) species: thresholds and Move on requirements

Prepared by Barry Weeber, 18th December 2022

Definitions

1. For the purposes of this encounter and move-on procedures, the term "VME indicator taxa"[72] means any benthic organism listed in Annex 1.

2. For the purposes of this procedure, the term "Encounter" means catch of a VME indicator taxa at or above threshold levels as set out in paragraph 3.

Encounters

3. Where VME indicator taxa are encountered in any one tow at or above the weight threshold in Annex 2A, or three or more different VME indicator taxa at or above the weight thresholds in Annex 2B, the vessel shall:

a) cease bottom fishing immediately within an encounter area of one (1) nautical mile either side of the trawl track extended by one (1) nautical mile at each end;

b) report the encounter immediately to MPI [Relevant Group]..

4. In the event of an encounter, fishers should exchange such data and information as may be relevant to MPIs consideration of the encounter area.

5. On receipt of a notification under paragraph 3(b) MPI shall:

a) record the location of the encounter area;

b) advise all fishers that bottom fishing is suspended in the encounter area in paragraph 3(a) and

c) Publicise the encounter area on the MPI website.

6. All fishers must not bottom fish in an encounter area notified under paragraph 3(b) unless and until such time as the Minister determines management actions under paragraph 9 that would permit the resumption of bottom fishing in the area.

7.MPI shall prepare for consideration by DOC and MPI working groups a detailed description of each encounter in the last year by vessels that resulted in a temporary suspension pursuant to

[72] Note within the EEZ, VME includes protected, threatened, endangered, rare and/or vulnerable benthic taxa and ecosystems

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paragraph 3, a comparison of the encounter with the existing model prediction, and suggested management actions to prevent significant adverse impacts on VMEs[73]. MPI and fishers should provide as much detail as possible to verify whether a VME is likely to be present at the encounter site and/or the surrounding area, whether a significant adverse impact has occurred, and the risk of a significant adverse impact occurring in the future.

8. The relevant MPI science Working Group shall review all encounters reported pursuant to paragraph 3(b) once the relevant Member or CNCP has provided its review pursuant to paragraph 7, and provide advice on management actions under paragraph 7 and any alternate or additional management actions the Minister considers appropriate. The MPI shall :

a) Consider the detailed analyses provided by interests and any public submissions pursuant to paragraph 7 including:

i. historical fishing events within 5nm of the encounter tow, in particular, any previous encounters, and all information on benthic bycatch;

ii. details of the relevant fishing activity, including the bioregion; and

iii. any other information the Scientific Committee considers relevant.

b) review the adequacy of the information submitted pursuant to paragraph 7, including the robustness of the analysis.

c) apply the FAO Deep-sea Fisheries Guidelines

d) ensure MPIs advice and recommendations arising from the review are provided with the objective of avoiding significant adverse impacts on VMEs

e) consider whether an area or areas should be closed to prevent significant adverse impacts on VMEs,

f) use the full set of criteria in the FAO Deep-Sea Guidelines to identify where VMEs occur or are likely to occur, as well as for assessing significant adverse impacts on such ecosystems, including their associated and dependent species; {2022 resolution 213(a))

g) ensure that the precautionary approach is applied, including in the utilization of impact assessments to inform management decisions and consideration of significant adverse impacts on VMEs, including their associated and dependent specie; {2022 resolution 213 (c)}

h) ensure that the precautionary approach is applied, including in the utilization of impact assessments to inform management decisions and consideration of significant adverse impacts on VMEs, including their associated and dependent species; {2022 resolution para. 213(c))

i) Apply the considerations in paragraph 21(d)

9 Notwithstanding paragraph 8, the Minister may defer consideration of an encounter if:

[73] Relevant outputs from habitat suitability models (e.g. shapefiles of predicted distributions) will be made available to all interests.

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j) there is inadequate information to provide meaningful advice and recommendations; or

k) MPI had advised relevant fishers and other interests of a delay pursuant to paragraph 7; or

l) There been insufficient time for MPI to present the relevant information within the normal timeframes for the submission of proposals to the Minister.

10. The Minister shall determine, for each encounter area, management actions to prevent significant adverse impacts on VMEs, which may include: the closing of some areas to some or all bottom fishing gear, temporal restrictions, spatial restriction, reopening areas. Management actions determined by the Minister will apply as appropriate, unless otherwise determined, from the conclusion of the fishing year.

11. For the avoidance of doubt, each VME encounter shall be assessed against the requirements of the relevant requirements in effect at the time of the encounter. However, this shall not preclude the Minister from taking into account the best available science in relation to the encounter in discharging their functions within the encounter review process.

ANNEX 1: List of VME Indicator Taxa

Taxonomic Level	Common Name	Qualifying taxa
Vulnerable taxa		
Phylum Porifera	Sponges	All taxa of the classes Demospongiae and Hexactinellidae
Phylum Cnidaria		
Class Anthozoa		
Order Scleractinia	Stony corals	All taxa within the following genera: *Solenosmilia; Goniocorella; Oculina; Enallopsammia; Madrepora; Lophelia*
Order Antipatharia	Black corals	All taxa
Order Alcyonacea	True soft corals	All taxa excluding Gorgonian Alcyonacea

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Informal group Gorgonian Alcyonacea	Sea fans octocorals	All taxa within the following suborders: Holaxonia; Calcaxonia; Scleraxonia
Order Pennatulacea	Sea pens	All taxa
Order Actiniaria	Anemones	All taxa
Order Zoantharia	Hexacorals	All taxa
Class Hydrozoa	Hydrozoans	All taxa within the orders Anthoathecata and Leptothecata, excluding Stylasteridae
Order Anthoathecatae		
Family Stylasteridae	Hydrocorals	All taxa
Phylum Bryozoa	Bryozoans	All taxa within the orders Cheilostomatida and Ctenostomatida
Habitat indicators		
Phylum Echinodermata		
Class Asteroidea		
Order Brisingida	Armless stars	All taxa
Class Crinoidea	Sea lillies	All taxa

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ANNEX 2A: Weight Threshold for Triggering VME Encounter Protocol in Any One Tow for a Single VME Indicator Taxa

Taxonomic Level	Common Name	Weight Threshold (kg)
Vulnerable taxa		
Phylum Porifera	Sponges	25
Phylum Cnidaria		
Class Anthozoa		
Order Scleractinia	Stony corals	60
Order Antipatharia	Black Corals	5
Informal group Gorgonian Alcyonacea	Seafan octocorals	15
Order Actiniaria	Anemones	35
Order Zoantharia	Hexacorals	10

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ANNEX 2B: Weight Threshold for Triggering VME Encounter Protocol in Any One Tow for Three or More Different VME Indicator Taxa

Taxonomic Level	Common Name	Weight Threshold (kg)
Vulnerable taxa		
Phylum Porifera	Sponges	5
Phylum Cnidaria		
Class Anthozoa		
Order Scleractinia	Stony corals	5
Order Antipatharia	Black corals	1
Order Alcyonacea	True soft corals	1
Alcyonacea Informal group Gorgonian	Seafan octocorals	1
Order Pennatulacea	Sea pens	1
Order Actiniaria	Anemones	5
Order Zoantharia	Hexacorals	1
Class Hydrozoa	Hydrozoans	1

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Order Anthoathecatae		
Family Stylasteridae	Hydrocorals	1
Phylum Bryozoa	Bryozoans	1
Phylum Echinodermata		
Class Asteroidea		
Order Brisingida	Armless stars	1
Class Crinoidea	Sea lillies	1

ANNEX 3: Guidelines for the Preparation and Submission of Notifications of Encounters with Potential VMEs

1. General Information:

    a. Contact details

    b. Nationality of vessel (if not NZ)

    c. Vessel name

    d. Date of fishing effort and notification

    e. Time of tow start

    f. Time of tow end

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g. Fishing gear used

2. Location Information:

   a. Bottom trawl or mid-water trawl[74]

   b. Start and end position of trawl (to nearest 0.01 decimal degree)

3. VME Information:

   a. Summary information:

      i. Number of VME Indicator taxa encountered

      ii. Total weight of VME Indicator taxa encountered

   b. Detailed information:

      i. Weight of each VME Indicator taxa in tow (including any under threshold)

ANNEX 4: Minimum Observer Coverage Levels

Gear type	Minimum level of observer coverage
Vessels using bottom trawl and mid-water trawl gear	100% observer coverage

[74] SPRFMO rules include mid-water trawling as they can touch the bottom. An alternative approach within the EEZ would be to exclude mid-water trawls which do not come within 50m of the sea floor.

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19 December 2022

Emma Taylor
Director, Fisheries Management
Fisheries New Zealand
Ministry of Primary Industries
Wellington

By Email: emma.taylor@mpi.govt.nz, james.andrew@mpi.govt.nz

Dear Emma,

DWG Recommendations: Bottom Trawling in the New Zealand EEZ

Deepwater Group (DWG) appreciates the opportunity to provide Fisheries New Zealand (FNZ) with our recommendations on further measures to manage bottom trawling within New Zealand's Exclusive Economic Zone (EEZ) in accordance with domestic law.

DWG is a not-for-profit alliance of the owners of quota in New Zealand's deepwater fisheries. Established in 2005, DWG's role is to provide a professional capacity, assisting quota owners to maintain sustainable harvest levels from New Zealand's deepwater fisheries, to manage any environmental effects of these fishing activities and to facilitate the further economic and social prosperity of our seafood sector. DWG represents the collective views of the owners of 91% of the quota for deepwater fisheries.

DWG works on behalf of quota owners to deliver their collective vision which is *to be trusted as the best-managed deepwater fisheries in the world.*

DWG sees this submission as a part of an ongoing dialogue with FNZ and seeks further discussions on the content and options to ensure our management systems remain effective, fit for purpose, underpinned by scientific knowledge, and recognised domestically and internationally.

1. Summary

- **DWG recognises the importance of the Fisheries Act 1996, which expressly provides for sustainable utilisation and effects-based management of the aquatic environment and supports a bottom trawling management framework in the EEZ that is consistent with the purpose and principles of the Act (including EAFM).**
- **DWG recognises the importance of New Zealand's dualist approach and the limited applicability of international law when it is not incorporated into New Zealand domestic law. DWG submits that in the context of managing bottom trawling in the EEZ, any proposed management framework must be based on domestic law (e.g., Fisheries Act) and apply principles of international law as it is incorporated into New Zealand domestic law (e.g., EAFM, adverse effects)**
- **DWG recognises the importance of seamounts and supports the recommendation already made by Sealord to extend the closure to bottom trawling to include all true seamounts (i.e., UTFs with elevations of 1,000 m or more) that have not been contacted by bottom trawling (i.e., the closure of an additional 123 seamounts).**

- **DWG supports the introduction of a defined area within the EEZ that is zoned for sustainable food production by bottom trawling. This zone to be based on the areas that have already been contacted by bottom trawls (as determined by the 1989-2021 trawl footprint) and, given the impacts that have already occurred here, would be managed under different environmental bottom lines than might otherwise apply to those areas outside of this zone.**
- **Given the social, economic, and cultural importance of deepwater fisheries in both a national and regional context, DWG requests that, prior to the imposition of any further management restrictions on bottom trawling within New Zealand's EEZ, an independent assessment of the societal, economic and Treaty Settlement impacts of any such measures is undertaken**.

1. 'Effects' based Management of Bottom Trawling in the New Zealand EEZ

Food production in the EEZ is undertaken pursuant to the Fisheries Act 1996 (the Act). The express purpose of the Act is to "***provide for the utilisation of fisheries resources while ensuring sustainability***."[1] Where ***Utilisation*** *means conserving, using, enhancing and developing fisheries resources to enable people to provide for their social, economic and cultural well-being*, and ***Ensuring sustainability*** *means maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations and avoiding, remedying, or mitigating any adverse effects of fishing on the aquatic environment*. [2]

With respect to the application of the purpose of the Act (particularly the '*utilisation of fisheries resources*" and *"ensuring sustainability"*), the Court of Appeal held that:[3]

> *It remains the case, however, that the Fisheries Act pursues* ***sustainable utilisation****; it exploits the potential of fisheries resources to meet human needs over time, and it interests itself in the aquatic environment because that sustains fisheries resources. So, its objectives include avoiding or mitigating the adverse effects of fishing on the aquatic environment and it pursues protection of habitat where that is of particular significance for fisheries management. Although it recognises that biological diversity should be maintained, it allows that principle to be weighed against other considerations, notably that of setting total allowable catches at levels that can produce the maximum sustainable yield.*

What is more the Court found Appeal in *Motiti* that there is no express duty to maintain biodiversity for its own sake:[4]

> *"[t]here is no express duty to maintain biodiversity for its own sake, but the [Fisheries] Act recognises that biodiversity matters to the sustainability of fisheries resources that depend on the aquatic environment*".

DWG notes the core component of the Act is its '*effects'* based, ecosystem approach to fisheries management (EAFM). While the Act necessitates management on a species-specific fisheries basis, the environmental principles, together with the purpose provisions, enable management within an "*aquatic environment*" broadly, recognising the interdependence of stocks, and providing for EAFM. The successful implementation of this EAFM approach in each of the main deepwater fisheries has been independently audited against the science-based Marine Stewardship Council Fisheries Certification Standard.

In short, the Fisheries Act 1996:

- **Provides for the Fishing** - fishing is an expressly permitted activity. The Act does not require any consideration of the *impact* of fishing activity, as any impact associated with fishing activity is expressly permitted by the Act.
- **Management measures have to be predicated on adverse effects**. Effects, or the consequences of fishing activity are considered by the Act. Only when it is demonstrated that there is an adverse effect on

[1] Fisheries Act 1996, s 8.
[2] *Ibid*.
[3] *Attorney-General v The Trustees of the Motiti Rohe Moana Trust & Ors [2019] NZCA 532*, para. 50
[4] *Ibid.,* para. 49.

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the aquatic environment (i.e., at the level of a population, a species, or an ecosystem), is there an obligation for management measures that avoid, remedy, or mitigate, *any adverse effects of fishing on the aquatic environment*.

- **Impacts, effects and adverse effects** – In terms of fisheries management in the New Zealand EEZ the terms 'impact' and 'effect' must be correctly distinguished, as the difference between impacts and effects has important consequences with respect to meeting obligations in terms of managing the effects of bottom trawling in New Zealand's EEZ within New Zealand domestic law.[5]
- I**mpact-related measures** – Impact based measures which place controls on an activity (e.g., encounter protocols) rather than on its effects, are not contemplated by the Act. What is expressly provided for in the Act is an effects-based framework, where effects are monitored encase, they are adverse when considered at the appropriate scale (e.g., aquatic environment). As impact-based measures such as encounter protocols do not consider the effect of fishing activity on the aquatic environment, rather they are a simplistic measure designed to control the activity at the point of impact (when this activity impacts something) and are therefore not part of the legal management framework within New Zealand's EEZ.

The New Zealand fisheries management system is renowned as one of the best in the world, being comprehensive, integrated, and supporting sustainable deepwater fisheries using a balanced ecosystem management approach. The condition-free certification of 19 of New Zealand's most important fisheries against the robust science-based Marine Stewardship Council fisheries standard not only demonstrates the success of the commitment of New Zealand's deepwater fisheries to EAFM but also puts the management of our deepwater fisheries amongst the top 5% best-managed fisheries in the world.

Submission: **DWG recognises the importance of the Fisheries Act 1996, which expressly provides for sustainable utilisation and effects-based management of the aquatic environment and supports a bottom trawling management framework in the EEZ that is consistent with the purpose and principles of the Act (including EAFM).**

2. Domestic Law and International Agreements

EAFM, and other related concepts (e.g., Ecosystem-Based Management, (EBM)), have developed in response to the need to implement, in a practical manner, the principles of sustainable development (World Commission on Environment and Development 1987 (WCED), the Convention on Biological Diversity 1992 (CBD) and the Code of Conduct for Responsible Fisheries (FAO, 1995)).

EAFM as implemented in relevant New Zealand legislation (e.g., the Fisheries Act 1996) is consistent with all these principles and has been adopted by the FAO Committee on Fisheries (COFI) as the appropriate approach to implementing these principles for the management of fisheries.

While the Act employs a stock management-based approach that necessitates management on a species-specific basis, the environmental principles, together with the purpose of the Fisheries Act 1996 and the Information principles (which include the precautionary approach), do enable management within an "aquatic environment" broadly, recognising the interdependence of stocks, providing for an ecosystem approach to fisheries management (EAFM):

- **S 5 Interpretation:** Notwithstanding New Zealand's dualist approach to its implementation of international law (and its limited applicability if not incorporated into domestic legislation), The Fisheries Act 1996 is entirely consistent with New Zealand's international legal obligations, as such there should be little recourse to s 5(a) of the Fisheries Act.
- **S 8 Purpose**: The Fisheries Act 1996 is a utilisation statute principally concerned with providing for the activities of fishing by managing of fish stocks at sustainable levels and managing adverse effects on the aquatic environment.

[5] See Fisheries Act 1996, s8(2)(b) which provides for *avoiding, remedying, or mitigating any* ***adverse effects*** *of fishing on the aquatic environment.*

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- Fisheries are to be utilised, but sustainability (of the fisheries) is to be ensured. *New Zealand Recreational Fishing Council Inc v Sanford Ltd* [2009] NZSC
- [T]he Fisheries Act pursues sustainable utilisation. *Motiti Rohe Moana Trust & Ors* [2019] NZCA

- **S 9 Environmental Principles**: The environmental principles of the Fisheries Act are derived from New Zealand's international obligations under the United Nations Convention on the Law of the Sea (UNCLOS)[6] and the Convention on Biological Diversity (CBD). However, in doing so they are not intended to provide a gateway for the importation of international terminologies that seeks more general outcomes and is inconsistent with the intended incorporation of New Zealand's international obligations.[7] If the Minister has taken the steps necessary to avoid, remedy, or mitigate any adverse effects of bottom trawling on the aquatic environment, it is **not open** to the Minister to then further restrict utilisation. To do so would be contrary to the obligation to provide for utilisation except to the extent necessary to ensure sustainability.
- **S 10 Information Principles:** The provisions of section 10 implement the precautionary approach (as a set of principles):
  - S 10 of the Fisheries Act has been the subject to judicial challenge where it has been used to justify cautious decision-making authorities to with respect to limiting commercial catch.[8] In all of these cases where the Minister was unsuccessful, it was argued that the precautionary principle which needs to be based on the best available information should not be used as *"a sword to argue for more restrictive Ministerial decisions*."[9]
  - The information principles and the precautionary approach in s 10 are not intended to dictate the substantive outcomes of decisions and do not alter the balance in the purpose of the Act of ensuring sustainability while providing for utilisation.[10]
  - In the management of bottom trawling with the EEZ, the precautionary approach is applied (e.g., fishing activity occurs in only ~10% of the EEZ (with ~90% untouched and ~30% already closed, which includes the entire EEZ in the Kermadec region).

The Wildlife Act:

The marine species listed in Schedule 7A of the Wildlife Act (including benthic species such as various corals, sea anemones, and hydrozoans) and marine mammals listed in the Marine Mammals Protection Act, are protected in New Zealand fisheries waters. DWG notes:

- With respect to protected corals, protection is not absolute, with provisions in both the Wildlife Act 1953 and the Fisheries Act 1996, contemplating accidental or incidental captures or deaths of protected species and prescribing what actions must follow.
- Protection under the Wildlife Act 1953 means that no person may hunt, kill, or have in their possession any wildlife (which includes species listed in Schedule 7A).[11] The Wildlife Act makes express provision for accidental or incidental death or injury to any protected species "*in the course of fishing pursuant to a permit, licence, authority, or approval issued, granted, or given under the Fisheries Act 1996*" to be reported to a fishery officer.[12]

[6] United Nations Convention on the Law of the Sea, 10 December 1982, 1833, UNTS 3 (UNCLOS), Arts 61 & 62 (reflecting the UNCLOS requirement to promote optimum use of EEZ fisheries resources without prejudice to the conservation of that zone)
[7] See MFish (2000) Front End Policy Definitions Fisheries Act 1996, s 9, Paras 7 & 8
[8] See *Northern Inshore Fisheries Co v Minister of Fisheries [2002] NZHC WN CP 235/01 (Unreported, Ronald Young J, 4 March 2002). Squid Fishery Management Co Ltd v Minister of Fisheries [2003] NZHC WN CP 20/03 (Unreported, Ronald Young J, 11 April 2003). Squid Fishery Management Company Ltd v Minister of Fisheries [2004] NZCA 39/04 (Unreported, Hammond, William Young,* and O'Regan JJ, 13 July 2004
[9] C Iorns Magallanes (2014) The Precautionary Principle in the New Zealand Fisheries Act: Challenges in the New Zealand Court of Appeal, *VUWLP* 4:12
[10] See Hon D Kidd MP (6 December 1994) 545 NZPD 5390, and Fisheries Bill 1994, (Explanatory Note iii)
[11] Wildlife Act 1953, ss 6 & 7
[12] Wildlife Act 1953, s 63B; Fisheries Act 1996, s 2(1)

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- The main regulatory tool for addressing fishing-related mortality[13] is the maximum allowable level of fishing-related mortality (MALFRM) for the purpose of allowing "*the species to achieve non-threatened status as soon as reasonably practicable*."[14]
- The statutory criteria for setting a MALFRM provide guidance on when the effects of fishing-related mortality on a protected species are considered to be an adverse effect.[15]

International Legal Obligations

International law obligations primarily arise out of international agreements ratified by the state parties (i.e., Conventions), customary international law, and in some cases the decisions of the international judiciary. The Fisheries Act 1996 requires interpretation (and the exercise of functions, duties, and powers) to be consistent with New Zealand's international obligations related to fishing.[16]

While some Conventions are explicitly referenced in the Fisheries Act 1996 and are therefore of high interpretative interest for New Zealand (e.g., The United Nations Convention on the Law of the Sea 1982 (UNCLOS),[17] The United Nations Fish Stocks Agreement 1995 (FSA)[18]), Of less applicability are non-binding voluntary guidelines to which New Zealand is a signee, and which provide guidance for coastal states within coastal jurisdictions (and beyond) and assist in possible interpretations of the Fisheries Act where relevant (e.g., FAO Code of Conduct for Responsible Fisheries (FAO Code of Conduct)[19])

International non-obligatory guidelines and instruments which conform with other specific purposes in jurisdictions outside New Zealand provide little assistance with respect to possible interpretations of the Fisheries Act 1996, especially if they contrast with the New Zealand management system or conflict with it (e.g., RFMO High Seas impact management which contrasts with the management of adverse effects within the New Zealand EEZ;[20] FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas[21]).

New Zealand is a member of a number of Regional Fisheries Management Organisations (RFMOs) and Regional Fishery Bodies (RFBs). While it is understood that as coastal states, we are obliged to implement relevant measures as they are applicable to New Zealand vessels fishing in RFMO management areas, measures are not applicable within New Zealand's jurisdictional waters. For example, in 2004 the UN General Assembly adopted a resolution relating to the adverse impacts of bottom trawling in the High Seas,[22] and subsequent UNGA resolutions, most recently in 2021, call upon States and Regional Fisheries Management Organisations (RFMOs) to assess and prevent significant adverse impacts (SAIs) on vulnerable marine ecosystems (VMEs).[23] It is noted:

- **Non-binding**: These resolutions are non-binding and not applicable within coastal states' jurisdictions, including within their EEZs. They also illustrate the international consensus that management responses should be targeted at the control of fishing activity on the high seas, and in particular bottom trawling, rather than its effects.
- **RFMOs do not have legislation**: Management measures that provide for utilisation, sustainability, and preservation/conservation, are largely based on balance that needs to be struck between use and conservation reflected in conventions/agreements between Coastal States. In many instances, the

[13] See Wildlife Act 1953, s 2, fishing-related mortality means the accidental death or incidental death of any protected species that occurs in the course of fishing
[14] Wildlife Act 1953, ss 14G, 14H; Marine Mammals Protection Act, ss 3E, 3F, 3G
[15] Wildlife Act 1953, ss 14F(e), 14F(f), 14F(g), 14F(h) and 14I
[16] Fisheries Act 1996, s 11.
[17] United Nations Convention on the Law of the Sea, 10 December 1982, 1833 UNTS 3 (UNCLOS), See Articles 61 and 62
[18] Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 4 August 1995, 2167 UNTS 3.
[19] FAO Code of Conduct for Responsible Fisheries. Rome, FAO. 1995. 91 p
[20] Note: s 5 Fisheries Act 1996, is not intended be used as a vehicle to import or introduce inconsistent international jurisprudence
[21] FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas. (2008). Rome, FAO. 2009. 73p.
[22] UNGA Res. 59/25, Art. 66 (https://undocs.org/en/A/RES/59/25)
[23] UNGA Res. 76/71. Art. 191(https://undocs.org/en/A/RES/76/71)

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management measures are a product of geopolitical consensus, rather than a reflect of the text of a particular RFMO's Convention. It is incorrect in law, to seek to apply international management measures within the New Zealand EEZ.

- **Approaches within RFMOs and RFBs are largely irrelevant in the EEZ**: RFMOs/RFBs are mainly consensus-based organisations that are created under UNCLOS and are governed by International Law, which is largely not codified. The approaches also reflect the unique challenges of managing areas well beyond national jurisdiction. They do not have specific legislation that is anchored in the matrix of a coastal state's national law. As such the measures applied in Areas Beyond National Jurisdiction (ABNJ) can only be directly relevant within New Zealand's EEZ when they are incorporated into domestic legislation, or when domestic legislation requires a decision-maker to have regard to specific CMMs.

EAFM and Environmental Assessment

In New Zealand, various types of Ecological Risk Assessments (ERAs) are routinely employed which quantify the consequences of fishing impacts as effects on protected species and species complexes broadly. These assessments feed into New Zealand Ecosystem Approach to Fisheries Management (EAFM) which is a core component of the Fisheries Act 1996.

New Zealand's commitment to EAFM (especially within our EEZ in a deepwater fisheries context) can be seen with the assessment of New Zealand's fisheries against the Marine Stewardship Council's (MSC) Fisheries Standard. This global norm-based sustainability standard, which is considered the best science-based sustainability standard for fisheries management, is widely applicable to all fisheries that want to use it (including fisheries falling in areas under national jurisdictions or those in International Waters on the High Seas).

With respect to benthic effects and habitat management, the MSC standard habitats outcome [PI 2.4.1] reinforces an effects-based approach with: [24]

- The requirement to demonstrate that fishing is "*does not cause serious or irreversible harm to habitat structure and function*" harm (serious or irreversible harm to structure and function is defined quantitatively as >20% of the total area of that habitat) [25]
- Serious or irreversible harm to "*structure or function*" means changes caused by the [fishery] that fundamentally alter the capacity of the habitat or ecosystem to maintain its structure and function.[26]
- Habitat consideration comprises the full managed area with a requirement to use "*all available information (e.g., bioregional information) to determine the range and distribution of the habitat under consideration and **whether this distribution is entirely within the managed area or extends beyond the managed area***".[27]
- All of New Zealand's MSC-certified fisheries have met these requirements.

The MSC Standard is applied to any fishery that undergoes a formal independent assessment of its performance against the standard. New Zealand has 19 fisheries in the EEZ certified as sustainable without condition. This means that these 19 certified fisheries conform to the top 5% of the best-managed fisheries in the world.

Submission: DWG recognises the importance of New Zealand's dualist approach and the limited applicability of international law when it is not incorporated into New Zealand domestic law. DWG submits that in the context of managing bottom trawling in the EEZ, any proposed management framework must be based on domestic law (e.g., Fisheries Act) and apply principles of international law as it is incorporated into New Zealand domestic law (e.g., EAFM, adverse effects)

[24] Marine Stewardship Council Fisheries Certification Standard v2.01 (2019)
[25] *Ibid*., SA19, pp 146-147
[26] *Ibid*.
[27] *Ibid*., SA19, pp 146-147

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3. Maintaining biodiversity on *true* Seamounts

There is a range of Underwater Topographic Features (UTFs) including seamounts (with elevations ≥1,000 m), knolls (with elevations of 500-999 m), and hills (with elevations of 100- 449 m).[28] Notwithstanding, unsubstantiated claims that all UTFs with elevations of ≥100 m might be considered as 'seamounts', DWG's consistent position, aligned with international definitions and those by New Zealand's Geographic Board, is that seamounts are those UTFs with elevations ≥1,000 m.[29]

The effective management of UTFs depends very much on the substrate types, the nature and extent of sessile benthic biodiversity on each and on the surrounding oceanic environment. Not all UTFs within our EEZ are habitats for corals and there is a great variety of epibenthic fauna on the seabed, as well as on UTFs, throughout New Zealand's extensive EEZ, which extends across a wide range of oceanographic regions from sub-Tropical through convergence zones to sub-Antarctic waters.

DWG supports further scientific survey work to better identify and characterise the nature and extent of epibenthic fauna on UTFs (and elsewhere) within the EEZ to determine which areas might require additional management. To do this is the Crown's obligation and this knowledge is essential to underpin EAFM as well as to assess whether or not effects on benthic biodiversity that occur as a consequence of fishing amount to adverse effects.

DWG notes the reference to zonation model outputs, and their use to inform the development of a possible management framework. DWG submits that while zonation modelling may provide cursory or indicative outputs especially in terms of where verification work (e.g., surveys) might be undertaken, they are not capable of being used determinatively. Zonation model outputs while being indicative, have proven to be inadequate (without adequate ground-truth data) to determine what additional management measures might be required on a localised or spatial basis.

UTFs (seamounts, knolls, and hills differ greatly in terms of size, scale, geology, ecology, and their ability to create micro-niches by influencing oceanographic conditions (such as generating upwelling currents). Seamounts, by dint of their large sizes, can have significant ecological influence and warrant different management approaches than those that might apply to for smaller UTFs. On land, we do not apply the same management approach to Mt Eden, in Auckland, or to Mt Victoria, in Wellington, as we do to Mt Ruapehu or Mt Cook (both of which are within National Parks). It is no different within our EEZ; management responses must be fit for purpose.

Table 1: NIWA's records of seamounts, knolls and hills within the EEZ (Clark et al., (2022) (BEN2020-07))

Type	Number	Closed by law		Trawled	Not trawled	Percentages	
		Number	Percentage			Trawled	Untrawled
Seamounts	144	74	51%	21	123	14%	86%
Hills & knolls*	1763	760	43%				
Totals	**1907**	**834**	**44%**				

* DWG has contracted GNS Science to calculate the numbers hills and knolls that have been contacted/not contacted by bottom trawls based on data provided by FNZ.

[28] New Zealand Geographic Board (2016) Standard for undersea feature names: NZGBS 60000 (1 August 2016); IHO-IOC (2019) B-6 Standardization of Undersea Feature Names (Edition 4.2.0 – October 2019); USBGN (2005) Policies and Guidelines for the Standardization of Undersea Feature Names (Approved by the U.S. Board on Geographic Names Advisory Committee on Undersea Features 6 April, 1999 With US BGN edits incorporated 19 July 2005 (Supersedes Guidelines approved 25 October 1978), p5.

[29] *Ibid.*

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NIWA has identified 144 seamounts within New Zealand's EEZ. Of these, NIWA has estimated 85% (123) have never been trawled, 51% (74) are already closed (by law) to bottom trawling and 15% (21) have been trawled once or more (see Table 1). NIWA has also identified 1,763 hills and knolls in the EEZ, 43% (760) of these are closed (by law) to bottom trawling.

Any such additional closures of seamounts might be easily promulgated through an amendment to the Fisheries (Commercial Fishing) Regulations 2001.

Submission: DWG recognises the importance of seamounts and supports the recommendation already made by Sealord to extend the closure to bottom trawling to include all seamounts (i.e., UTFs with elevations of 1,000 m or more) that have not been contacted by bottom trawling (i.e., the closure of an additional 123 seamounts).

4. Consider the concept of food production areas within the EEZ

Bottom Trawling in the New Zealand EEZ

The deepwater seafood industry bottom trawls on the same fishing grounds year after year and, for the most part, fishing within the same defined trawl corridors that have been used for many years.

For over 30 years, skippers of deepwater trawl vessels operating trawl gear have been required to report their tow-by-tow commercial fishing activities using Trawl Catch Effort Processing Return (TCEPR) forms and, since 2017, using Electronic Reporting System (ERS) (which has replaced the TCEPR).[30]

These cumulative (TCEPR and ERS) data are analysed annually and the results are presented by Fisheries New Zealand (FNZ) in a New Zealand Aquatic Environment and Biodiversity Report (AEBR) and have been used to quantify the nature and extent of the bottom trawling on the seabed within the EEZ since 1989. These reports demonstrate that bottom trawling (defined as including trawl gear used within a metre of the seafloor) is conducted mainly in continental shelf waters in depths defined by the distribution of target species, generally in waters shallower than 1,600 m.

The most recent report notes that spatially the trawl footprint for the deepwater fish stocks has decreased, where for all years deepwater fisheries have contacted around 10% of the area of the EEZ. Since 2006 the annual bottom trawl footprint has been 1.1–1.2% of the EEZ (& TS).[31]

Spatial distribution of epi-benthic faunal groups

The data supporting our understanding of benthic fauna distribution is strongly driven by the distribution of known fishing grounds and observed fishing effort. While corals, sponges and other epi-benthic faunal groups are known to be widespread throughout New Zealand's EEZ including in waters deeper than those currently contacted by bottom trawling, the areas outside of the fishing grounds are substantively under-sampled. Given that the two principal sources of this information are samples from scientific research work (mostly during trawl surveys on known fishing grounds) and records from the monitoring of fishing activities (both from at-sea observers and from commercial skippers), there is limited detailed knowledge of the locations of epi-benthic species or of their abundances.

Most samples collected and identified have come from the monitoring of fishing activities. The Scientific Observer Programme as undertaken by FNZ and DOC, places trained observers onboard commercial fishing

[30] Fisheries Reporting Regulations 2001, Reg. 11

[31] Baird, S.J.; Mules, R. (2021). The extent of bottom contact by commercial trawling and dredging in New Zealand waters, 1989–90 to 2018–19. *New Zealand Aquatic Environment and Biodiversity Report 260*.

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vessels to record catches of both fish and non-fish species, including any incidental captures of sessile epibenthic invertebrates.

Around 48% of trawl tows in deepwater fisheries are observed, with up to 100% of tows being observed in fisheries where there is a high likelihood of interaction with protected species. In addition, since 2009 industry has reported all non-fish bycatch, as is required by law.

Recognising that the observed distribution of epibenthic fauna is biased, due to sampling principally relying upon collection from fishing activities, NIWA has developed modelling approaches in an attempt to assess suitable habitat based on records of coral captures and environmental parameters, of which depth is the most important.

Results from this work assess the overlap of these areas and bottom trawling to be less than 1%. By this measure, almost all of the areas where scientists predict coral may exist are outside of our fishing grounds and remain untouched by bottom trawling.[32]

In Short

In New Zealand, biodiversity is conserved through the application of management and (at times) legal provisions that expressly provide for different levels of food production, conservation, and protection. These align with New Zealand's EAFM emphasising the need for a balanced approach.

Bottom trawling has taken place on known demonstrable fishing grounds. Most of these grounds have been fished for decades and are responsible for the food production from New Zealand's deepwater fisheries resources and where overlap with epi-benthic fauna is less than 1%. DWG estimates that around 80% of the volume of wild trawl-caught seafood produced in New Zealand is harvested by bottom trawl gear.

Our presumption is that, because the areas that are trawled are such a small proportion of the entire EEZ (i.e., annually some 1.2% and, in total, around 10% in total since records began in 1989-90), it is highly likely that any effect as a consequence of bottom trawling will not be adverse and will not require further management intervention.

It follows that the lack of adverse effects and the understanding of the environmental bottom line in the areas where we trawl would be such to provide the consideration of the concept of food production areas within the EEZ.

Of the area outside that those that we are designated as food production areas, we look forward to an informed dialogue with FNZ and DOC about what additional management measures might be appropriate the maintain biodiversity and habitats outside the footprint that are consistent with the legal requirements that apply to fishing activities within New Zealand's EEZ.

Submission: **DWG supports the introduction of a defined area within the EEZ that is zoned for sustainable food production by bottom trawling. This zone to be based on the areas that have already been contacted by bottom trawls (as determined by the 1989-2021 trawl footprint) and, given the impacts that have already occurred here, would be managed under different environmental bottom lines than might otherwise apply to those areas outside of this zone.**

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[32] See Clark, M., Anderson, O., Dunkin, M., Mackay, K., Notman, P., Roux, M-J and Tracey, D. (2015). Assessment of orange roughy and oreo trawl footprint in relation to protected coral species distribution. *A report prepared by NIWA for Deepwater Group Ltd*. 57p

5. Social, economic, and cultural impact of banning bottom trawling within the EEZ

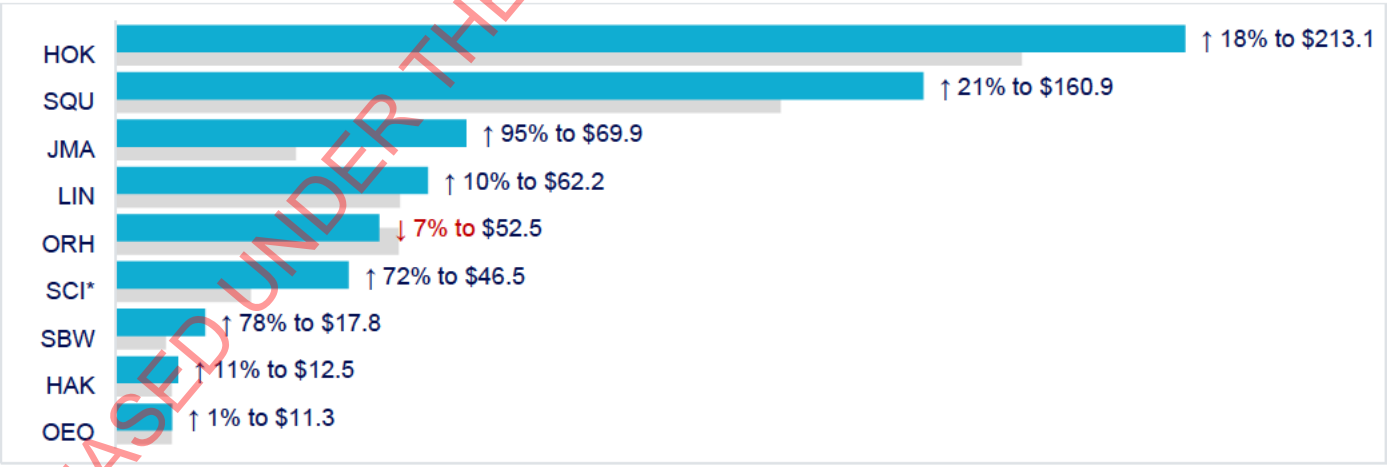
Food production is an essential component of New Zealand's social and economic well-being. As all forms of food production necessitate environmental changes, a balance between maintaining natural ecosystems and areas for food production is essential: [33]

- FNZ estimate around 78% of fish harvested from New Zealand's EEZ are taken in bottom trawls.[34]
- Bottom trawling within New Zealand's EEZ occurs only in discrete areas. Annually, the total area of contact by bottom trawls comprises around 1.2% of the EEZ[35]
- Within New Zealand's EEZ, an estimated ~10% of the EEZ has been utilised for food production [that is contacted once or more by bottom trawl gear] since 1989
- Around 90% of the EEZ remains untouched by bottom trawling activities (of this area, 31% has been closed to bottom trawling and set aside for conservation).
- Effective management measures for bottom trawling are already in place, including the closure of 31% of the EEZ by law to bottom trawling (1,206,439 km^2)
- On land we have designated 37% for food production (within which wholesale changes to natural biodiversity are provided for and are the norm) and we have set aside 32% for conservation.
- Of the total area that New Zealand has set aside for conservation purposes, 94% is within our oceans.

Bottom Trawling in New Zealand

New Zealand's deepwater fisheries are an important contributor to New Zealand's economy, providing catches of 215,555 GWT for our 9 tier 1 species in 2021-22, with export values (FOB) of NZ $646.7 million in 2021-22.

Export values (NZ$ FOB) of 9 main deepwater species for 2020-21 & 2021-22



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[33] See DWG (2021) Submission to the Environment Select Committee (The Petition of Karli Thomas, on behalf of the Deep-Sea Conservation Coalition and its member groups (Save deep sea corals – ban bottom trawling on seamounts). 75pp; Baird, S.J.; Mules, R. (2021). The extent of bottom contact by commercial trawling and dredging in New Zealand waters, 1989–90 to 2018–19. *New Zealand Aquatic Environment and Biodiversity Report 260.*

[34] MPI (2021) Estimated Catch by Fishing Method 2018-19 to 2020-21

[35] Baird, S.J.; Mules, R. (2021). The extent of bottom contact by commercial trawling and dredging in New Zealand waters, 1989–90 to 2018–19. *New Zealand Aquatic Environment and Biodiversity Report 260.*

A recent independent report by BERL estimates the annual contribution to New Zealand's economy from deepwater fisheries is $2.7 billion (an increase from $1.8 billion in 2015) and the deepwater industry employs around 8,500 people (an increase from around 6,000 people in 2015).[36]

DWG notes that this economic contribution is not uniformly distributed around New Zealand, noting that deepwater fisheries are more important in some regions than others (e.g., Nelson, Timaru, Dunedin) and that the impact from reducing or ceasing bottom trawling will be felt more in some regional areas.

The socio-cultural contribution of deepwater fisheries is also fundamentally important to New Zealanders both nationally and regionally.

DWG notes that the Fisheries Deed of Settlement has its 30th anniversary this year. This agreement between the Crown and Iwi delivers on the Crown's Treaty of Waitangi obligations in terms of recognising and providing for Māori to realise the potential of their fisheries taonga.

DWG's shareholders collectively own 91% of all deepwater quota. DWG shareholders include Te Ohu Kaimoana and most of the Iwi and Iwi enterprises who own quota for deepwater species. Māori fishing interests are active in the governance of DWG and together own or control some 40% of all deepwater quota.

Across all of DWG's shareholders, there is a collective agreement on the adoption of active stewardship and conservation of the fisheries resources and of the oceanic environment that supports these in every aspect of how we operate when harvesting food from this fragile marine environment.

Given the social, economic, and cultural importance of deepwater fisheries in both a national and regional context, it is recommended that prior to the imposition of any further restrictions on bottom trawling within New Zealand's EEZ, an independent assessment of the societal, economic and Treaty Settlement impacts of any such measures is undertaken.

Submission: Given the social, economic, and cultural importance of deepwater fisheries in both a national and regional context, DWG requests that, prior to the imposition of any further management restrictions on bottom trawling within New Zealand's EEZ, an independent assessment of the societal, economic and Treaty Settlement impacts of any such measures is undertaken.

DWG seeks the opportunity to further discuss these proposals with FNZ.

Kindest Regards,



Aaron Irving
Chief Executive
Deepwater Group Ltd

[36] BERL (2022) The economic contr bution of commercial fishing to the New Zealand economy

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Appendix:

DWG Bottom Trawling Initiatives

Balancing food production with EAFM has been a central DWG activity since 2006.

The performance of our main deepwater fisheries is independently assessed annually under MSC's ecolabel programme. Currently, 19 New Zealand hake, hoki, ling, orange roughy, and southern blue whiting fisheries are certified sustainable in conformance with the MSC Fisheries Standard. What is more, apart from 2 orange roughy fisheries, all of the fisheries that employ bottom trawl fishing gear are certified without any conditions of certification, which puts them in the top 5% of the world's best-managed and independently assessed fisheries.

The 2021 report from the Office of the Prime Minister's Chief Science Advisor noted that a "*strength of the MSC standards is that fisheries have to maintain certification, not just achieve it once*."[37] The report added:[38]

> *"Ongoing improvements in fishing sustainability are key to gaining and maintaining certification, which can include approaches such as establishing new harvest strategies, developing measures to minimise bycatch, mitigating fishing impacts on vulnerable species, habitats and ecosystems, and changing governance or policy practices. In addition to annual audits to make sure standards are continuing to be met, recertification has to be achieved every five years. In that time, the standards will have evolved to reflect improved knowledge and understanding about the wider impacts of fisheries, making sure that the bar for sustainable practice continues to be raised."*

DWG finds that these science-based reviews are all too often hampered due to the lack of comprehensive baseline ecological information beyond the relatively small areas in the EEZ where we fish.

In addition, the risks of adverse effects that deepwater trawling may pose to epi-benthic biodiversity and biogenic habitats remain constrained due to the lack of scientific information on the nature and extent of these benthic habitats throughout the EEZ. An inventory of the nature and extent of benthic biodiversity within our oceans in the public interest is the role of the Government, one that it has yet to be adequately delivered.

Further to this, DWG has recently agreed to invest several million in partnership with CSIRO to deliver science over the next five years to further our understanding of deepwater benthic biodiversity and biogenic habitats. This work has two main Streams:

1. **Habitat surveys of the benthic biodiversity within selected areas:** Benthic surveys that quantitatively assess the nature and distribution of benthic organisms in the habitats of selected Underwater Topographic Features (UTFs) using CSIRO's underwater towed video system (with real-time connectivity to the survey vessel). The objective is to quantitatively map and assess the habitat types within each survey area (e.g., mud, sand, rock, biogenic) and to quantify species' occurrences within biogenic habitats (i.e., areas containing corals, sponges, and other epibenthic invertebrate communities) using CSIRO's Artificial Intelligence (AI) capabilities.
2. **Industry trawl camera systems:** DWG and vessel owners have contracted CSIRO to develop and deploy bespoke SMART-Cam technology (Seafloor Monitoring, Automated Recording of Trawls). These SMART-Cam systems currently under-development will deliver a unique seafloor monitoring programme, the results from which will provide a scientific basis for an informed strategy for assessing and managing risks to benthic communities from deepwater trawling by identifying and quantify the benthic habitat types and the biodiversity along trawl pathways.

[37] Prof. Dame J. Gerrard. (Feb 2021). *The Future of Commercial Fishing in Aotearoa New Zealand.* A report from the Office of the Prime Minister's Chief Science Advisor. Pp 331-332

[38] *Ibid*.

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Other DWG Initiatives:

- **Environment Select Committee:** DWG engaged with the Environment Select Committee in response to the 'Ban bottom trawling on Seamounts' petition by the DSCC, providing a comprehensive science-based report, and the provision of other evidence. The process culminated in a balanced Select Committee report, that recommended consideration by a Forum made up of the main parties.
- **Trawl Footprint Analyses**: Industry developed the trawl footprint analyses for deepwater fisheries, which are now being annually contracted by FNZ, for use to precisely identify the areas where we bottom trawl and do not bottom trawl.
- **Benthic Identification Review:** DWG has implemented procedures to improve benthic identification by fishers to further improve reporting of incidental encounters. We have undertaken a pilot review of the reporting of benthic species captured by commercial trawlers by FNZ/DOC observers, and we are seeking a review to improve the identification protocols, a process to amend historical records, and improved training/recording in the future.
- **Carbon Lifecycle Analysis**: Following advice from Dame Juliet Gerrard, the Prime Minister's Chief Science Advisor, DWG has contracted AgResearch to undertake LCA of carbon usage by deepwater factory trawlers in New Zealand's EEZ. This study is benchmarked against the carbon usage of other forms of food production in New Zealand and globally. Preliminary results show deepwater trawl vessels within New Zealand's EEZ produce food with one of the lowest carbon emissions profiles of all food producers.

DWG Initiatives currently in progress:

- **Symposium on Food Production in the EEZ**: DWG in concert with others in industry will host a symposium in early 2023 with independent specialists addressing the environmental credentials of matters of seafood production from our oceans, the adverse effects on benthic ecology due to non-fishing activities (e.g., sedimentation from adjacent land use), to set the broader context in order to highlight the comparatively light environmental effects caused by seafood production when compared to land-based food production
- **Surveys of benthic biodiversity in selected areas** –CSIRO is scheduled to start benthic surveys in 2023 to quantitatively assess the nature and extent of benthic biodiversity in areas where coral captures have been recorded and to 'ground-truth' selected areas which the zonation model suggests may contain biogenic habitats of high conservation interest.
- **SMART-Cam**: DWG is developing a deepwater headline camera system for routine deployment on bottom trawls to routinely collect photographic data of the benthos along commercial trawl paths and to have these data independently and quantitatively analysed. Having considered potential options internationally some years ago, DWG contracted CSIRO to develop a bespoke system and to use their well-developed AI systems to analyse the data. Intitial testing has been successfully completed and further testing will be undertaken in New Zealand waters during 2023.
- **eDNA**: Discussions are underway to establish the efficacy of eDNA techniques in determining the location and species mixes of biogenic habitats in deepwater regions with a view to trials in 2023.
- **International Best Practice Review**: Review of international practices that reduce the benthic impact of bottom trawls on biogenic habitats in discussion with the University of Canterbury and other parties
- **Project Parkour**: DWG has established a project with the objective to develop methods that avoid bottom trawl contact with benthic biogenic habitats with epi-benthic fauna along the trawl path by detecting their presence ahead of the net and, using agile bottom trawl gear that is responsive adjustments in their deployment, by then lifting the trawl gear to 'fly' it above these habitats.

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Priority – Medium **Security Level** – In Confidence

Fisheries New Zealand
Tini a Tangaroa

To: Hon Rachel Brooking, Minister for Oceans and Fisheries
From: Emma Taylor, Director Fisheries Management, Fisheries New Zealand

Managing the effects of bottom trawling in the Exclusive Economic Zone Forum

Date	8 May 2023	**Reference**	B23-0312

Decision required	Date decision required by
YES ☒ / NO ☐	11 May 2023

Purpose
This briefing provides information about the multistakeholder 'Managing the effects of bottom trawling in the Exclusive Economic Zone (EEZ) Forum' and seeks confirmation of the proposed next steps.

Other agencies/industries consulted on during the production of this briefing
Department of Conservation ☒

Contacts for telephone discussion (if required)			
Name	**Position**	**Contact number**	**First contact**
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James Andrew	Manager Deepwater		☒
Andy Biggerstaff	Fisheries Analyst		☐

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Background

1. A multi-stakeholder forum of industry, environmental NGO and National Iwi Chairs Forum members met throughout 2022 to discuss and make recommendations on further measures to manage the effects of bottom trawling within the EEZ. The forum primarily focused on exploring spatial closures to bottom trawling.

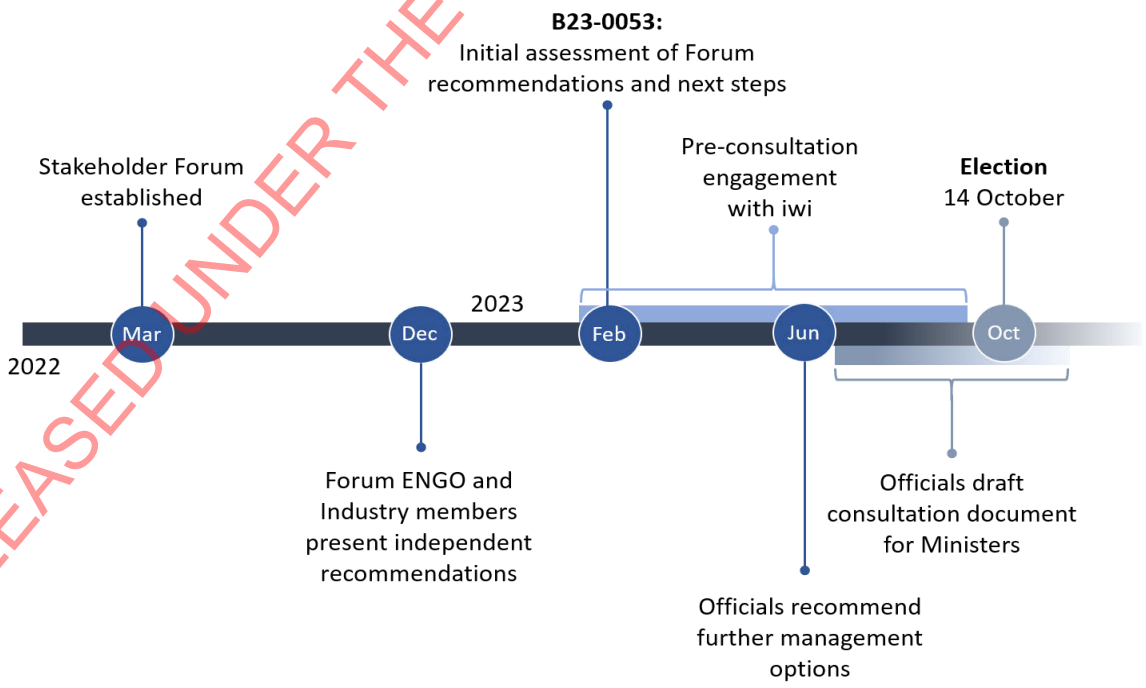
2. The forum concluded in December 2022 (refer Figure 1 for a high-level timeline). While the forum agreed high-level objectives, they could not agree on management recommendations. Industry and eNGO members submitted separate recommendations for further management measures.

3. The former Minister for Oceans and Fisheries and the Minister of Conservation were provided a briefing in February 2023 on the forum process, outcomes, and an initial assessment of the recommendations (B23-0053). Direction on the timing and next steps of this work was also sought. This briefing is attached in full in **Appendix One**.

4. At the time, Ministers noted the wide-ranging recommendations from the Forum members and directed Fisheries New Zealand and the Department of Conservation to continue to develop management options and report back to both Ministers at the beginning of June 2023 with recommendations.

5. There are difficulties associated with progressing significant policy decisions in the pre-election period. Therefore, it was directed that any consultation on new management measures would occur post the general election. This timeframe also allows officials to progress pre-consultation engagement with tangata whenua, noting the *Fisheries Act 1996* requires us to provide for their input and participation.

Figure 1: High level timeline of the project milestones



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Next steps

6. Forum members recently sought updates on the next steps for this process. While agency officials have continued to engage with forum members to understand and map their recommendations, it is recommended you write to members thanking them for their participation and outlining next steps. This would include noting the wide-ranging nature of the Forum's recommendations and that officials have been tasked with developing additional management options. A draft letter is attached in **Appendix Two**.

7. In preparation for providing further advice in June, Fisheries New Zealand and the Department of Conservation officials are continuing to develop and refine further management options, progressing pre-consultation engagement with tāngata whenua to understand their rights and interests, and assessing the legal and compliance implications of potential management options.

8. Guided by Ministerial feedback on officials' recommendations that will be provided in June and ongoing pre-consultation engagement, officials will work on developing a draft consultation document. Public consultation on this topic will be contingent on post-election Ministerial priorities.

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Recommendations

9. It is recommended that you:

a) **Note** the contents of the attached briefing (**Appendix One**) that was provided to the previous Minister for Oceans and Fisheries.

NOTED

b) **Agree** for Fisheries New Zealand and the Department of Conservation officials to continue to develop additional management options and to provide advice on these in June 2023, followed by the development of a draft consultation document.

YES / NO

c) **Agree** to sign the attached letter thanking members for their participation in the Forum process and updating them that Fisheries New Zealand and the Department of Conservation officials have been tasked with developing additional management options (**Appendix Two**).

YES / NO

d) **Agree** to forward this briefing to the Minister of Conservation for her agreement and to sign the letter.

YES / NO

EE Taylor

Emma Taylor
Director Fisheries Management

Hon Rachel Brooking
Minister for Oceans and Fisheries

/ / 2023

Minister's comments

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Appendix One: B23-0053

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Appendix Two: Draft Letter is out of scope of this request