

Overview and Summary

Recently, DWG provided a comprehensive evidence-based report to the Environment Select Committee in response to a petition and presentations submitted by Karli Thomas (Greenpeace) on behalf of the Deep-Sea Conservation Coalition (DSCC) and its member groups.

DSCC's petition (mis)represented bottom trawling as broadly destructive to seabed biodiversity (coral) on seamounts and as such might be banned. While many of DSCC's contentions may be relevant in an international context, few are directly applicable within New Zealand's EEZ. DWG's submission questioned the veracity of each of DSCC claims.

DWG's submission provided the Environment Select Committee with a summary of the pertinent scientific facts with respect to bottom trawling on seamounts and on other underwater topographical features, and the nature and extent of interactions with benthic biodiversity within our EEZ.

Bottom trawling has occurred in only 9% of our EEZ (1.1% per annum) and an estimated 80% of the wild seafood produced in New Zealand is harvested by bottom trawls.

However, there remains a lack of transparency with respect to how we might mitigate interactions with benthic biodiversity.

This paper proposes a number of responsive measures for your consideration to both increase that transparency and that are designed to put the management of benthic biodiversity interactions under Industry control.

Corals are iconic protected species – we ignore this at our peril

It has been clear for some time that we need to become proactive in managing a reduction in the level of interactions we have with protected species of corals. Corals are seen by eNGOs, the government, and the wider community as iconic species and something that we should not be damaging by bottom trawling. Most, but not all, coral species we encounter are protected. None are threatened or endangered.

DSCC's recent petition to ban trawling on 'seamounts' is largely founded on their concerns on impacts by bottom trawling on corals.

One clear error DSCC has made, through their lack of knowledge, is that almost all of our interactions with corals occurs on seamounts (and other UTFs). This not true. Corals are widespread throughout the EEZ. Only some 8% of our captures are from UTFs, 92% of coral captures are from flat or sloping grounds.

DWG's submission summarises what is known about coral species, their imputed distributions across the EEZ and their distributions by depth in relation to our fishing grounds. We can continue to argue, as we have within our MSC assessments for orange roughy, that our impacts on corals are so minor they do not constitute adverse effects and therefore acceptable.

However, given the increased focus on corals and the higher MSC requirements under v2.0, we will now need to demonstrate effective management responses to pro-actively mitigate our level of interactions with coral species.

The nature of our interactions with corals

DWG has obtained observer data from FNZ for the most recent three years (2017-18, 2018-19 and 2019-20, as catch location data were recorded with more precision) and contracted GNS Science to analyse these.

A summary of the results of the annual averages for these years are shown in Table 1:

Table 1: Average annual estimated total coral capture based on observer records (2017-18 to 2019-20)¹

Categories	ORH*		HOK [#]	SQU	SCI	JMA/ BAR	All DW
	UTFs	Flats	Flats	Flats	Flats	Flats	Flats
Numbers of tows	1,020	4,199	13,332	4,557	4,448	4,025	31,581
Observer coverage (%)	18%	23%	36%	74%	13%	56%	38%
Observed tows with coral (%)	13%	10%	1%	3%	2%	0.3%	3%
Estimated coral capture - live (kg)	572	1,468	137	1,083	383	21	3,754
Total coral capture - live (%)	56%		4%	29%	10%	1%	-
Estimated coral capture - rubble (kg)	-	5	2	4,331	1	41	4,380
Total coral capture - rubble (%)	0.1%		0.05%	99%	0.02%	0.9%	
Estimated total coral capture (kg)	572	1,473	139	5,414	384	62	8,134
Estimated total coral capture (%)	25%		2%	67%	5%	1%	
Estimated capture rates (kg/ tow)	0.39		0.01	1.19	0.09	0.02	

* ORH group include ORH, OEO, CDL, and BYX target tows

[#] HOK group includes HOK, HAK, LIN, SWA, WWA, and WAR target tows

In summary, from observer records scaled up to estimates of the likely total quantities:

- On average, we are catching around 8.1 tonnes coral each year in deepwater trawl fisheries (the range over these three years was 2.6 to 16.6 tonnes).
- Most of the catch is coral rubble (54%, 4.4 tonnes).
- Most of the coral catch is taken in the squid fisheries (67%, 5.4 tonnes), 80% of which is coral rubble.
- Orange roughy and oreo fisheries capture 26% of the coral (2.1 tonnes), almost all of which is live coral (>99%)
- Overall, 56% of live coral captures occur in the orange roughy and oreo fisheries, 99% of coral rubble captures occur in the squid fisheries.

Proposed mitigation of our interactions with corals

Considering the above, DWG proposes the staged development and implementation of a multipronged approach to mitigate our bottom trawling interactions with corals with the following components:

- The proposed Benthic Operational Procedures be considered, agreed and adopted by all vessel operators undertaking bottom trawling within deepwater fisheries, commencing on 1 October 2021.

¹ Data Source: J. Moriarty, MPI, Rep Log 13830, August 2021. J. Black, GNS, August 2021 (Data analysis)

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- Additional measures be developed, refined and applied within the three certified orange roughy fisheries in the first instance.
 - We will almost certainly need to set in place effective management responses to our impacts on benthic habitats in order to maintain MSC Certification. The orange roughy fisheries are where most of the captures of live coral have been recorded and, hopefully, where it will be easier for vessel operators to agree and to apply effective mitigation measures.
 - Once the efficacy of proposed measures has been established within the three orange roughy fisheries, consideration can then be given to their possible application elsewhere.

DWG proposes the staged development and implementation of:

1. **Benthic Operational Procedures:** A draft copy is attached for your consideration. This draft OP is quite high level, with more emphasis being placed on reporting and benthos avoidance, rather than on benthos interaction response management (until such time that we have response procedures that are based on meaningful and agreed settings). It is worth noting, as with our other OPs, is that compliance is monitored by Government observers and the resulting metrics are collated and made available publicly by FNZ.
2. **Identifying and managing towlines:** DWG has contracted GNS Science to categorise all bottom trawl towlines for deepwater species over the last three years as 'green' (no observed coral captures), 'orange' (observed captures of coral rubble) and 'red' (observed captures of live coral). Commencing with the three certified orange roughy fisheries, we propose a discussion with skippers and vessel operators to identify towlines where corals are often caught and to obtain by joint agreement, where tows might no longer be made. DWG is not suggesting closed areas or 'move-on rules' at this time, rather the future avoidance of towlines where coral has been captured.
3. **Confirmation of substrates and benthic biodiversity along our towlines:** Most of our fishing grounds are over mud, sand or hard substrates, with little if any epi-benthic fauna (i.e., the sticky-up invertebrates – corals, sponges, foraminifera – that are vulnerable to removal by bottom trawling). We need to establish this and to identify the areas we trawl where these do exist. DWG has signed a five-year research partnership with CSIRO, part of which is to develop a robust camera/lighting/data recording system that can be routinely deployed on trawl headlines during commercial tows, commencing in orange roughy fisheries on the Chatham Rise. The collected data will be quantitatively analysed by CSIRO using their proven AI techniques and the results reported to industry. The objective is to establish and to quantify the nature of the seabed and of any areas of benthic biodiversity at a marginal cost to commercial fishing operations, commencing with orange roughy, but once proven, to assess the application in other fisheries. DWG is not constrained to use CSIRO's camera systems and is currently exploring other commercial options.
4. **Survey Benthic Biodiversity on Selected UTFs:** DWG has signed a five-year research partnership with CSIRO, part of which is to undertake benthic surveys of selected UTFs. The objective is to quantitatively assess the nature and extent of substrates and of the benthic biodiversity. The collected data will be quantitatively analysed by CSIRO using their proven AI techniques and the results reported to industry. This will enable us to demonstrate where corals and other epibenthic fauna occur on and nearby these UTFs.

Recommendation DWG asks Directors to:

- Consider and approve the proposed Benthic Operational Procedures to be adopted by all vessel operators undertaking bottom trawling within deepwater fisheries, commencing on 1 October 2021.
- Support the staged development and application of the other management measures within the three MSC Certified range roughy fisheries, in the first instance
- Note that once the efficacy of proposed measures has been established, consideration might then need to be given to their possible application in other deepwater trawl fisheries

G Clement & A Irving
CE and Deputy CE
07 September 2021

Appended

Draft Benthic Operational Procedures