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**Full Assessment  
New Zealand Orange Roughy Fisheries**



**Public Certification Report  
December 2016  
Volume 3: Client Agreement; Objections and Decision**

**Prepared for**  
Deepwater Group Limited

**Prepared by**  
MRAG Americas, Inc.

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# Appendix 5. Client Agreement

5 December 2016

Dr Bob Trumble  
MRAG Americas  
10051 5<sup>th</sup> Str. N, Suite 105  
St. Petersburg, Florida 33702.

Dear Bob

### **Acceptance of Public Certification Report – New Zealand Orange Roughy**

On behalf of Deepwater Group's (DWG) shareholders I'd like to thank you and your team for a job well done. This was a long and hard road, one which we started down some 15 years ago. Given the nature of these fisheries and the need to carefully work through all of the issues and the new information, this assessment process was, of necessity, protracted. In addition, given the concerns held by many of the stakeholders about orange roughy fisheries, the process was extended further by the objections and independent adjudication processes.

However, in the end the rigour and clarity of MRAG's assessment was found by the IA to fully accord with the record and with the MSC FCR.

DWG accepts your Public Certification Report, upon amendment as directed by the IA, for the three New Zealand orange roughy Units of Assessment and we request that this be published on MSC's website as soon as it is completed.

A description of the trawl gear used for orange roughy fishing in New Zealand has been forwarded under separate cover.

Regards,



George Clement  
*Executive Officer*  
Deepwater Group Ltd

# Appendix 6 Objections Process

## **Independent Adjudicators acceptance of Notice of Objection from WWF**

# Objection to the certification of New Zealand Orange Roughy fishery-

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## Notice of Acceptance

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The Marine Stewardship Council (MSC) has received a Notice of Objection (NOO) dated 3 June 2016 from World Wildlife Foundation Smart Fishing Initiative (WWF) seeking to object to the certification of the New Zealand Orange Roughy fishery .

### Time of Receipt

I wrote to the objectors to clarify the time of receipt of the NOO on 10 June 2016. WWF responded on 11 June 2016.

The issue before me was that under the Objections Procedure, in order to be validly accepted, objections have to be received within 15 working days after the Final Report and determination is posted on the MSC website and by 5pm British Standard Time (BST), “unless otherwise stated” - see CD 2.3.2 ,2.10.1.2, 2.10.1.4 and 2.10.1.6. In this case, the deadline for receipt of objections was given by the MSC in a stakeholder email and also referenced in the stakeholder announcement by the certification body, MRAG, as 5pm GMT 3 June 2016.

This objection was received by MSC at 4.08pm GMT and 5.08pm BST on 3 June 2016.

Given the MSC statement that GMT applied, I am proceeding on the basis that the only fair conclusion would be that this amounted to the normal rule of BST, being “otherwise stated” (particularly given that MRAG had also given 5pm GMT as the prevailing deadline).

For the sake of clarity, I would emphasise that from here on all deadlines in this objection process will be according to GMT.

### Acceptance of NOO

Having determined that the objection was validly submitted within the deadline, I have to consider under CD 2.4 of the MSC Objections Procedure whether the Notice of Objection is in a form required by these procedures and whether it has a “*reasonable prospect of success*”. For the purposes of this section, an objection has a “*reasonable prospect of success*” if the objection is not spurious or vexatious and some evidence has been presented on the basis of which I could be reasonably expected to determine that one or more of the conditions in CD 2.7.2 are satisfied.

I have decided that the Notice of Objection is in a form required by procedures and does have a realistic prospect of success. I have decided to accept the Notice of Objection.

### Date of Publication of Objection

The date of publication for this objection will therefore be the 20 June 2016.

### Representations/Response

Under CD 2.4.7, the subject fishery and any other stakeholder that participated in the fishery assessment process, may, within 15 working days of the date of publication, that is, by 5pm GMT 8 July 2016, submit written representations on the matters raised in the Notice of Objection.

The CAB is to reconsider its Final Report and Determination in light of the matters raised in the Notice of Objection and by 5pm GMT 15 July 2016, provide a written response to the Notice of Objection.

CD2.5 provides that:

*“2.5.1.1 The response shall provide appropriate information indicating the extent to which the matters set forth in the notice of objection were considered in the fishery assessment and the impact thereof on the Determination.*

*2.5.1.2 In formulating its response, the CAB shall also take into account any written representations received in accordance with CD 2.4.7.*

*2.5.1.3 The CAB shall also indicate and give reasons for any proposed changes to its Final Report and determination in the light of the reconsideration.”*

Any issues with regard to the admissibility of evidence relied upon by the objectors will be determined after the CAB has provided its response.

### Consultation Phase

After receipt of the CAB’s response the Independent Adjudicator shall consult with the objectors, the subject fishery and the CAB in order to determine whether there is a possibility of a settlement; i.e. whether the differences between the parties may be resolved through a mutually acceptable adjustment to the Final Report and Determination (which may include any additional corrective measures recommended by the certification body, or amendments). If such a settlement is not possible, then the matter will proceed to formal Adjudication.

Clearly, if the parties remain very far apart, the only reasonable way forward would be to proceed to adjudication under CD 2.6 of the Objections Procedure. On the other hand, if there is a possibility that in-depth consultations may be helpful, the possibility should be explored in order to avoid further delays and costs.

The objectors should therefore notify the MSC as soon as possible after receiving and considering the further responses and submissions and in any event by 5pm GMT 20 July 2016 whether they consider that the CAB’s response provides any reasonable basis for exploring an acceptable solution to the whole or any part of the objection.

If so, arrangements will be put in place for a further exchange of views, including if useful, telephone conferences. Please can all parties ensure that relevant individuals are available for any consultations in the period immediately following the above date.

**Melanie Carter**

**Independent Adjudicator**

**20 June 2016**

**Independent Adjudicators acceptance of Notice of Objection from Deep Sea Conservation Coalition**

# Objection to the certification of New Zealand Orange Roughy fishery-

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## Notice of Acceptance

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The Marine Stewardship Council (MSC) is in receipt of a Notice of Objection dated 3 June 2016 from Deep Sea Conservation Coalition, Greenpeace New Zealand, Environmental and Conservation Organizations of New Zealand and Bloom Foundation (“the objectors”). I am appointed Independent Adjudicator to this objection.

### Acceptance of NOO

I have to consider under CD 2.4 of the MSC Objections Procedure whether the Notice of Objection is in a form required by these procedures and whether it has a “*reasonable prospect of success*”. For the purposes of this section, an objection has a “*reasonable prospect of success*” if the objection is not spurious or vexatious and some evidence has been presented on the basis of which I could reasonably be expected to determine that one or more of the conditions in CD 2.7.2 are satisfied.

In exercising this test I may either (a) accept the objection (b) dismiss any part or the whole of the objection, giving written reasons or (b) request further clarification from the objector.

On 10 June 2016 I issued a letter seeking further clarification from the objectors. The objectors responded on 17 June 2016. From this point forward, the Notice of Objection is taken as including the contents of that letter.

I have decided that the Notice of Objection is in a form required by procedures and does have a realistic prospect of success. I have decided to accept the Notice of Objection.

### Date of Publication of Objection

The date of publication for this objection will therefore be the 20 June 2016.

### Timing of deadlines

There is another objection to the certification of this fishery, made by WWF. In relation to that objection there has been an issue as to whether it is Greenwich Meantime (GMT) or British Standard Time (BST) which is to apply to the deadline for receipt of objections imposed under the Objection Procedure. The Notice of Acceptance for that objection deals with this point. For the sake of clarity, I would emphasise that in both objections from here on all deadlines will be according to GMT.

### Representations/Response

Under CD 2.4.7, the subject fishery and any other stakeholder that participated in the fishery assessment process, may, within 15 working days of the date of publication, that is, by 5pm

GMT 8 July 2016, submit written representations on the matters raised in the Notice of Objection.

The CAB is to reconsider its Final Report and Determination in light of the matters raised in the Notice of Objection and by 5pm GMT 15 July 2016, provide a written response to the Notice of Objection.

CD2.5 provides that:

*“2.5.1.1 The response shall provide appropriate information indicating the extent to which the matters set forth in the notice of objection were considered in the fishery assessment and the impact thereof on the Determination.*

*2.5.1.2 In formulating its response, the CAB shall also take into account any written representations received in accordance with CD 2.4.7.*

*2.5.1.3 The CAB shall also indicate and give reasons for any proposed changes to its Final Report and determination in the light of the reconsideration.”*

Any issues with regard to the admissibility of evidence relied upon by the objectors will be determined after the CAB has provided its response.

### Consultation Phase

After receipt of the CAB's response the Independent Adjudicator shall consult with the objectors, the subject fishery and the CAB in order to determine whether there is a possibility of a settlement; i.e. whether the differences between the parties may be resolved through a mutually acceptable adjustment to the Final Report and Determination (which may include any additional corrective measures recommended by the certification body, or amendments). If such a settlement is not possible, then the matter will proceed to formal Adjudication.

Clearly, if the parties remain very far apart, the only reasonable way forward would be to proceed to adjudication under CD 2.6 of the Objections Procedure. On the other hand, if there is a possibility that in-depth consultations may be helpful, the possibility should be explored in order to avoid further delays and costs.

The objectors should therefore notify the MSC as soon as possible after receiving and considering the further responses and submissions and in any event by 5pm GMT 20 July 2016 whether they consider that the CAB's response provides any reasonable basis for exploring an acceptable solution to the whole or any part of the objection.

If so, arrangements will be put in place for a further exchange of views, including if useful, telephone conferences. Please can all parties ensure that relevant individuals are available for any consultations in the period immediately following the above date.

**Melanie Carter**

**Independent Adjudicator**

**20 June 2016**

**Notice of objection from WWF**

## MSC Notice of Objection Form

This form should be completed in accordance with the MSC Objections Procedure. More information on the procedures can be found at <http://www.msc.org/get-certified/fisheries/assessment/objections>

This form may be completed and emailed to the MSC at [objections@msc.org](mailto:objections@msc.org), where it will be forwarded to the Independent Adjudicator.

Objectors should note the following excerpt from the MSC Certification Requirements in relation to how the Independent Adjudicator will assess the admissibility of an objection:

CD2.3.4 The notice of objection must set out clearly and precisely the basis upon which CD2.7.2 is said to apply. It must:

- CD2.3.4.1 Identify the alleged errors in the final report and determination;
- CD2.3.4.2 Explain in sufficient detail why it is claimed that the alleged errors made a material difference to the outcome of the determination or the fairness of the assessment.

Objectors should further note that an objection will be dismissed if it is not judged to have a reasonable prospect of success:

CD2.4.2 For purposes of this Section, an objection has a “reasonable prospect of success” if, in the view of the Independent Adjudicator:

- CD2.4.2.1 It is not spurious or vexatious;
- CD2.4.2.2 Some evidence is presented on the basis of which the Independent Adjudicator could reasonably expect to determine that one or more of the conditions set forth in CD2.7.2 are satisfied.

### PART ONE: IDENTIFICATION DETAILS

Fishery assessment to which this objection applies	New Zealand Orange Roughy Fisheries
Name of conformity assessment body	MRAG Americas
<b>Contact details for objecting party</b>	
Organisation(s)	WWF Smart Fishing Initiative (SFI)
Contact person	Alfred Schumm
Address	Moenckebergstraße 27 20095 Hamburg Germany
Phone Number (including country code)	+49 40 530200-310
Fax Number (including country code)	+49 40 530200-313

Email address	<a href="mailto:Alfred.Schumm@wwf.de">Alfred.Schumm@wwf.de</a>
Organisation(s)	WWF New Zealand
Contact person	Peter Hardstaff
Address	Level 6, Davis Langdon House 49 Boulcott Street Wellington 6011, New Zealand
Phone Number (including country code)	+ 64(0)4 499 2930
Fax Number (including country code)	+64 (0)4 499 2954
Email address	<a href="mailto:phardstaff@wwf.org.nz">phardstaff@wwf.org.nz</a>

The following objection is being lodged on behalf of the above named organisation(s). I am authorised to make this submission on the above named organisations' behalf.

Name: Tatjana Gerling

Position: Senior Manager Whitefish & Markets, WWF SFI



Signed:

Dated: 3<sup>rd</sup> June 2016

## PART TWO: OBJECTING PARTY'S CREDENTIALS

<p>Please outline your prior involvement with this assessment</p>	<p>Subject fishery - CD2.3.1.1 <input type="checkbox"/></p> <p>Written submissions - CD2.3.1.2 <input checked="" type="checkbox"/></p> <p>Meetings attended - CD2.3.1.2 <input checked="" type="checkbox"/></p> <p>Participation prevented/impaired - CD2.3.1.3 <input type="checkbox"/></p>
<p>If you are objecting on the basis that you were a party to the assessment process that made written submissions to the conformity assessment body during the fishery assessment process or attended stakeholder meetings (as per Paragraph CD2.3.1.2 of the objections procedure) or that the failure of the conformity assessment body to follow procedures prevented or substantially impaired your participation in the fishery assessment process (as per Paragraph CD2.3.1.3 of the objections procedure), then please provide evidence and/or outline details to support this classification.</p>	<p>n/a</p>
<p>Please state your interest in the fishery and its certification</p>	<p>WWF actively engages as a stakeholder in a number of MSC fishery assessments in order to ensure proper application of the MSC standard and improve fisheries sustainability.</p>

## PART THREE: CATEGORISATION OF OBJECTIONS

You must complete one or more of Parts Three to Five in accordance with your answers to the following questions.

<p>Are you objecting on the basis that there was a serious procedural or other irregularity in the fishery assessment process that made a material difference to the fairness of the assessment, as per Paragraph CD2.7.2.1 of the objections procedure?</p>	<p>Yes <input checked="" type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>If YES, complete Part 4</p>
<p>Are you objecting on the basis that the setting of conditions by the CAB in relation to one or more performance indicators cannot be justified because the conditions fundamentally cannot be fulfilled, and the condition setting decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it, as per Paragraph ACD2.7.2.1 of the objections procedure?</p>	<p>Yes <input checked="" type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>If YES, complete Part 5</p>
<p>Are you objecting on the basis that the score given by the conformity assessment body in relation to one or more performance indicators cannot be justified, and the effect of the score in relation to one or more of the particular performance indicators in question was material to the outcome of the Determination, as per Paragraph CD2.7.2.2 of the objections procedure?</p>	<p>Yes <input checked="" type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>If YES, complete Part 6</p>
<p>Are you objecting on the basis that additional information not forming part of the record<sup>1</sup> that is relevant to the circumstances at the date of the Determination has not been considered, as per Paragraph CD2.7.2.3 of the objections procedure?</p>	<p>Yes <input type="checkbox"/></p> <p>No <input checked="" type="checkbox"/></p> <p>If YES, complete Part 7</p>

<sup>1</sup> As defined in Paragraph CD2.6.5.1 (a) of the objections procedure.

## **PART FOUR: OBJECTION PURSUANT TO PARAGRAPH CD2.7.2.1**

4.1 Please identify:

- a) the procedure(s) that you or your organisation believe were omitted or incorrectly followed by the conformity assessment body in the conduct of this assessment and the relationship of these matters to the MSC's procedural rules, as set out in the MSC Scheme Requirements that were in force at the time of the assessment; and/or

Our responses to section 4.1a begin on the next page.

- b) any other irregularity in the fishery assessment process that you or your organisation believe made a material difference to the fairness of the assessment.

Please see responses in section 4.1a.

4.2 Please state why you or your organisation believes that the failure to follow procedures by the conformity assessment body has significantly affected the result of the Determination such that the Determination should be altered?

We explain in section 4.1a why we believe each procedural error significantly affected the certification determination by the conformity assessment body. WWF believes that these procedural errors, considered collectively and in connection with the scoring errors we describe in section 6.1, have materially affected the fairness and objectivity of the way the fishery was assessed against MSC Principle 2. We argue that, had the assessment been done in conformity with MSC procedural requirements and had the fishery not been scored unreasonably, a large number of PIs under Principle 2 would be shown to not reach the SG80 scoring level, and consequently the fishery would not attain a overall score of 80 at the Principle level thereby leading to a fail of the fishery.

## Section 4.1a – Procedural Errors

### Procedural Error #1 – Serious or Irreversible Harm

#### Affected PIs: 2.4.1

WWF believes that MRAG has misinterpreted and misapplied the MSC definition of “Serious or Irreversible Harm” (SoIH) in their assessment of the habitat component. This procedural error made a material difference to the fairness of the assessment in relation to scoring of PI 2.4.1.

#### Misinterpretation:

We assert that the CAB has interpreted MSC guidance too narrowly, as if it were intended to mean that SoIH should only be inferred when one or more of the ecological impacts listed in MSC Guidance GCB3.2 (trophic cascades, local extinctions and so forth) is plainly evident. WWF contends that the list of examples of SoIH given by MSC was not intended to be exhaustive, nor was it meant to be the starting point for asking whether impacts are serious or irreversible.

WWF asserts that trawl impacts to deep sea habitats - particularly Vulnerable Marine Ecosystems (VMEs) - easily fulfill the MSC definition of serious or irreversible harm by virtue of meeting the criterion given in the second bullet point of GCB3.2: trawl impacts are “...effectively irreversible on time-scales of natural ecological processes.” Clark et al. (2016) estimate that recovery times for impacted megabenthos “are likely to span centuries to millennia” for many communities. Studies done in the region support the conclusion that recovery from benthic trawling is very protracted (e.g. Koslow et al. 2001, Clark and Rowden 2009, Althaus et al. 2009, Williams et al. 2010, Clark et al. 2015). To re-state this point: there is an abundance of scientific evidence to support the determination that the fishing method used by the subject fishery causes “irreversible harm” to deep sea habitats in the sense of the MSC definition. Any other conclusion would be unreasonable or arbitrary.

#### Misapplication:

The assessment team concludes that the fishery exceeds the SG80 level because there is “no more than a 30% probability that the true status of the component is within the range where there is risk of serious or irreversible harm.” The scoring rationale for PI 2.4.1 considers various lines of evidence, but the logic of their argument is framed by the notion that “high impact over a small proportion of the area is equivalent to low impact over a large proportion of the area” (FRvol2., p. 206-207). Or as one could re-phase it, “severe but small impacts are quickly diluted in a large ocean.”

We feel that the CAB’s argument for the absence of SoIH is severely flawed on a number of different levels (as outlined below). These levels are like a pyramid - one layer built atop another - making it difficult to cleanly separate one problem from the next.

1) Time: MRAG did not consider trawl impacts over the history of the fishery (see Procedural Error #2). Consequently the CAB underestimates the actual amount of harm done by the fishery and overestimates the current status of habitats.

2) Space: MRAG drew a very large perimeter around habitats so as to encompass the whole Kermadec bioregion. The UoCs occupy a relatively small area (mostly FMAs within the New Zealand EEZ). Thus, selection of a large bioregion has reduced the fishery’s proportional contribution to habitat impact. At the same time, assessing the ‘true’ status of habitat across the larger area has become more speculative and we must question whether selection of the Kermadec bioregion was an appropriate action (see Procedural Error #7). The MSC Guidance to CRv1.3 (GCB3.2 , GCB3.14.2) clearly states that

“local extinction” and “significant alteration of habitat cover/mosaic” should be considered, and under the broad Kermadec designation this level of detail has been glossed over.

3) Precision: MRAG presumed that the system for delineating and mapping habitats is accurate. We question this conclusion (see Scoring Error 7). We believe that uncertainty in habitat distribution was not adequately considered in the scoring process.

4) Logic: MRAG used estimates of trawled or untrawled area relative to total habitat area to derive the percentage of impacted habitat. Percentages of habitat were then assessed directly against probability levels (e.g. There is no more than a 30% probability that the true status of the component is within the range where there is risk of serious or irreversible harm). This conflates two different concepts, area and statistical probability, without presenting scientific evidence that the estimations are correct.

5) True Status: Absent from the CAB’s argument is any quantitative evidence to establish the “true status” of the relevant habitats across the designated bioregion. Given our imperfect understanding of habit distributions in the deep sea (see Procedural Error 7), and what appears to be an absence of synoptic data for habitat status, it is unclear how the CAB could assign such certainty.

We believe that the misinterpretation and misapplication of SoIH by MRAG is a substantial procedural error that made a material difference to the fairness of the assessment and the scoring of PI 2.4.1.

#### References:

Althouse, F., Williams, A., Schlacher, T.A., Kloser, R.J., Green, M.A., Barker, B.A., Bax, N.J., Brodie, P. and Schlacher-Hoenlinger, M.A. (2009) Impacts of bottom trawling on deep-coral ecosystems of seamounts are long-lasting. MEPS Vol. 397: 279–294.

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. ICES Journal of Marine Science, 73: i51–i69.

Clark, M., Anderson, O., Dunkin, M., Mackay, K., Notman, P., Roux, M-J. & Tracey, D. (2015) Assessment of orange roughy and oreo trawl footprint in relation to protected coral species distribution. MSC P1 2.3.1. February 2015. NIWA Client Report No: WLG2014-56 prepared for Deepwater Group Limited. 57 p.

Clark, M.R. and Rowden, A.A. (2009) Effect of deepwater trawling on the macroinvertebrate assemblages of seamounts on the Chatham Rise, New Zealand. Deep-Sea Research I 56: 1540–1544.

Koslow, J.A., Gowlett-Holmes, K., Lowry, J.K., O’Hara, T., Poore, G.C.B. and Williams, A. (2001) Seamount benthic macrofauna off southern Tasmania: community structure and impacts of trawling. Mar Ecol Prog Ser 213:111–125.

Williams, A., Schlacher, T.A., Rowden, A.A., Althaus, F., Clark, M.R., Bowden, D.A., Stewart, R., Bax, N.J., Consalvey, M. and Kloser, R.J. (2010) Seamount megabenthic assemblages fail to recover from trawling impacts. Marine Ecology 31 (Suppl. 1):183–199.

#### **Relevant MSC Requirements or Guidance in force at the time of the assessment**

MSC Guidance to CRv1.3

### GCB3.2 General Requirements for Outcome PIs

The Outcome PI provides a measure of the status of each component. For most fisheries this single indicator will reflect the interactions of the fishery with many species and species groups within the P2 component.

For the Habitats and Ecosystem components, the concept of 'serious or irreversible harm' refers to change caused by the fishery that fundamentally alters the capacity of the component to maintain its function or to recover from the impact.

- This may also be interpreted as seriously reducing the ecosystem services provided by the component to the fishery, to other fisheries and human uses.
- Irreversible harm from fishing includes very slowly reversible harm that is effectively irreversible on time-scales of natural ecological processes (e.g. natural perturbation, recovery and generation times in the absence of fishing, normally one or two decades but may be shorter or longer depending on the species and ecosystem concerned).
- Examples of serious or irreversible harm include local or global extinction, serious recruitment overfishing, habitat loss on scales that have widespread detrimental consequences for the ecosystem services provided by the habitat (e.g. gross change in species composition of dependent species), and loss of resilience resulting in trophic cascades, fishery mediated regime shifts, etc. Explicit targets may not be appropriate or available for all of the components, in some cases because there is no scientific or general consensus on appropriate targets.
- While performance in relation to targets can be introduced where appropriate, the generic performance requirements relate to increasing confidence and safety margins with which serious or irreversible harm is avoided, including through the management tools, measures and strategies that are in place.

And

GCB3.14.2 Examples of serious or irreversible harm include the loss (extinction) of habitat types, depletion of key habitat forming species or associated species to the extent that they meet criteria for high risk of extinction, and significant alteration of habitat cover/mosaic that causes major change in the structure or diversity of the associated species assemblages.

Note: SoIH is defined differently for retained & bycatch species vs. Habitats+Ecosystems.

**Procedural Error #2 – A complete historical perspective**

**Affected PIs: 2.4.1, 2.3.1, 2.5.1**

The MRAG assessment team took the wrong view of historic data by under-emphasizing the historical record of trawl impacts to deep sea habitats. In our comments on the PCDR, WWF challenged how the CAB had treated the time-series data for trawl footprints in the UoCs. In their rebuttal to our comments (FRvol2, p. 214), MRAG defended their decision to truncate the dataset at an arbitrary point in the recent past (five years ago) because they had inferred that MSC intends for teams to evaluate the “current state” of the fishery. However, MSC requirements in CRv1.3 are actually quite clear on this topic (CB3.2.2): The CAB shall consider outcome status (i.e. the present condition) and the resilience of historical arrangements to function adequately (i.e. what happened in the past) in order to make an inference about the likelihood that management delivers low risk going forward (i.e. likely future condition).

It is apparent from the conclusions of a recent report that was a primary source for the assessment that MRAG’s approach is contrary to scientific advice. Clark et al. (2015, p.34) conclude that: “The footprint has reduced considerably over time and the proportions for the last 5 years are less than for all years. However, given the slow growth rates of almost all ETP coral species, and growing evidence that, at least for UTF populations, the main coral species cannot recover rapidly, the extent of the full footprint is probably more realistic for interpreting the extent of impact. The repetitive nature of much of the trawling footprint implies that where fishing has occurred, damage to the ETP coral assemblages is likely to have been considerable.”

We believe that, if habitat outcome had been assessed according to MSC rules, the historic record would show clearly that implementation of so called “measures” for habitat protection over the past 20+ years have resulted in serious trawl damage to a substantial amount of deep sea benthic habitat in each of the UoCs. This evidence casts doubts on any assertions by the team about the effectiveness of those measures to deliver low risk to habitats under future conditions. WWF asserts that this procedural error - truncating a time series of data to emphasize the recent past - has made a material impact to scoring of the outcome PI for habitat, and possibly also to some degree affected the scoring of outcome PIs for ETP corals and ecosystems where the CAB also relied on a truncated dataset to support their conclusions.

See also Procedural Error #1.

**References:**

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. ICES Journal of Marine Science, 73: i51–i69.

Clark, M., Anderson, O., Dunkin, M., Mackay, K., Notman, P., Roux, M-J. & Tracey, D. (2015) Assessment of orange roughy and oreo trawl footprint in relation to protected coral species distribution. MSC P1 2.3.1. February 2015. NIWA Client Report No: WLG2014-56 prepared for Deepwater Group Limited. 57 p.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

MSC Guidance to CRv1.3

CB3.2 General Requirements for Outcome PIs

CB3.2.2 The team shall consider both the current outcome status and the resilience of historical arrangements to function adequately and deliver low risk under future conditions when scoring outcome PIs.

**Procedural Error #3 – Key scoring information was confidential**

**Affected PIs: 2.3.1, 2.4.1**

In assessing fishery impacts to ETP corals and habitats, MRAG’s justification for assigning high scores has been based on the argument, presented in one form or another, that the areal extent of habitat impact is smaller than might be predicted from trawl frequencies alone because the fishery tends to operate along “established tow lines.” In other words, they argue that the trawling footprint is effectively frozen (at least for UTF habitats), being restricted to habitats that are already impacted.

In our review of the PCDR we were extremely critical of this conclusion because the CAB did not substantiate their assertions with hard evidence (e.g. quantitative data, analyses, results of modeling studies). To us, it appears that that their argument was based on opinion and anecdote rather than demonstrable fact.

In response to our comments on the PCDR, it came to light that the assessment team’s conclusion about the fishery following established tow lines was reached after they had viewed “confidential tow-by-tow information” (p. 186, FRvol2) - information that was not made available in the PCDR nor Final Report. This information is key in the sense that it “...is necessary for a stakeholder that is not party to this information to be able to properly review the logic used by the team in their conclusion about a particular performance indicator score” (MSC definition).

The practice of using confidential information to score a fishery lacks transparency and runs contrary to MSC rules. Further, it puts stakeholders at a significant disadvantage because we are unable to properly review the logic used by the team in their conclusions. As a major stakeholder in this assessment, WWF must insist that no confidential information is admitted as assessment evidence unless it has been handled in a manner consistent with MSC rules.

This procedural error had a material impact on the fairness of the scoring of at least two performance indicators. The CAB refers to established tow lines as part of the justification for scoring decisions in the scoring rationales for both PI 2.3.1 and PI 2.4.1.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3

24.5 Access to information

24.5.1 The CAB shall ensure that un-published key information necessary to enable a stakeholder who is not party to this information to be able to properly review the logic used by the team in their conclusion about a particular PI score is made available electronically, in printed form or otherwise for viewing by stakeholders.

24.5.1.1 The CAB shall make un-published key information available before the posting of the Public

Comment Draft Report, and shall ensure that the information is available throughout the subsequent stages of the assessment process until such time as a certification decision is made.

Also see MSC requirements relating to the use of confidential information in fishery assessments (G24.4) and associated guidance:

G24.4 Stakeholders play an important role in reviewing the results of assessments through the review of assessment reports. This process allows stakeholders to review the scores determined for assessing the performance of the fishery, and the rationale supporting those scores. Access to the information upon which a fishery's performance has been assessed is crucial in ensuring stakeholders are able to properly review assessment reports.

The need to ensure that transparency is afforded around all aspects of the assessment process is essential to ensuring that the benefits of stakeholder engagement in the process are delivered.

Annex AA: MSC-MSCI Vocabulary -Normative  
Key Information

Information, including concerns and knowledge, which is necessary for a stakeholder that is not party to this information to be able to properly review the logic used by the team in their conclusion about a particular performance indicator score.

**Procedural Error #4 – Clear separation of fact from opinion**

**Affected PIs: 2.3.1**

In reviewing scoring rationales for PIs where evidence was equivocal or unavailable, it was perhaps not surprising to find that WWF and MRAG fundamentally disagreed on how to interpret the absence of evidence. We believed that our debates came down to a difference of opinion. However, we were quite surprised to see that MRAG often, it seems, also placed their own team’s views in front of the opinions of leading experts. It is a curious role reversal because an assessment team is tasked with assessing the best available science - not refuting it. But this was apparently the case for PI 2.3.1 (see WWF comments on PCDR) wherein the debate was over whether or not there is potential for trawl-generated sediment plumes to have indirect impacts to ETP corals.

Table. Differing views about potential indirect effects of trawling on ETP corals (PI 2.3.1c)

<b>Indirect effect of benthic trawling</b>	<b>Experts*</b>	<b>MRAG</b>
Quantitative info available for shallow systems? (fact)	Yes	Yes
Quantitative info available for deep sea? (fact)	No	No
Potential for impact in the deep sea? (an opinion)	Yes	<b>No</b>

\*Experts are listed in the references below.

If MRAG had clearly separated fact from opinion in their assessment report (e.g. scoring rationale for PI 2.3.1c and elsewhere), we believe the disparity between the team’s view and that of prevailing scientific opinion would have been laid bare, and it would then be incumbent upon the CAB to justify why the team reached a different viewpoint than many of the world’s leading experts in the subject area.

We note that the assessment team is required to clearly and concisely separate fact from opinion in the assessment report. WWF asserts that the team did not follow this rule for at least one performance indicator. This procedural error made a material difference to our ability to properly review the logic used by the assessment team in reaching decisions about particular performance indicators. By extension, the procedural error materially affected the fairness of the assessment.

Also see Scoring Error #4 and #5.

References

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. – ICES Journal of Marine Science, 73: i51–i69.

Clark, M. and Anderson, O. (2013) Information on the Structure and Function of UTF Habitats. NIWA presentation to Deepwater Group Ltd. 54 p.

Clark, M., Anderson, O., Dunkin, M., Mackay, K., Notman, P., Roux, M-J. & Tracey, D. (2015) Assessment of orange roughy and oreo trawl footprint in relation to protected coral species distribution. MSC P1 2.3.1. February 2015. NIWA Client Report No: WLG2014-56 prepared for Deepwater Group Limited. 57 p.

Consalvey, M., MacKay, K. and Tracey, D. (2006) Information review for protected deep-sea coral species in the New Zealand region. NIWA Client Report: WLG2006-85. NIWA Project: DOC06307. November 2006. 58 p.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

MSC Code of Conduct (v1.0):

MSC audit personnel will:

4.4 Separate fact from opinion clearly and concisely in their audit / assessment reports.

CRv1.3

6.1.1 CABs shall ensure that CAB lead auditors, CoC auditors, group CoC auditors, fishery team leaders and members:

6.1.1.1 Have signed the MSC's Code of Conduct (available on the MSC website) confirming that they will comply with the Code.

**Procedural Error #5 – Default tree: clarification changes intent at SG100****Affected PIs: 2.4.2c**

Although the subject fishery has only a few weak measures in place for managing impacts to habitats, MRAG scored the fishery as attaining the SG100 level of PI 2.4.2c. WWF commented on this during PCDR review. We asserted that a partial strategy cannot be said to meet the SG100 level because the scoring guidepost clearly stipulates that “there must be clear evidence that the strategy is being implemented.”

In the CAB’s rebuttal (FRvol2, p. 204), they explained that “Regarding scoring issue (c), the assessment team received clarification from MSC (and this has also been reflected in the language of this scoring issue in v2.0 of the standard), that we are to evaluate evidence of effectiveness of the partial strategy or strategy.” MRAG seems to be referring to the default tree published in FCR2.0, wherein MSC lowered the bar for evidence needed to demonstrate an effective strategy. In FCR2.0, scoring issue c of PI 2.4.2 says (SG100): “There is some quantitative evidence that the measures/ partial strategy is being implemented successfully.”

MRAG has repeatedly stated in the assessment report that this fishery was assessed against the default tree using CRv1.3, and hence the new fishery requirements and default tree (FCR2.0) do not apply to this fishery. As such, we would argue that it is inconsistent of the CAB to use the SG100 guidepost from the new standard (or use a “clarification” that has the same effect). Furthermore, WWF believes that this action does not follow MSC rules. CABs are not allowed to swap trees after the start of the assessment (27.8) - certainly not at this late stage in the process. We assert that this unfair action made a material difference to the scoring of PI 2.4.2.

With respect to the possibility that MSC has given MRAG direction on their intent in applying the default tree, there is no published variation request which has been approved by MSC. We are unaware of any “clarification” mechanism which would enable a CAB to selectively choose pieces from the new standard. If selective clarification of the default tree is a real possibility (and we seriously doubt that it is), then WWF chooses to use MSC’s recent clarifications for “Serious or Irreversible Harm” and “VMEs” from FCR2.0.

Note1: At the start of the assessment, WWF suggested modifying the default tree to the suit the specific characteristics of the NZ orange roughy fishery (July 17, 2014), but MRAG assured us that “...changes to the assessment tree...will not improve the results of the assessment.” On July 21, 2014, MRAG confirmed that they would use the MSC Certification Requirements v1.3 and the default assessment tree.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3, Default assessment tree  
PI 2.4.2c

There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types.

SG80 There is some evidence that the partial strategy is being implemented successfully.

SG100 There is clear evidence that the strategy is being implemented successfully.

FCR2.0, Default assessment tree

SG100 There is some quantitative evidence that the measures/ partial strategy is being implemented successfully.

27.8 Confirming the assessment tree to be used

27.8.2 CABs shall use the structure and the default set of PISGs in the default tree as set out in Annex CB in all assessments unless:

27.8.2.1 The CAB submits a variation request to the MSC by following the procedure set out in Part A, clause 4.12, and;

27.8.2.2 The MSC accepts the variation request

27.8.3 The team shall review all available data from the pre-assessment and application, and the default tree contained in Annex CAB, and shall confirm whether or not the default tree will meet the specific characteristics of the fishery under assessment or it needs amendment.

Note: It is unclear how to us how MSC could have provided “clarification” to the CAB about which tree version they should use in the fishery assessment. The standard setter does not engage directly in fishery assessments and no such mechanism is described in CRv1.3. We acknowledge that MSC rules (e.g. 27.8.3.1) do allow CABs to modify the default tree through a defined variation approval process (27.8.3.1) but there is no indication that MRAG pursued this pathway.

**Procedural Error #6 – Forest for the trees: biogenic structure**

**Affected PIs: 2.4.1, UTF habitat and Slope habitat**

In the scoring rationale for PI 2.4.1, MRAG did not give explicit consideration to how trawling may impact upon the structure of deep water habitats. We believe this materially affected the fairness of the assessment and led to unreasonable scoring of the habitat outcome PI.

Deep water corals are habitat engineers. They build biogenic structures which contribute to the height, complexity and three-dimensional relief of deep sea benthic communities. In this respect corals are much like trees, and their cumulative growth over centuries can create impressive underwater 'forests'. Structure is important in ecology and structure is part of the MSC definition of habitat. So despite the fact that MRAG scored corals under the ETP component, it is still necessary for the CAB to consider impacts to biogenic structures under the habitat PI. We must not lose sight of the forest for the trees.

Biogenic habitat-forming species are extremely vulnerable to physical impacts. Deep-sea corals are fragile, sessile, slow growing, long-lived, have a low natural mortality rate, may have limited larval dispersal, and are restricted to certain habitats (e.g. seamounts) which are the focus of commercial fisheries. These attributes make it prudent to take a conservative approach in protecting them from undue losses. Andrews et al. (2002) cited a number of authors in saying that "many species of deep-sea corals provide high relief habitat for a number of ecologically important species of invertebrates and fishes" and made the recommendation that biogenic habitats be better studied.

Cold-water coral reef structures often have high diversity or abundance of fish species (Costello et al., 2005; Auster, 2007) and may provide nursery ground, spawning, and protective habitat (Review by Clark et al., 2016).

The CAB asserts that corals remain established in trawled habitats. But the scoring rationale does not give any insight into the spatiotemporal nature of trawl impacts to biogenic structures. Nor is there adequate consideration of the potential loss of function that may accompany destruction of topologically complex deep water habitats. There is increasing evidence that deep water (aphotic) corals are important fish habitat, a repository of data on ocean climate and productivity, and are hotspots of increased biodiversity, including undescribed species (Ross 2006). Do fishery operations compromise these functions?

WWF commented early in the assessment process about the importance of assessing fishing impacts to habitat structure and function. We even suggested modifying the default tree to clearly delineate between the two ecological roles of habitat engineer species. However, the CAB assured us that structure and function would be fully evaluated according to the default tree. It wasn't.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3, Annex AA: MSC-MSCI Vocabulary -Normative  
Habitat

The chemical and bio-physical environment including biogenic structures where fishing takes place.

PI 2.4.1 The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function.

**Procedural Error #7 – Kermadec: the appropriate bioregion?****Affected PIs: 2.3.1, 2.4.1, 2.4.3**

MRAG has adopted the Kermadec bioregion as the relevant area across which to assess fishery impacts to habitats. This represents an area vastly larger than the New Zealand EEZ (see Fig. 24 in FRvol1), which encompasses numerous UTFs. However, recent studies show that deep sea community composition varies at far smaller spatial scales (on the order of 100s of kms) and also varies significantly by depth. The habitat characteristics on seamounts are far more diverse than the assessment team's approach acknowledges. Clark et al. (2010) state that: "Benthic community composition on seamounts is depth stratified, reflecting environmental gradients that correlate with depth, such as temperature, oxygen concentration, food availability, and pressure (see section 3). Longhurst's (1998) observation that there is as much marine faunal change over 1000 m vertically as over 1000 km horizontally is likely to also apply to seamounts." Furthermore, the relevant habitat for orange roughy is in depth range 180 - 1809 m (Fishbase.org), so the part of UTFs in this range should be considered.

By including large areas that extend beyond the normal operating range of the orange roughy fishery in calculations of the impact of the fishery, the CAB distorted or minimized the proportion of the bioregion that appears to be impacted by the fishery and thereby erroneously 'credited' the fishery for not impacting habitat areas and types that are beyond fishable depths. Accordingly, WWF argues that the fishery does not meet the SG100 level of PI2.4.3a.

## References:

Clark et al. (2010). The Ecology of Seamounts: Structure, Function, and Human Impacts. *Annu. Rev. Mar. Sci.* 2:253–78.

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. *ICES Journal of Marine Science*, 73: i51–i69.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3

PI 2.4.3 SG100 The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types.

**Procedural Concern #8 –Ecosystem services?****Affected PIs: 2.5.1, 2.5.2**

The assessment team gave no serious consideration to the question of how the fishery impacts the capacity of the ecosystem to deliver ecosystem services to the component fishery, to other fisheries, and to human uses. The team assigned a score of 100 to PI 2.5.1 (Ecosystem Outcome) but the scoring rationale does not identify any ecosystem services whatsoever. MRAG only cites examples of the constituent elements of the ecosystem. Similarly, MRAG assigns a score of 90 to PI 2.5.2 (Ecosystem Management) without any explicit consideration of how management strategies identify and ensure delivery of ecosystem services. We assert that this approach does not follow MSC rules. As a consequence of the error, the team has ignored a growing body of scientific literature that highlights the value of ecosystem services provided by deep sea ecosystems despite our limited understanding of the subject area (Armstrong et al. 2012, Thurber et al. 2014). We believe that this scoring error materially affected the objectivity and fairness of scoring of PI 2.5.1 and 2.5.2, leading to unreasonably high scores being assigned to both PIs.

## References:

Armstrong, C. W., Foley, N. S., Tinch, R., and S. van den Hove (2012) Services from the deep: Steps towards valuation of deep sea goods and services. *Ecosystem Services* 2 (2012) 2–13.

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. *ICES Journal of Marine Science*, 73: i51–i69.

Thurber, A.R., Sweetman, A. K., Narayanaswamy B. E., Jones, D. O. B., Ingels, J., and R. L. Hansman (2014) Ecosystem function and services provided by the deep sea. *Biogeosciences*, 11: 3941–3963.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

## CRv1.3

CB3.17.2 The team should interpret serious or irreversible harm in relation to the capacity of the ecosystem to deliver ecosystem services.

## MSC Guidance to CRv1.3 says:

"For the Habitats and Ecosystem components, the concept of 'serious or irreversible harm' refers to change caused by the fishery that fundamentally alters the capacity of the component to maintain its function or to recover from the impact.

- This may also be interpreted as seriously reducing the ecosystem services provided by the component to the fishery, to other fisheries and human uses." (GCB3.2, page GC81 of GCRv1.3)

**Procedural Error #9 – Change to unit of certification****Affected PIs: all PIs under 2.3 and 2.4, but for only one UoC (ESCR)**

It appears that during the fishery assessment the CAB changed the unit of certification (UoC)\* boundary for ORH3B ESCR. On May 22nd 2014, DWG wrote a certificate sharing letter to MRAG Americas (published on the MSC website). It stated that “The New Zealand Orange Roughy Fisheries (ORH3B Northwest Chatham Rise, ORH3B East and South Chatham Rise & ORH7A) are undergoing assessment against the Marine Stewardship Council (MSC) Fisheries Standard.” The letter did not indicate that ESCR was to be divided in half.

In a stakeholder submission to MRAG dated 30 July 2014, WWF noted that the proposed UoCs in DWG’s certificate sharing letter were different from those evaluated during pre-assessment (p. 18 in FRvol2). WWF asked for clarification on UoC structure because of concerns of the potential for re-drawing boundaries to match expectations (i.e. ‘Gerrymandering’ - a colorful euphemism for the practice used in US electoral politics). The CB did not provide WWF with clarification on the UoCs.

After reviewing the PCDR, WWF commented that the area of one unit of certification (ORH3B ESCR, 179 degrees 30 minutes west) was substantially reduced in size from what was assumed to be the original UoC covering the entire ESCR (p.216, FRvol2). WWF suggested that in the interest of transparency the team should explicitly address how exclusion of the western half of ESCR affects the assessment of benthic habitat impacts. MRAG’s response to this question (FRvol.2, p. 216) was evasive, providing no insight into the rationale for dividing ORH3B ESCR in half.

Available evidence implies that the CAB changed the ESCR UoC during the assessment - an action which does not follow MSC rules (27.4.3). This procedural error may have materially affected the fairness of the assessment, although the extent of impact is difficult to discern without further information.

\* The MRAG Final Report makes erroneous reference to the “unit of assessment” or UoA - a term that was not introduced by MSC until release of FCR2.0 and is therefore not applicable to this assessment.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3

Unit of Certification

27.4.3 The CAB shall note that once defined, the unit of certification cannot be changed during the assessment unless:

27.4.3.1 The CAB submits a variation request to this requirement to MSC by following the procedure set out in Part A clause 4.12, and

27.4.3.2 The MSC accepts the variation request.

**Procedural Error #10 – Key information: Description of fishing gear and method**

**Affected PIs: ETP corals, Habitat**

The PCDR and Final Report do not give a description of the fishing gear and practice used by the fishing operation. MRAG says little more than the method of capture is ‘demersal trawl’ (p.6, FRvol1). Without more detail about the fishing method(s) currently in use (e.g. trawl design, trawl doors, towing configurations, ground gear, etc; see Ministry of Fisheries 2008), it is not possible for stakeholders to see how the CAB has reached a determination that the fishery meets the MSC Principles and Criteria for Sustainable Fishing, specifically B3: *“The fishing operations shall implement appropriate fishing methods designed to minimize adverse impacts on habitat.”* WWF believes that description of fishing gear and practice is key information which is necessary to include for stakeholders to properly review the logic used by the team in their conclusion about scores for fishery impacts on ETP corals and habitats. Consequently, we argue that omission of this key information may have made a material difference to the fairness of the assessment.

See also Procedural Error #3

References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. ICES Journal of Marine Science, 73: i51–i69.

Ministry of Fisheries (2008) Bottom Fishery Impact Assessment: Bottom Fishing Activities by New Zealand Vessels Fishing in the High Seas in the SPRFMO Area during 2008 and 2009. Draft 1.0, December 2008. 105 p.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

MSC Principles and Criteria for Sustainable Fishing, v1.1

B. Operational Criteria

Fishing operation shall:

13. implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;

CRv1.3

24.5 Access to information

24.5.1 The CAB shall ensure that un-published key information necessary to enable a stakeholder who is not party to this information to be able to properly review the logic used by the team in their conclusion about a particular PI score is made available electronically, in printed form or otherwise for viewing by stakeholders.

24.5.1.1 The CAB shall make un-published key information available before the posting of the Public Comment Draft Report, and shall ensure that the information is available throughout the subsequent stages of the assessment process until such time as a certification decision is made.

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**PART FIVE: OBJECTION PURSUANT TO PARAGRAPH ACD2.7.2.1**

5.1 Listing the conditions placed on the relevant performance indicator(s) and using the template below, please clearly:

- a) identify the reason(s) you or your organisation believe that the condition assigned to the performance indicator within the Final Report cannot be justified because it fundamentally cannot be fulfilled, and
- b) ensure you include rationale for why you believe the condition setting decision was arbitrary or unreasonable, as described in ACD2.7.2.1 of the Certification Requirements.

<i>Performance Indicator</i>	PI 2.3.1
<i>Condition</i>	Condition 2
<i>a) Reason</i>	See response on next page
<i>b) Rationale</i>	See response on next page

<i>Performance Indicator</i>	PI 2.3.3
<i>Condition</i>	Condition 3
<i>a) Reason</i>	See response on next page
<i>b) Rationale</i>	See response on next page

<i>Performance Indicator</i>	
<i>Condition</i>	
<i>a) Reason</i>	
<i>b) Rationale</i>	

Repeat table as needed for each performance indicator and condition to be included in objection.

## Section 5.1 – Condition Setting Errors

<b>Error of Condition Setting #1 – More coral data is not more coral protection</b>
<b>Condition 2</b>
<b>Relevant PIs: 2.3.1, NWCR and ESCR UoCs</b>
<p>Condition 2 does not specify milestones that set out measurable improvements in terms of a direct demonstration that the fishery implements requirements for the protection and rebuilding of ETP corals by reducing coral mortality.</p> <p>In our review of the PCDR, WWF commented that both the condition set by the CAB and the corresponding action plan specified by the client fishery are unreasonably vague and provide little certainty that the condition will result in measurable improvements that minimize the impact of the fishery on ETP corals as required by PI 2.3.1. Specifically, under the MSC certification requirements the CAB is required to draft conditions to specify milestones that spell out the measurable improvements and outcomes (using quantitative metrics) expected each year (27.11.1.4). The MSC requirements for setting conditions also require that "if a condition or milestone relates to reducing uncertainty or improving processes, the CAB shall include in its report narrative about the ultimate ecological or management outcome that the condition aims to achieve over the longer term" (27.11.7). We remain convinced that the milestones and client action plan for Condition 2 fail to meet MSC requirements.</p> <p>MRAG responded to our comments (FRvol2 p. 212) by citing CR v1.3 Section 27.11.1.2 which states that "The CAB should draft conditions to follow the narrative or metric form of the PISGs used in the final tree [...]," and that "In this particular case, reducing uncertainty is what is needed to achieve the 80 level, there is more than one way to reduce uncertainty, and reduction of uncertainty does not necessarily mean reducing impacts." However, by focusing solely on the need to reduce uncertainty (i.e. the 'likelihood' aspect of scoring issue b), the CAB did not adequately consider the actionable side of CB3.11.3.1 which requires a direct demonstration that requirements for protection and rebuilding are being achieved.</p> <p>After assessing the outcome status of ETP corals, MRAG clearly states in their scoring rationale that "National legislation does not set numerical limits on coral, but does require minimizing impacts." Thus, for scoring issue (b), the "unacceptable impact" preventing the fishery from attaining the SG80 level is its failure to minimize interactions with ETP corals - not the lack of certainty thereof. According to MSC rules, the CAB must formulate Condition 2 to specify "demonstration that requirements for protection and rebuilding are being achieved."</p> <p>In the opinion of WWF, by focusing only on the uncertainty aspect of the PISG narrative and structuring the condition accordingly, the CAB has ignored the actionable side of the MSC rule which would require the fishery to not create unacceptable impacts to ETP corals. As written, the client action plan does not describe how the client will address the actual extent of impact. For this reason, we conclude that the condition setting decision for Condition 3 was unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it (sensu ACD2.7.2.1).</p> <p>Also see Error of Condition Setting #2.</p>
<b>Relevant MSC Requirements or Guidance in force at the time of the assessment</b>

CRv1.3

PI 2.3.1b Direct effects

Direct effects are highly unlikely to create unacceptable impacts to ETP species.

CB3.11.3.1 The team shall interpret “unacceptable impacts” as:

At SG80, where it is highly likely that the fishery meets the requirements, there would be direct demonstration that requirements for protection and rebuilding are being achieved.

<b>Error of Condition Setting #2 – Threat to ETP species: sufficient information</b>
<b>Condition 3</b>
<b>Relevant PIs: 2.3.3, NWCR and ESCR UoCs</b>
<p>WWF believes that MRAG accepted a corrective action plan from DWG that falls substantially short of MSC requirements (27.11.2.4-5). Condition 3 specifies that “by the end of the certification period information must be sufficient to determine whether the fishery may be a threat to protection and recovery of ETP coral species.” However the client action plan says that in the first year, the client will “...Present a plan to reduce uncertainty regarding the threat of ORH fishing to the two UoAs on ETP coral groups.” The proposed plan does not address sufficiency of information, only improved certainty.</p> <p>We are further concerned that the formulation of the condition itself might imply that the fishery client will attain the SG80 level of performance if they complete the suggested analyses. In the rationale for Condition 3 (FRvol1, p.204-205), MRAG describes the current DWG information base as including “...a series of studies resulting in data that have yet to be fully analysed.” The CAB goes on to say that such raw data must be analyzed before it can be informative, and that... “Only after the analyses can the data inform the conclusion. While DWG supplied the best information available at the time of the assessment, it was insufficient to draw the conclusion on status to reach SG80.” Although not explicit, it is strongly implied in this description that MRAG has determined a priori that such an analysis of DWG’s existing raw data sets will be sufficient to determine whether or not the fishery is a threat to the protection and recovery of ETP corals. WWF asserts that any determination about sufficiency of information should be made only after an objective and independent appraisal of the facts.</p> <p>For this reason, we conclude that the condition setting decision for Condition 3 was unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it (sensu ACD2.7.2.1).</p> <p>Also see Error of Condition Setting#2.</p>
<b>Relevant MSC Requirements or Guidance in force at the time of the assessment</b>
<p>CRv1.3  27.11.2 The CAB shall require the client to prepare a “client action plan” that includes:  27.11.2.1 How the conditions and milestones will be addressed.  27.11.2.4 How the action(s) is expected to improve the performance of the fishery.  27.11.2.5 How the CAB will assess outcomes and milestones in each subsequent surveillance or assessment.</p> <p>PI 2.3.3, scoring issue b  SG80 Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species.</p>

## PART SIX: OBJECTION PURSUANT TO PARAGRAPH CD2.7.2.2

6.1 Listing the relevant performance indicator(s) and using the template below, please clearly identify the reason(s) you or your organisation believe that the score(s) presented within the Final Report cannot be justified, ensuring you link those reasons with the requirements of Paragraphs CD2.7.2.2 (a), CD2.7.2.2 (b) and/or CD2.7.2.2 (c) of the objections procedure. Please provide your rationale and/or evidence in support of a different conclusion, making particular reference to the specific scoring guideposts associated with the particular performance indicator(s) in question.

<i>Performance Indicator</i>	See responses below
<i>Reason</i>	
<i>Rationale</i>	

<i>Performance Indicator</i>	
<i>Reason</i>	
<i>Rationale</i>	

<i>Performance Indicator</i>	
<i>Reason</i>	
<i>Rationale</i>	

Our responses to section 6.1 begin on the next page.

6.2 For each issue identified in question 5.1 [6.1], please state why you or your organisation believes that the effect of the score in relation to one or more of the particular performance indicators in question was material to the outcome of the Determination such that the Determination should be altered?

We explain in section 6.1 why we believe the effect of each score in relation to specified performance indicators was material to the certification determination by the conformity assessment body. WWF believes that these scoring errors, considered collectively and in connection with the procedural errors we describe in section 4.1, have materially affected the fairness and objectivity of the way the fishery was assessed against MSC Principle 2. We argue that, had the assessment been done in conformity with MSC procedural requirements and had the fishery not been scored unreasonably, a large number of PIs under Principle 2 would be shown to not reach the SG80 scoring level, and consequently the fishery would not attain an overall score of 80 at the Principle level thereby leading to a fail of the fishery.

In addition, WWF identified scoring errors under MSC Principle 1 in relation to precautionary limits and depleted stock status which we believe were not scored reasonably and may have materially affected the outcome determination of MSC Principle 1.

Section 6.1 – Scoring Errors

**Scoring Error #1 – NWCR stock is depleted and must be scored under 1.1.3**

**Affected PIs: 1.1.1, 1.1.3**

Justification:

The NWCR stock has not yet rebuilt to a safe stock level and should have been scored below 80 under 1.1.1. A condition should be set to ensure that stock rebuilding will be successful and closely monitored. We base our justification on the latest MPI stock assessments report (2015) ([http://fs.fish.govt.nz/Doc/23850/47\\_ORH3B\\_2015\\_FINAL.pdf.ashx](http://fs.fish.govt.nz/Doc/23850/47_ORH3B_2015_FINAL.pdf.ashx)). Figure 1 is copied from the MPI 2015 report and displays the relevant management targets and probability levels.

Northwest Chatham Rise

Stock Status	
Year of Most Recent Assessment	2014
Assessment Runs Presented	Base model only
Reference Points	Management Target: Biomass range 30–40% $B_0$ Soft Limit: 20% $B_0$ Hard Limit: 10% $B_0$ Overfishing threshold: Fishing intensity range $U_{30\%B_0}$ – $U_{40\%B_0}$
Status in relation to Target	$B_{2014}$ was estimated at 37% $B_0$ . Likely (> 60%) to be at or above the lower end of the management target range
Status in relation to Limits	$B_{2014}$ is Very Unlikely (< 10%) to be below the Soft Limit $B_{2014}$ is Exceptionally Unlikely (< 1%) to be below the Hard Limit
Status in relation to Overfishing	Fishing intensity in 2014 was estimated at $U_{30\%B_0}$ Overfishing is Exceptionally Unlikely (< 1%) to be occurring

Fig. 1 MPI 2015

In the final report (PI 1.1.1), the CAB contends that there is a high degree of certainty that the stock is above the point where recruitment would be impaired, with the justification that for the "NWCR: < 1% probability of being below the limit reference point; Table 8 (achieves SG100)". See Fig. 2 and 3.

Limit reference point	20% $B_0$	NWCR	13.2	<1% likelihood below LRP
		ESCR	64.0	
		ORH7A	17.6	

Fig. 2 Final report p. 121

**Table 8 Summary of stock status of each UoA relative to the hard limit and the management target range (MPI, 2014b, c; Cordue, 2014d)**

	ORH3B NWCR	ORH3B ESCR	ORH7A
Below Hard Limit	Exceptionally unlikely	Very unlikely	Exceptionally unlikely
Below Soft Limit	Very unlikely	Unlikely	Very unlikely
At or above Management Target	Likely above lower limit	As likely as not above lower limit	Considered fully rebuilt
Overfishing	Exceptionally unlikely	Very unlikely	Very unlikely
$P(B_{2014} < 0.2B_0)$	< 0.01	< 0.01	< 0.01
$P(B_{2014} < 0.3B_0)$	0.04	0.57	< 0.01

Exceptionally unlikely (<1%); Very unlikely (< 10%); Unlikely (<40%), As Likely as Not (40-60%), Very Likely (> 90%)

Fig 3. Final report, Table 8

However, based on the 2015 assessment report and Table 8 in the MSC final report, the probability is one order of magnitude higher (<10%) that the stock status is below the limit reference point.

According to the CAB the stock is at or fluctuating around its target reference point. "NWCR: < 5% probability of being below the lower limit of the target range; Table 7 and Table 8 (achieves SG 80)". In contrast, the 2015 assessment report states that it is only likely (>60% probability) that the stock is at or above the lower end of the target range (management target range (30-50% of  $B_0$ , see P.1.1.2). Additionally, a target reference point is not the same as the lower end of a target range. The lower and higher limits of the target range were extracted from two different models and the mid-point of this range balances the low estimate of BMSY from the Beverton-Holt stock-recruitment relationship with the higher estimate based on the Ricker stock-recruitment relationship. The midpoint would therefore be an appropriate target reference point (40%  $B_0$ ). The actual stock biomass is below that value (37%  $B_0$ ).

Taking into account that the stock was severely reduced and overfished, that monitoring of the stock biomass is difficult to achieve and that orange roughy have a very slow growth/low mortality life strategy, it becomes evident that a more precautionary approach must be taken. This is especially evident when considering that the applied stock model utilizes a spawner-recruit relationship that uses the less precautionary average of the BMSY and that the baseline data includes large uncertainties due to limited data input from time series of abundance indices and due to the uncertainties of extrapolating abundances from the acoustic surveys.

Table 8 in the final report (Fig.3) states that overfishing is exceptionally unlikely (<1%). According to the MPI 2015 assessment report, the risk is higher: "at current catch limit (750 t) <10%".

We also note that the sub-area catch limit was increased to 1,250 t for the 2014-15 fishing year.

Projections and Prognosis	
Stock Projections or Prognosis	Biomass is expected to increase or stay steady over the next 5 years at annual catches of up to 1400 t.
Probability of Current Catch or TACC causing Biomass to remain below or to decline below Limits	At both current catch (110 t) or current catch limit (750 t): Soft Limit: Very Unlikely (< 10%) Hard Limit: Exceptionally Unlikely (< 1%)
Probability of Current Catch or TACC causing Overfishing to continue or to commence	At current catch: Exceptionally Unlikely (< 1%) At current catch limit: Very Unlikely (< 10%)

Fig. 4 MPI 2015

WWF is also concerned that such high fishing mortalities might hinder the ability of the stock to rebuild within the timeframe specified for the stock under PI 1.1.3b. The precautionary stock model predicts a rebuilding stop when fishing pressure increases (see Fig.5).

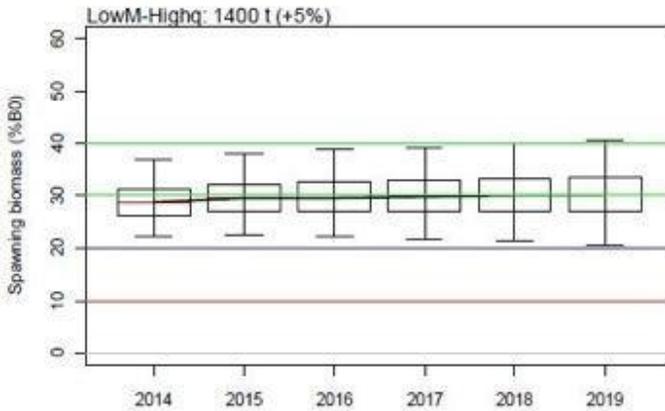


Fig. 5 MPI 2015.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

PI 1.1.1 The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing (scoring issue a und b)

CB2.2.1 The team shall note that in P1 the terms “likely”, “highly likely” and “high degree of certainty” are used to allow for qualitative and quantitative evaluation. In a probabilistic context:

CB2.2.1.1 Likely means greater than or equal to the 70th percentile of a distribution (i.e. there shall be at least a 70% probability that the true status of the stock is higher than the point at which there is an appreciable risk of recruitment being impaired).

CB2.2.1.2 Highly likely means greater than or equal to the 80th percentile.

CB2.2.1.3 High degree of certainty means greater than or equal to the 95th percentile.

CB2.2.2 The team shall consider the biology of the species and the scale and intensity of both the fishery and management system and other relevant issues in determining relevant time periods over which to judge fluctuations.

CB2.2.2.1 At SG80, there shall be evidence that the stock is at the target reference point now or has fluctuated around the target reference point for the past few years.

PI 1.1.3 Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe (scoring issue a, b. c)

**Scoring Error #2 – LRP and TRP are not sufficiently precautionary**

**Affected PIs: 1.1.2a**

The score given to PI 1.1.2a cannot be justified because the scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it. Specifically, WWF asserts that limit and target reference points have not been shown to be appropriate for the stock and therefore do not meet the SG80 scoring level. We argue that reference points should be more precautionary for a long-lived species like orange roughy (FRvol2, p. 15-30). Current TRP and LRP for orange roughy do not follow best practice and the selection of RPs cannot be rationalized by directly comparing to the limits used to manage other similarly long-lived stocks (see WWF stakeholder submission, FRvol2, p. 15-30).

In our comments on the PCDR, we expressed our skepticism about whether the limits are shown to be appropriate over the long term. The assessment team explained that MSE considered a very long time period (16,000 yrs), and that the harvest rate is variable under the HCR. Despite simulation testing, however, there is little empirical evidence to demonstrate that these limits are appropriate over the long term. We believe the limit and target reference points do not adequately address risks associated with orange roughy life history and other as yet unquantified uncertainties.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

PI 1.1.2, Limit and target reference points are appropriate for the stock

Scoring issue a

SG60 Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.

SG80 Reference points are appropriate for the stock and can be estimated.

### Scoring Error #3 – Is hoping the fishery footprint won't expand a strategy?

Affected PIs: 2.3.2, 2.4.2

The SG80 scoring guidepost for PI 2.3.2a requires “that there is a strategy for managing the fishery’s impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.” The NZ Fisheries Act of 1996 requires that the fishery minimize impacts on protected and endangered species, including ETP corals. Similarly, PI 2.4.2a at SG80 requires a “partial strategy” that is expected to achieve at least the SG80 Habitat Outcome level or above (i.e. highly unlikely to cause serious or irreversible harm).

The CAB's scoring of PIs 2.3.2 and 2.4.2 is based on the contention that the system of closures and MPAs in combination with monitoring vessel positions serves as a partial strategy to protect ETP corals and critical benthic habitats and are designed to meet the SG80 requirements for the outcome PIs. Logically, the effectiveness of this strategy is dependent on the implementation of these spatial protection measures in areas that protect ETP corals and sensitive coral habitats and the exclusion of fishing from these areas. Penney and Guinotte (2013) state that the approach of restricting bottom fishing to areas that have already been fished and focusing spatial protection measures on high diversity areas that have not been impacted by fishing (i.e. 'freezing the footprint') underpins the current system of spatial closures in the New Zealand SPRFMO Area footprint. The additional information added to the final report by the CAB clearly documents that the Conservation and Management Measure for the Management of Bottom Fishing in the SPRFMO Convention Area (CMM2.03) includes strict provisions to limit fishing by Members or Cooperating Non-Contracting Parties (CNCPS) to the historical footprint of the fishery. The 'bottom fishing footprint' is defined as a map of the extent and distribution of historical bottom fishing in the Convention Area of all vessels flagged to a particular Member or CNCP over a particular time period. The CMM provides a provision for a Member or CNCP to apply for permission to fish outside the historical footprint subject to consideration by the Scientific Committee and taking into account the results of public consultation.

WWF contends that the SPRFMO CMM provides a clear example of a strategy to manage impacts on ETP corals and benthic habitats. New Zealand's membership in the SPRFMO and the CAB's addition of the CMM management measures in the Habitats section of the final report (p. 82-83) show its relevance here. However as WWF and other stakeholders have repeatedly noted throughout the assessment process, the current management system for the OR fishery contains no provisions for limiting the impact of the fishery to the historical footprint. The CAB continues to portray the tendency of vessels to fish in previous trawl paths and a perceived low likelihood that the footprint will expand as a ‘measure’ that comprises a part of a partial strategy for managing habitat impacts and risk to ETP corals. This is based only on consideration of recent (2008/09-2012/13) trends in the trawl footprint and does not take into account the full data set (1989/90-2012/13) analyzed for comparison by NIWA (2015). Truncating the trawl dataset also tends to exaggerate the effects of a recent decrease in fishing effort that was itself driven by reductions in TAC - not a measure to reduce impacts on ETP corals or habitats. As a part of this approach, the CAB is relying on the ability of the assessment team to detect any expansion of the fishery footprint during surveillance audits (i.e. after they occur).

The bottom line is that the CAB bases scoring on an unenforced “practice of using the same tow paths” to minimize the damage from bottom trawling on ETP corals and the habitats of which they form an integral part (i.e. to effectively freeze the trawl footprint). This is in clear contrast to the SPRFMO

regulations that *actually* freeze the trawl footprint within the convention area subject to management approval of any expansion in the trawled area.

WWF contends that the example of the SPRFMO CMM cited by the CAB in the final report clearly illustrates that, lacking clear provisions to limit the trawl footprint to the historical extent unless there is scientific evaluation and stakeholder consultation in advance of any approved expansion of the trawl footprint, an effective management strategy is not in place.

WWF contends that a strategy that relies in large part on unenforced or unlegislated behavior by the fishery does not meet this requirement (see Procedural Error 1 above). We believe that this error has therefore made a material difference in the fairness of the scoring of the ORH fishery for ETP corals and habitat PIs.

References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. *ICES Journal of Marine Science*, 73: i51–i69.

Penney, A. J., and Guinotte, J. M. (2013) Evaluation of New Zealand’s high-seas bottom trawl closures using predictive habitat models and quantitative risk assessment. *PLoS ONE*, 8: 1–18.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3

PI 2.3.2a

SG60 There are measures in place that minimise mortality of ETP species, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.

SG80 There is a strategy in place for managing the fishery’s impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.

PI2.4.2a

SG60 There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.

SG80 There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.

**Scoring Error #4 – Indirect effects: sediment plumes and ETP corals**

**Affected PIs: 2.3.1c, all UoCs, scoring element: ETP corals**

The score given to PI 2.3.1c cannot be justified because the scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.

Specifically, we assert that the fishery has not been shown to meet the SG80 level of scoring issue c which requires that “indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.” The CAB gave inadequate consideration to the potential for sediment plumes generated by benthic trawling to negatively impact ETP corals. At present, little quantitative information exists to assess the risk (“there are no known studies specifically examining sediment mobilization by fishing gear in deep-sea fisheries and its effects...” FRvol1, p.158). The assessment team’s rationale relied on anecdotal or confidential evidence (i.e. fishery following established tow lines; see Procedural Error 3), which does not provide evidence for the fishery meeting SG80. Similar to our concerns noted under Procedural Error #4, it appears that the team may have again given greater weight to their own opinion than to the views of the some of the world’s leading experts on the subject matter without justification ((e.g. Clark et al. 2015, Puig et al. 2013). We believe that the CAB’s inadequate consideration of indirect effects on ETP corals made a material difference in the fairness of scoring ETP corals for PI 2.3.1.

Also see Procedural Error #3 and #4.

Also see Scoring Error #5.

References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. ICES Journal of Marine Science, 73: i51–i69.

Puig, et al. (2012). Ploughing the deep sea floor. Nature 489: 286-289.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3

PI 2.3.1, scoring issue c

SG80 Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.

**Scoring Error #5 – Indirect effects: sediment plumes and habitats**

**Affected PIs: 2.4.1, all UoCs, scoring elements: UTF habitat and slope habitat**

The score given to PI 2.4.1 cannot be justified because the scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.

MRAG made an error in scoring habitat impacts (PI 2.4.1) because they failed to adequately consider the indirect effects of trawling on habitats. In the scoring rationale, they say “Damage [from trawling] will, however, be restricted to areas trawled so that, the extent of any damage will be proportional to the footprint of the fishery.” The areal extent of the fishery footprint is an important part of the logic used by MRAG to assign a score to the probability of habitat impact (they assigned a score of 90 to both UTF habitat and slope habitat for this PI). Their approach fails to consider that indirect impacts may extend beyond the boundary of the trawl footprint. Sediment plumes generated by trawling may impact upon corals as well as other suspension feeding organisms within the deep sea benthic community (Clark et al. 2015, Puig et al. 2013). Consequently, the team has used a minimum estimate of the magnitude of habitat impact.

WWF argues that for this reason the fishery has not been shown to attain the SG80 level (no more than 30% probability of reducing habitat structure and function to the point where there would be serious or irreversible harm). Doing so made a material difference to the fairness and objectivity of the scoring of PI 2.4.1.

Also see Procedural Error #4.

Also see Scoring Error #4.

References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. ICES Journal of Marine Science, 73: i51–i69.

Puig, et al. (2012). Ploughing the deep sea floor. Nature 489: 286-289.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

PI 2.4.1

Outcome status:

Scoring issue a: Habitat status

The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function.

SG60 The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm. [< 40% probability of SoIH]

SG80 The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm. [< 30% probability of SoIH]

SG100 There is evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.  
[< 20% probability of SoIH]

**Scoring Error #6 – Measures to protect ETP corals**

**Affected PIs: 2.3.2**

The score given to PI 2.3.2 cannot be justified because the scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.

MRAG argues that the fishery has in place a precautionary management strategy to protect ETP corals. They score the fishery as meeting the SG80 level of scoring issue because the strategy includes “measures to minimise mortality.” With respect to ETP corals, we first contend that there is really only one “measure” in place: area closures or Benthic Protected Areas (BPAs). WWF recognizes that area closures are an essential tool for protecting corals when they are sited appropriately (see discussion in Penney and Guinotte 2013 and Rieser et al. 2013) and our organization is a strong supporter of MPAs. But the issue here is not whether BPAs are effective in New Zealand waters. We accept that the current strategy of area closures may justify a score of SG60. However, we disagree with the CAB that the measures currently in place constitute a strategy designed to “minimize mortality of ETP corals” as required by New Zealand law and that is sufficiently precautionary to justify awarding the SG80 scoring level.

MRAG does not identify in their scoring rationale the numerous other types of measures that may be enacted to reduce the mortality of benthic fauna in deep water trawl fisheries. Such measures include modifications to gears or fishing methods, establishing seasonal or annual ‘take’ limits, formulating move-on rules, and freezing the trawl footprint. MRAG’s omission is unusual because they also recognize that the SPRFMO has, in addition to establishing BPAs, enacted measures to protect VMEs and deep sea habitats by restricting bottom fishing to the bottom fishing footprint of that SPRFMO member (p.81-83, FRvol1; also see Scoring Error #3). However these measures are not implemented in the New Zealand EEZ.

WWF contends that existing measures to minimize mortality of ETP corals are not sufficiently precautionary and therefore the score assigned by the CAB to PI 2.3.2 is not justified.

References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. *ICES Journal of Marine Science*, 73: i51–i69.

Penney, A. J., and Guinotte, J. M. (2013) Evaluation of New Zealand’s high-seas bottom trawl closures using predictive habitat models and quantitative risk assessment. *PLoS ONE*, 8: 1–18.

Rieser, A., Watling, L., and Guinotte, J. (2013) Trawl fisheries, catch shares and the protection of benthic marine ecosystems: Has ownership generated incentives for seafloor stewardship? *Marine Policy* 40(2013): 75-83.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

PI 2.3.2

SG60 There are measures in place that minimise mortality of ETP species, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.

SG80 There is a strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.

## Scoring Error #7 – An inadequate habitat classification system

**Affected PIs: 2.4.1, 2.4.2, 2.4.3**

In scoring PI 2.4.1, MRAG did not adequately consider the system of habitat classification in order to predict impacts. Only two large-scale bathymetric features (UTFs and slope areas) were scored as habitats while small-scale diagnostic habitat features like different substrates or biota (GCB3.14) were not used for habitat classification. Various studies (e.g. Howell et al., 2010; Lundsten et al., 2009; O'Hara, 2007; Bowden et al., 2016) concluded that simple categorisation of benthic communities on the basis of topographically defined habitat types is unlikely to be sufficient in itself for addressing the needs of management in the deep sea. A more detailed habitat and fishing overlap analysis is prerequisite to justify that habitat components are not within the range where there is risk of serious or irreversible harm. Assessed habitat components should include vulnerable structured habitats like coral reefs, coral gardens, sponge grounds.

We wish to point out that the element approach to scoring habitat PIs was correctly applied in other MSC assessments of demersal trawlers that included different scores for different VME habitat types (e.g. Norway North East Arctic cod and haddock 2016, Greenland cod, haddock and saithe trawl fishery in the Barents Sea 2015, Euronor and Compagnie des Pêches 2012).

### References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. *ICES Journal of Marine Science*, 73: i51–i69.

Bowden, David A., et al. "Deep-sea seabed habitats: Do they support distinct mega-epifaunal communities that have different vulnerabilities to anthropogenic disturbance?." *Deep Sea Research Part I: Oceanographic Research Papers* 107 (2016): 31-47.

Lundsten, L., Barry, J.P., Cailliet, G.M., Clague, D.A., DeVogelaere, A.P., Geller, J.B., 2009. Benthic invertebrate communities on three seamounts off southern and central California. *Mar. Ecol. Prog. Ser.* 374, 23–32.

Howell, K.L., Mowles, S.L., Foggo, A., 2010. Mounting evidence: near-slope seamounts are faunally indistinct from adjacent bank. *Mar. Ecol.* 31, 52–62.

O'Hara, T.D., 2007. Seamounts: centres of endemism or species richness for Ophiuroids? *Glob. Ecol. Biogeogr.* 16(6), 720–732.

## Relevant MSC Requirements or Guidance in force at the time of the assessment

CB3.14 Habitats Outcome PI (PI 2.4.1)

CB3.14.1 The team shall assess the habitats component in relation to the effects of the fishery on the structure and role function<sup>169</sup> of the habitats impacted by the fishery

GCB3.14 Habitats Outcome PI: If benthic habitat is being assessed, the team may consider the following points:

Substratum—sediment type (e.g. hard substrate)

Geomorphology—seafloor topography (e.g. flat rocky terrace)  
Biota—dominant floral and/or faunal group(s) (e.g. kelp forest and mixed epifauna, respectively)

**Scoring Error #8 – Status of benthic ecosystem was not assessed**

**Affected PIs: 2.5.1, 2.5.3**

In scoring PI 2.5.1, MRAG did not assess the outcome status of the deep sea benthic ecosystem, and the scoring rationale for PI 2.5.3 overstates our knowledge of the main impacts of trawling the deep sea benthos. As with the habitat component, the CAB found it reasonable to consider the orange roughy ecosystem as the area over which orange roughy is distributed within the Kermadec bioregion. Based on arguments similar to the ones that the CAB used for scoring habitat outcome status (see Procedural Error #1), MRAG concluded that the fishery meets the SG100 level because: 1) there are BPAs in place, and 2) the footprint of the orange roughy fishery in the three UoCs is small relative to the orange roughy distribution area within the bioregion, with “benthic impact that may damage ecosystem structure and function ...restricted to < 20% of the fishery management areas.”

We assert that the benthic ecosystem represents a ‘key’ ecosystem element (CB3.17.3) and must be considered as such. MRAG did not assess the ‘true status’ of the benthic ecosystem in a way that would justify their conclusion about the likelihood of not approaching a point of serious or irreversible harm. Their argument is constructed almost exclusively around the notion that a severe but small impact is rapidly diluted in a large ocean (see Procedural Error #1). Although the CAB cites the review by Dunn (2013), they seem to ignore his warning that “Benthic biodiversity surveys have shown that trawls remove exposed fauna such as corals and sponges. The implications of this, however, remain poorly known.” WWF believes it is important to recognize and address these unknowns as they arise in the assessment. Furthermore, under PI 2.5.3b at SG100, the CAB argues that the main impacts of the fishery on the ecosystem can be inferred from “specific research related to trawl impacts on habitat structure and function.” However in the scoring rationale for PI 2.4.2 the CAB states that “According to Black et al. (2013), there have been no studies investigating whether current trawling frequencies have had adverse effects on the structure and function of benthic communities, or on the productivity of the associated fisheries.” These statements by the CAB are difficult to reconcile.

The CAB’s approach postulates that any portion(s) of the benthic ecosystem which is not directly impacted by the fishery under assessment is intact and functioning properly (i.e. unimpacted). This assumption does not account for either the previous damage from the early Orange Roughy fishery or the activities of other fisheries. Nor does it consider possible impacts of non-fishery related drivers such as global warming, ocean acidification and pollution - any of which may contribute to declines or shifts in deep sea community structure (e.g. Ramirez-Llodra et al. 2011). The scores that MRAG assigned to PI 2.5.1 and 2.5.3 imply we have a very good understanding of the outcome status of the benthic ecosystem across the Kermadec bioregion when in reality the opposite seems to be true. Therefore we feel the score assigned by the CAB to PI 2.5.1 and PI 2.5.3 is not justified.

References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. ICES Journal of Marine Science, 73: i51–i69.

Dunn, M. (2013) Ecosystem Impacts of Orange Roughy Fisheries. School of Biological Sciences Victoria, University of Wellington, New Zealand. 17 p.

Ramirez-Llodra E, Tyler PA, Baker MC, Bergstad OA, Clark MR, et al. (2011) Man and the Last Great Wilderness: Human Impact on the Deep Sea. PLoS ONE 6(7): e22588.  
doi:10.1371/journal.pone.0022588

### **Relevant MSC Requirements or Guidance in force at the time of the assessment**

#### CRv1.3

CB3.17.3 The team should note that “key” ecosystem elements are the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics, and are considered relative to the scale and intensity of the fishery. They are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity.

#### PI 2.5.1

The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function

##### a. Ecosystem status

SG60 The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.

[no more than a 40% probability that the true status of the component is within the range where there is risk of serious or irreversible harm]

SG80 The fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.

[no more than a 30% probability that the true status of the component is within the range where there is risk of serious or irreversible harm]

SG100 There is evidence that the fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.

[no more than a 20% probability that the true status of the component is within the range where there is risk of serious or irreversible harm]

#### PI 2.5.3

There is adequate knowledge of the impacts of the fishery on the ecosystem.

##### b. Investigation of fishery impacts

SG100 Main interactions between the fishery and these ecosystem elements can be inferred from existing information, and have been investigated in detail.

## PART SEVEN: OBJECTION PURSUANT TO PARAGRAPH CD2.7.2.3

- 7.1 Using the template below, please list all additional information not forming part of the record<sup>2</sup> that is relevant to the circumstances at the date of the Determination has not been considered, as per Paragraph CD2.7.2.3 of the objections procedure. Ensure that reasons are provided as to why you or your organisation believes that the particular information in question:
- was known or should reasonably have been known to any party to the assessment process, and
  - should reasonably have been made available to the conformity assessment body during the assessment process, and
  - if considered, could have made a material difference to the outcome of the assessment;

<i>Information</i>	n/a
<i>Reason why information should reasonably have been known</i>	n/a
<i>Reason why information should reasonably have been made available</i>	n/a
<i>Reason why information could have made a material difference to the outcome of the assessment</i>	n/a

<sup>2</sup> As defined in Paragraph CD2.6.5.1 (a) of the objections procedure.

**Notice of objection from Deep Sea Conservation Coalition**



3 June 2016

Ms Amanda Stern-Pirlot,  
MRAG Americas, Inc.  
10051 5th St N., Suite 105  
St. Petersburg FL 33702

Email: [certification@mragamericas.com](mailto:certification@mragamericas.com)

Copy to MSC Executive ([objections@msc.org](mailto:objections@msc.org))

Dear Ms Stern-Pirlot

Please find attached a statement of objection to the Final Report and Determination for the New Zealand Orange Roughy fishery.

This objection is being filed on behalf of Greenpeace New Zealand, Inc, the Deep Sea Conservation Coalition, Inc., Bloom Association Sand Environment and Conservation Organisations of New Zealand, Inc.

Correspondence can be sent to [duncanc@globelaw.com](mailto:duncanc@globelaw.com).

Yours sincerely

Duncan Currie

Attachment

# MSC Notice of Objection Form

This form should be completed in accordance with the MSC Objections Procedure. More information on the procedures can be found at <http://www.msc.org/get-certified/fisheries/assessment/objections>

This form may be completed and emailed to the MSC at [objections@msc.org](mailto:objections@msc.org), where it will be forwarded to the Independent Adjudicator.

Objectors should note the following excerpt from the MSC Certification Requirements in relation to how the Independent Adjudicator will assess the admissibility of an objection:

CD2.3.4 The notice of objection must set out clearly and precisely the basis upon which CD2.7.2 is said to apply. It must:

CD2.3.4.1 Identify the alleged errors in the final report and determination;

CD2.3.4.2 Explain in sufficient detail why it is claimed that the alleged errors made a material difference to the outcome of the determination or the fairness of the assessment.

Objectors should further note that an objection will be dismissed if it is not judged to have a reasonable prospect of success:

CD2.4.2 For purposes of this Section, an objection has a “reasonable prospect of success” if, in the view of the Independent Adjudicator:

CD2.4.2.1 It is not spurious or vexatious;

CD2.4.2.2 Some evidence is presented on the basis of which the Independent Adjudicator could reasonably expect to determine that one or more of the conditions set forth in CD2.7.2 are satisfied.

## PART ONE: IDENTIFICATION DETAILS

Fishery assessment to which this objection applies	<b>New Zealand Orange Roughy</b>
Name of conformity assessment body	<b>MRAG Americas, Inc.</b>
<b>Contact details for objecting party</b>	
Organisation(s)	Deep Sea Conservation Coalition, Inc., (DSCC) Greenpeace New Zealand, Inc., (Greenpeace), Environment and Conservation Organisations of New Zealand, Inc. (ECO) and BLOOM Foundation (BLOOM)



## PART TWO: OBJECTING PARTY'S CREDENTIALS

<p>Please outline your prior involvement with this assessment</p>	<p>Subject fishery - CD2.3.1.1 <input type="checkbox"/></p> <p>Written submissions - CD2.3.1.2 x<input checked="" type="checkbox"/></p> <p>Meetings attended - CD2.3.1.2 x<input checked="" type="checkbox"/></p> <p>Participation prevented/impaired - CD2.3.1.3 <input type="checkbox"/></p> <p><b>Greenpeace and DSCC were represented at a number of meetings by Barry Weeber of Environment and Conservation Organisations of New Zealand, Inc. (ECO New Zealand), and all parties made a submission on the Draft Report on or about February 29 2016.</b></p>
<p>If you are objecting on the basis that you were a party to the assessment process that made written submissions to the conformity assessment body during the fishery assessment process or attended stakeholder meetings (as per Paragraph CD2.3.1.2 of the objections procedure) or that the failure of the conformity assessment body to follow procedures prevented or substantially impaired your participation in the fishery assessment process (as per Paragraph CD2.3.1.3 of the objections procedure), then please provide evidence and/or outline details to support this classification.</p>	<p>We were party to the assessment process, were represented in meetings and made written submissions to the conformity assessment body during the fishery assessment process.</p> <p>Our <b>submission</b> is attached.</p>
<p>Please state your interest in the fishery and its certification</p>	<p>The Deep Sea Conservation Coalition (DSCC) is specifically concerned with the issue of bottom trawling on the high seas. DSCC works with scientists, NGOs, intergovernmental organizations and numerous governments, to</p>

	<p>substantially reduce the greatest threats to life in the deep seas, and to safeguard the long-term health, integrity, and resilience of deep-sea ecosystems. Our objective is to protect vulnerable deep-sea ecosystems and conserve deep-sea species, recognizing important set for wider ocean conservation. Today more than 70 organizations worldwide are working together under the umbrella of the DSCC to protect cold-water corals and vulnerable deep-sea ecosystems. The DSCC and its representatives attend meetings of RFMOs including NAFO, NEAFC, CCAMLR, SPRFMO and SIOFA to work with States and RFMOs to protect deep-sea species and ecosystems on the high seas from the harmful impacts of fishing. DSCC regularly provides information drawn from expertise on stock behaviour drawn from scientists and on conservation measures in other regional fishing organizations and arrangements, which we believe that States parties have found useful and constructive at past meetings.</p> <p>Greenpeace is the national office of Greenpeace International (Stichting Greenpeace Council). Greenpeace is well known for campaigning on marine issues, including sustainable fisheries and bottom trawling, over many decades. ECO is a national alliance of New Zealand groups with a concern for the environment. BLOOM is a French NGO with a focus on addressing the negative impacts of bottom trawling in the deep sea. All three organizations are members of the DSCC.</p> <p>The objectors strongly submit that the proposed certification application should be denied, on the basis that it is inconsistent with Principle 1, Sustainable Target Fish Stocks, Principle 2, Environmental Impact of Fishing, and Principle 3, Effective Management, and the assessed scores are incorrect. In fact the application is so flawed, that if it was certified, it would cast a major shadow over the entire MSC scheme and bring it into disrepute, under all three principles: sustainability of orange roughy stocks, environmental impacts of bottom trawling and New Zealand and international management of orange roughy.</p>
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### PART THREE: CATEGORISATION OF OBJECTIONS

You must complete one or more of Parts Three to Five in accordance with your answers to the following questions.

<p>Are you objecting on the basis that there was a serious procedural or other irregularity in the fishery assessment process that made a material difference to the fairness of the assessment, as per Paragraph CD2.7.2.1 of the objections procedure?</p>	<p>Yes <input checked="" type="checkbox"/>x          No <input type="checkbox"/>          If YES, complete Part 4</p>
<p>Are you objecting on the basis that the setting of conditions by the CAB in relation to one or more performance indicators cannot be justified because the conditions fundamentally cannot be fulfilled, and the condition setting decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it, as per Paragraph ACD2.7.2.1 of the objections procedure?</p>	<p>Yes <input checked="" type="checkbox"/>x          No <input type="checkbox"/>          If YES, complete Part 5</p>
<p>Are you objecting on the basis that the score given by the conformity assessment body in relation to one or more performance indicators cannot be justified, and the effect of the score in relation to one or more of the particular performance indicators in question was material to the outcome of the Determination, as per Paragraph CD2.7.2.2 of the objections procedure?</p>	<p>Yes <input checked="" type="checkbox"/>x          No <input type="checkbox"/>          If YES, complete Part 6</p>
<p>Are you objecting on the basis that additional information not forming part of the record<sup>1</sup> that is relevant to the circumstances at the date of the Determination has not been considered, as per Paragraph CD2.7.2.3 of the objections procedure?</p>	<p>Yes x<input type="checkbox"/>          No <input type="checkbox"/>          If YES, complete Part 7</p>



## PART FOUR: OBJECTION PURSUANT TO PARAGRAPH CD2.7.2.1

4.1 Please identify:

- a) the procedure(s) that you or your organisation believe were omitted or incorrectly followed by the conformity assessment body in the conduct of this assessment and the relationship of these matters to the MSC's procedural rules, as set out in the MSC Scheme Requirements that were in force at the time of the assessment; and/or
- b) any other irregularity in the fishery assessment process that you or your organisation believe made a material difference to the fairness of the assessment.
  
- c) the procedure(s) that you or your organisation believe were omitted or incorrectly followed by the conformity assessment body in the conduct of this assessment and the relationship of these matters to the MSC's procedural rules, as set out in the MSC Scheme Requirements that were in force at the time of the assessment; and/or

## PART FIVE: OBJECTION PURSUANT TO PARAGRAPH ACD2.7.2.1

5.1 Listing the conditions placed on the relevant performance indicator(s) and using the template below, please clearly:

- a) identify the reason(s) you or your organisation believe that the condition assigned to the performance indicator within the Final Report cannot be justified because it fundamentally cannot be fulfilled, and
- b) ensure you include rationale for why you believe the condition setting decision was arbitrary or unreasonable, as described in ACD2.7.2.1 of the Certification Requirements.

<i>Performance Indicator</i>	1.1.1b
<i>Condition</i>	By the end of the certification period, provide evidence that the ESCR stock is at or fluctuating around its target reference point.
<i>a) Reason</i>	The East and South Chatham Rise (ESCR) stock is estimated to be below the lower bound of the target management range in 2014. This condition means that a fishery which has been depleted by fishing would be certified as sustainable. It is entirely unreasonable. Fishing should stop until sound stock assessments show the fishery is shown to be above scientifically derived target reference points.
<i>b) Rationale</i>	Such a condition means that a clearly overfished fishery below what are already unsound reference points would be certified. This would be unreasonable and bring MSC into disrepute.

<i>Performance Indicator</i>	2.3.1 SI b
<i>Condition</i>	By the end of the certification period, the direct effects of ORH fishing must be highly unlikely to create unacceptable impacts to ETP coral species.
<i>a) Reason</i>	This condition will allow damage to coral species to continue until the end of the certification period.
<i>b) Rationale</i>	The condition decision is unreasonable as it will allow damage to continue. As is recognised in the assessment, bottom trawling damages coral. There is ample scientific evidence, shown in this objection and elsewhere, that the damage is serious and in many cases may be irreversible.  It fundamentally cannot be fulfilled without stopping bottom trawling which impacts the coral.

<i>Performance Indicator</i>	2.3.3 SI b
<i>Condition</i>	By the end of the certification period, information must be sufficient to determine whether the fishery may be a threat to protection and recovery of ETP coral species.
<i>a) Reason</i>	This condition would allow fisheries causing damage to the environment – including damage to coral species – to continue until information is deemed sufficient to determine whether the fishery may be a threat to the protection (and recovery, if that ever occurred) of ETP coral species. It is contrary to the precautionary approach.
<i>b) Rationale</i>	The condition is unreasonable, contrary to the precautionary approach and would allow environmental damage to continue.

Repeat table as needed for each performance indicator and condition to be included in objection.

<i>Performance Indicator</i>	3.2.5b
<i>Condition</i>	By the third annual surveillance the fishery specific [sic] management system must undergo occasional external review.
<i>a) Reason</i>	This condition will allow fishing to continue without any external review for 3 years. Worse, it does not require independent external review.

<i>b) Rationale</i>	The condition is unreasonable, as it will allow fishing to continue for 3 years without any external review, and does not require independent external review.
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- a) identify the reason(s) you or your organisation believe that the condition assigned to the performance indicator within the Final Report cannot be justified because it fundamentally cannot be fulfilled, and
  - b) ensure you include rationale for why you believe the condition setting decision was arbitrary or unreasonable, as described in ACD2.7.2.1 of the Certification Requirements.

## PART SIX: OBJECTION PURSUANT TO PARAGRAPH CD2.7.2.2

6.1 *Listing the relevant performance indicator(s) and using the template below, please clearly identify the reason(s) you or your organisation believe that the score(s) presented within the Final Report cannot be justified, ensuring you link those reasons with the requirements of Paragraphs CD2.7.2.2 (a), CD2.7.2.2 (b) and/or CD2.7.2.2 (c) of the objections procedure. Please provide your rationale and/or evidence in support of a different conclusion, making particular reference to the specific scoring guideposts associated with the particular performance indicator(s) in question.*

6.2 *For each issue identified in question 5.1, please state why you or your organisation believes that the effect of the score in relation to one or more of the particular performance indicators in question was material to the outcome of the Determination such that the Determination should be altered?*

### Principle 1 Sustainable target fish stocks

*A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.*

<i>Performance Indicator</i>	<p><b>P1 1.1.1 The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing</b></p> <p><b>ORH3B Northwest Chatham Rise (NWCR): 90</b> Should be: below 60</p> <p><b>ORH3B East and South Chatham Rise (ESCR): 70</b> Should be: below 60</p> <p><b>Challenger Plateau ORH7A: 90</b> Should be: below 60</p>
<i>Reason</i>	<p><b>ORH3B NWCR</b></p> <p>PI 1.1.1 Outcome requires for a score of SG80 that <i>“the stock is at or fluctuating around its target reference point.”</i></p> <p><i>“CB2.2.2.1 At SG80, there shall be evidence that the stock is at the target reference point now or has fluctuated around the target reference point for the past few years. “</i></p> <p>The NWCR Stock was below the target reference point and Figure 6 on page 25 shows that it was not at the target</p>

reference points nor has it been fluctuating around the target reference point for the past few years. The most the Determination could state that is that “The ORH3B NWCR and ORH7A stocks are above the lower bound of the management target and hence are within the target reference range, thereby meeting the SG80.” (page 129)

These are compounded by the uncertainties, and the fact that the stocks were as low as 10% in 2005.

The following observations are applicable to all stocks.

In practice, use of the ‘bounds’ means that the lower 30% bound becomes the target reference point. The target reference range starting at 30% is inappropriate, given the long life, slow reproduction and past overfishing of orange roughy. It is not precautionary. For SG 60, it is necessary that “Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.” They are not. Moreover for SG 80, it is required that “Reference points are appropriate for the stock and can be estimated. The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.” Given the past history of overfishing, there is far more than an appreciable risk.

The “soft limit” at 20% is not above the level at which there is an appreciable risk of impairing reproductive capacity in orange roughy stocks. There is significant uncertainty arising from the relatively short time that such long lived stocks have been fished, uncertainty about the stock-recruit relationship and these are compounded by the history of overfishing.

### **ORH3B ESCR**

Stocks plummeted to 20-30% of un-fished biomass from 2000 to 2015 and have not recovered above that. Uncertainties in this assessment include how much of spawning biomass the acoustic survey covers, whether a spawning plume (“Rekohu”) is new or longstanding, and patterns in year class strength as only 2 years of age composition data was used. The uncertainties about the so-called Rekohu spawning plume means that it is quite possible that the stock has been fished down to below the point where recruitment would be impaired, and the stock would not meet the SG 60 level.

On most of the South Rise and east features, catch rates have tended to decline rapidly and then flatten out with little recovery. The fishery on the South Rise moved east over time “which was described as a serial depletion of orange roughy from the hills” (Clark 1997, MPI 2015). “The non-spawning fishery has therefore largely contracted to the hill complexes in

	<p>the southeast corner of the Rise.” (MPI 2015). There has also been a “spatial contraction of the fishery during the spawning period” (MPI 2015). Again, the target reference points are too high and the stock is not at that point.</p> <p><b>ORH7A</b></p> <p>The fishery was fished down to 10% of biomass in the 1980s, and only reached anywhere near 30% of biomass during the last 6 years. The stock was assessed in 2013 and estimated to be 20 or 24% <math>B_0</math>. As such, it is close to the soft limit (which itself is uncertain) and would not meet the SG 60 level.</p> <p>Uncertainties in this assessment include how much of spawning biomass the acoustic and trawl survey covers and patterns in year class strength. While the assessment model shows increasing biomass, the acoustic and trawl surveys have been declining since 2009 – the 2013 survey was 54% of the 2009 result.</p>
<i>Rationale</i>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as to the existing status of the stocks.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>Considering the history of overfishing, often down to 10% of virgin biomass, the serial depletion of the stocks and the known longevity and slow reproduction of orange roughy, and the many uncertainties involved, no reasonable CAB could have reached a decision to score any stocks at 60%.</p> <p>The errors are material as they go to the heart of sustainability.</p>

<i>Performance Indicator</i>	<p><i>PI 1.1.3 Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe: 90</i></p> <p><i>Should be: below 60 (page C154; Page 130)</i></p>
<i>Reason</i>	<p>PI 1.1.3 All stocks are below target levels, and so are depleted.</p>

	<p>Rebuilding strategies must be implemented in a manner consistent with the MSC standard. Plans must include rebuilding timeframes which are based on the time it would take a stock to rebuild to target levels without any fishing (<math>T_{min}</math>) and the standard allows rebuilding to take up to twice this duration (<math>2 * T_{min}</math>). Rebuilding of all stocks to target levels must occur within the <i>shorter</i> of 30 years or 3 times its generation time to achieve SG60: but orange roughly reach reproductive maturity at ages of approximately 30 years, There are enormous uncertainties left in orange roughy stock assessments, and these uncertainties are validated in the serial depletions that have occurred to date.</p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as to whether there is a reasonable expectation of success.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached a decision that there is a reasonable expectation of success.</p> <p>The CAB should have applied PI 1.1.3 for each area individually, since each stock has a different status. It cannot be said for orange roughy as a whole that “stocks” have a reasonable expectation of success; and the rebuilding timeframe must be for each stock.</p> <p>Instead, the CAB looked only at the ORH3B ESCR stock (page 131). That stock is estimated to be at only 24% <math>B_o</math>, having plummeted from 2000 to 2015 to 20-30%, and have not recovered above that. Historical catch rates have declined rapidly and flattened out with little recovery. In no way can a reasonable CAB conclude that there is a “reasonable expectation of success” of rebuilding.</p> <p>The errors are material as they go to the heart of sustainability.</p>

<p><i>Performance Indicator</i></p>	<p><i>PI 1.2.3 There is a robust and precautionary harvest strategy in</i></p>
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	<p><i>place</i></p> <p><i>ORH3B NWCR 85</i></p> <p><i>ORH3B ESCR 85</i></p> <p><i>ORH7A 85</i></p> <p><i>Should be: below 60 (page C156; Page 133)</i></p>
<i>Reason</i>	<p>For a score of 60, the harvest strategy must be “likely to work based on prior experience or plausible argument.”</p> <p>Prior experience shows the opposite.</p> <p>As noted by the CAB, the harvest strategy is merely an agreement between industry and MPI. Therefore there can be no certainty that the MPI will set catch limits for the three stocks using the agreed HCR. The statement that “the fisheries have had previous conservative management that has led to abundance increases” is both wrong (management has not been conservative) and misleading (the vast majority of stocks have crashed to well below MSY). The statement is also at contrast with what is stated lower (“the harvest strategy is an improvement on how management advice was provided in the past.” The heavy reliance on Cordue (2014) is misplaced.</p>
<i>Rationale</i>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability.</p>

<i>Performance Indicator</i>	<p><i>PI 1.1.3 Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe:90</i></p> <p><i>Should be: below 60 (page C154; Page 130)</i></p>
<i>Reason</i>	<p>PI 1.1.3 All stocks are below target levels, and so are depleted. Rebuilding strategies must be implemented in a manner consistent with the MSC standard. Plans must include rebuilding timeframes which are based on the time it would</p>

	<p>take a stock to rebuild to target levels without any fishing (<math>T_{min}</math>) and the standard allows rebuilding to take up to twice this duration (<math>2 * T_{min}</math>). Rebuilding of all stocks to target levels must occur within the <i>shorter</i> of 30 years or 3 times its generation time to achieve SG60: but orange roughy reach reproductive maturity at ages of approximately 30 years, There are enormous uncertainties left in orange roughy stock assessments, and these uncertainties are validated in the serial depletions that have occurred to date.</p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as to whether there is a reasonable expectation of success.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached a decision that there is a reasonable expectation of success.</p> <p>The CAB should have applied PI 1.1.3 for each area individually, since each stock has a different status. It cannot be said for orange roughy as a whole that “stocks” have a reasonable expectation of success; and the rebuilding timeframe must be for each stock.</p> <p>Instead, the CAB looked only at the ORH3B ESCR stock (page 131). That stock is estimated to be at only 24% <math>B_o</math>, having plummeted from 2000 to 2015 to 20-30%, and have not recovered above that. Historical catch rates have declined rapidly and flattened out with little recovery. In no way can a reasonable CAB conclude that there is a “reasonable expectation of success” of rebuilding.</p> <p>The errors are material as they go to the heart of sustainability.</p>

<p><i>Performance Indicator</i></p>	<p><i>PI 1.2.2 There are well defined and effective harvest control rules in place</i></p> <p><i>ORH3B NWCR 90</i></p>
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	<p><i>ORH3B ESCR 90</i></p> <p><i>ORH7A 90</i></p> <p><i>Should be: below 60 (page C156; Page 136)</i></p>
<i>Reason</i>	<p>For a score of 60, it is required that “Generally understood harvest control rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.”</p> <p>The rules are not in place: see above. They are simply an agreement between industry and MPI.</p> <p>The Management Strategy Evaluation (MSE) did not explicitly account for the impact of spawning on recruitment success, as is noted (pages 135-136). The evaluation did not account for the impacts of climate change, and did not cover a very wide spectrum of uncertainties – and stock structure was not accounted for.</p> <p>Nor does the evaluation take account of ocean acidification. As Williams et al (2010)<sup>2</sup> found “Resilience of seamount ecosystems dominated by corals is low compared to most other marine systems subject to disturbance by bottom trawling because there are no alternative habitats of the same value for supporting associated species, and because trawling typically removes coral habitat from large areas of individual seamounts. Management to conserve seamount ecosystems needs to account for changing oceanographic conditions (ocean acidification), as well as the direct impacts of human activities such as bottom trawling.”</p>
<i>Rationale</i>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability.</p>

## Principle 2: Environmental impact of fishing

***Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.***

<p><i>Performance Indicator</i></p>	<p><i>PI 2.2.1 The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups. (page 152; page C177)</i></p> <p><i>Scores: ORH3B ESCR – 75</i></p> <p><i>OrH3B NWCR – 75</i></p> <p><i>ORH7A – 95</i></p> <p><i>(Page 164)</i></p> <p><i>Should be: Below 60</i></p>
<p><i>Reason</i></p>	<p>A score of 60 requires that “Main bycatch species are likely to be within biologically based limits.”</p> <p>The orange roughy fishery is still lacking key information on at least some of the main by-catch species. NZ MPI has stated that if catch levels are deemed to be impacting on the sustainability of a by-catch population then by-catch species may be considered for possible introduction into the QMS, or other management measures may be implemented, such as catch limits, gear restrictions or closed fishing areas (MPI, 2010a; Page 45). Yet without stock assessments for affected by-catch, the fishing managers will not know. MPI has also observed that orange roughy fishing is also known to interact with several species of sharks, many reported using generic codes for ‘other sharks and dogfish’ and ‘deepwater dogfish’, that are vulnerable to overfishing.</p> <p>By-catch is a significant issue. In the ORH3B Northwest Chatham Rise, Baxter’s lantern dogfish are considered a main by-catch species because they have low productivity and high vulnerability, and reach the 1% threshold set for shark species, and in the RH3B East and South Chatham Rise, catches from the ORH3B ESCR UoA average about 100 t per year of Baxter’s lantern dogfish and about 180 t of combined dogfish.</p> <p>The shovelnose spiny dogfish, <i>Deania calcea</i>, is caught in fairly</p>

	<p>large numbers by the orange roughy fishery yet there are no stock assessments and no management of the species under the New Zealand quota management system. (Punt et al. 2013). Other species of concern include the pale ghost shark, <i>Hydrolagus bemisi</i>, dark ghost shark, <i>H. novaezealandiae</i>, and the smooth skate, <i>Dipturus innominatus</i>.</p> <p>It is simply not possible to state that species of deepwater dogfish are likely to be within their biologically based limits, given the lack of data and their poor reproductive output. There have been no stock assessments.</p> <p>These arguments and concerns also apply to PI 2.2.2 (there is no QMS for these – see page 154), so it cannot be said there is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations, and to PI 2.2.3 (PI2.2.3 Bycatch species information / monitoring PISGs) which requires for a score of 60 that information is adequate.</p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability: excessive bycatch is not sustainable.</p>

<p><i>Performance Indicator</i></p>	<p><i>PI 2.3.1 The fishery meets national and international requirements for the protection of ETP species.</i> <i>(ETP=Endangered, Threatened or Protected Species)</i></p>
<p><i>Reason</i></p>	<p>The following considerations apply to all Principle 2 considerations.</p> <p>As Williams et al found in 2010, “There is ample and robust evidence that benthic communities of seamounts in the</p>

	<p>Australian and New Zealand region have been impacted by bottom trawling.”</p> <p>At the scale of individual seamounts, impact includes the destruction and removal of extensive areas of ‘reefs’ or ‘thickets’ of stony coral matrix which forms complex biogenic habitat (Koslow et al. 2001; Althaus et al. 2009. Clark &amp; Rowden 2009)”<sup>3</sup></p> <p>Bottom trawling causes physical disturbance and removal of 3D biogenic structures on margins and seamounts. Widespread interference with seeps is likely, affecting habitat provision, trophic subsidies and connectivity.(Levin et al 2016).<sup>4</sup></p> <p>Deep-sea trawling and oil, gas and mineral exploration and extraction now take place at the depths occupied by the assemblage. The impact of these activities on what are likely to be very slow-growing individuals is potentially profound and long lasting. Our observations suggest that an assumption that biota at these depths is sparse and hence that biological impacts of resource exploitation is likely to be slight is not warranted.”<sup>5</sup></p> <p>“The trawl fisheries for orange roughy, oreos, and cardinalfish take place to a large extent on seamounts or other features (Clark &amp; O’Driscoll 2003, O’Driscoll &amp; Clark 2005). These features are often geographically small and, in common with other, localised habitats like vents, seeps, and sponge beds, do not appear on broad-scale habitat maps (e.g., at EEZ scale) and cannot realistically be predicted by broadscale environmental classifications.” (MPI 2014).</p> <p>Most of orange roughy catch comes from seamounts (including hills and ridges). O’Driscoll and Clark (2003) reported that 59.5% of effort and 62.4% of catch targeted on orange roughy comes from seamounts.</p> <p>The impact of bottom trawling on corals is likely to be significant with high sensitivity to trawling and long recovery times in the order of decades if not centuries.</p> <p>A large number of researchers have noted a high degree of endemism associated with seamounts. De Forges et al (2000) noted that:</p> <p><i>“Seamounts comprise a unique deep-sea environment, characterized by substantially enhanced currents and a fauna that is dominated by suspension feeders, such as corals.”</i></p>
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*“Low species overlap between seamounts in different portions of the region indicates that the seamounts in clusters or along ridge systems function as ‘island groups’ or ‘chains,’ leading to highly localized species distributions and apparent speciation between groups or ridge systems that is exceptional for the deep sea. These results have substantial implications for the conservation of this fauna, which is threatened by fishing activity.”*

This endemism is likely to mean that the classification system devised by Rowden et al (2005) will under-estimate the biodiversity on seamounts. For example, fish species diversity on some seamounts has also been reviewed by NIWA scientists (Tracey et al 2004). Tracey et al (2004) found there was clearly different fish fauna on seamounts north and south of 41oS and that in 10 seamount complexes there was different species richness. Even within a seamount complex they found different species dominating different seamounts.

Tracey et al (2011) analysed the distribution of nine groups of protected corals based on bycatch records from observed trawl effort from 2007–08 to 2009–10, primarily from 800–1000 m depth. For the orange roughy target fishery, about 10% of observed tows in FMAs 4 and 6 included coral bycatch, but a higher proportion of tows in northern waters included coral (28% in FMA 1, 53% in FMA 9). (MPI 2014)

Tracey et al (2012) noted in a study of a seamount complex on the North Chatham Rise which had been targeted for orange roughy – “The study showed that fish assemblages on seamounts can vary over very small spatial scales, in the order of several km. However, patterns of species similarity and abundance were inconsistent across the seamounts examined, and these results add to a growing literature suggesting that faunal communities on seamounts may be populated from a broad regional species pool, yet show considerable variation on individual seamounts.”

The impacts of trawling on seamounts and the potential recovery time of the diversity that is there could take centuries to recovery from just one trawl. As Clark et al (2015) observed: “many deep-sea invertebrates are exceptionally long-lived and grow extremely slowly: these biological attributes mean that the recovery capacity of the benthos is highly limited and prolonged, predicted to take decades to centuries after fishing has ceased.”

Protected deep sea corals are amongst those long-lived

invertebrates. (Tracey et al 2003). Corals collections from trawl nets have been aged at 300-500 years old for bubblegum coral (*Paragorgia arborea*), at least 300-500 years for bamboo corals (*Keratoisis* sp.) and deep-sea stony corals have reported ages of 50 to 640 years (*Enallopsammia rostrata*).

**Impacts on Habitats, and Vulnerable Marine Ecosystems**

Bottom trawls in the New Zealand orange roughy fishery target seamounts on which vulnerable marine ecosystems have formed over thousands of years. Bottom trawlers destroy coral, sponges and other species and vulnerable marine ecosystems. These impacts are a central concern for the Submitters, and are an insurmountable problem for the applicants. Coral bycatch from the orange roughy fisheries on the Chatham Rise includes black corals, stony branching and cup corals, and dead coral rubble, with relatively smaller catches of bubblegum coral, precious coral, other gorgonians (such as primnioids and plexaurids) and hydrocoral. (page 65) The overlap of coral distribution and the fishing activities, combined with corals low productivity long recovery period, makes deep-sea coral populations especially vulnerable to damage by fishing gear. (page 66)

Some misconceptions need to be addressed. Firstly, it is sometimes claimed that the footprint of the trawl fishery is small. This is both wrong in fact and completely misleading. The fact is that a significant area of each type of habitat has been impacted by bottom trawlers, which target seamounts. Cumulative impacts and connectivity between ecosystems means that this claim can be given no credibility. For instance, the assessment claims that “[o]f the 1.1% of the SPRFMO Convention Area that is shallower than 2,000 m, about 0.5% is deeper than 1,500 m and thus deeper than orange roughy fisheries normally operate, has never been fished and is not within any footprint declared to SPRFMO. This means that >99% of the SPRFMO Convention Area is not within any bottom fishing footprint declared to SPRFMO and is closed to bottom trawling.” (Page 77) This logic fails: the issue are the VMEs that are damaged and destroyed by orange roughy fishing, not the areas that are not.

The CAB should have considered a report published in 2012 on the extent of the spatial impact of the NZ bottom trawl fisheries both inside the NZ EEZ and in the SPRFMO area.<sup>6</sup>

The report estimates a cumulative area of 16,000 km<sup>2</sup> of seabed impacted by the NZ high seas bottom trawl fishery in the SPRFMO area between 2002-2006. The report also goes

into some detail on information provided by the NZ Ministry of the Environment that fishing by New Zealand vessels in 2008, most of which occurred within the New Zealand EEZ, operating in waters deeper than 200 m, conducted 38,648 trawls with a cumulative impact of 85,222 km<sup>2</sup> on the seabed. The actual area impacted will certainly be less given that many tows will occur over areas previously towed but the figures nonetheless point to the potentially large areas of the seabed impacted in relatively short periods within the overall timeframe of the deepwater bottom trawl fisheries. An excerpt from the report follows:

*“Case study: Impact of New Zealand’s bottom trawl fisheries (South Pacific)”*

According to information submitted by the New Zealand Ministry of Fisheries to the South Pacific RFMO negotiating process, 40 New Zealand flagged vessels engaged in high seas bottom trawl fishing in the South Pacific during the period 2002-2006 (New Zealand Ministry of Fisheries 2009). The main target species were orange roughy (75% of the reported catch), deep-sea cardinal fish, oreos, and alfonsinos.

The fleet conducted altogether 11,145 tows during this period with most of the fishing activity concentrated in the months of April-August. An average of 18 vessels participated in the fishery per year. A previous submission by New Zealand to the South Pacific RFMO negotiating process indicated that the high seas bottom trawl fleet fished a total of 4,379 days in the period 2002-2006. The total reported catch for the five year period was 12,352 t of “retained” catch, representing approximately 1.1 t per tow. The average number of tows per day would have been approximately 2.5 tows per day. Each vessel would have fished, on average, slightly less than 50 days per year.

Below we provide a number of ‘worst case’ estimates of the impact of bottom fisheries, calculated by multiplying the fished area per tow with the number of tows per fishing vessel per year. It is possible that areas are fished more than once, in which case the total impacted area is smaller.

To estimate the cumulative impact of New Zealand’s trawl fishery in the South Pacific in the period 2002- 2006 we used the following data (see also Table 3). The average distance per tow was 5.8 nautical miles or 10.8 kilometers, with an average towing time of 2.2 hours. According to the New Zealand Ministry of Fisheries, the optimum spread of the trawl doors or otter boards during towing is 120-150 m (with maximum spread at app. 200 m). Using 135 m as the mean optimal spread, the average area of seabed impacted by the gear would have been approximately 1.46 km<sup>2</sup> per trawl tow. Thus, assuming a bottom trawl vessel targeting orange roughy averaged 2.5 tows

per day, the vessel would have impacted approximately 3.65 km<sup>2</sup> of seabed per day of fishing. The cumulative area of impact on the seabed of the high seas bottom fleet for the five year period would have been approximately 16,000 square kilometers or 3,200 km<sup>2</sup> per year. Each vessel would have averaged a cumulative impact of approximately 180 km<sup>2</sup> of seabed for 1.5-2 months of bottom trawl fishing per year (see Table 3).

More generally, the New Zealand Ministry of the Environment estimated the seabed impact of large-scale bottom trawl fishing by New Zealand vessels in 2008, most if not all of which occurred within the New Zealand EEZ. A fleet of 68 large fishing vessels, primarily vessels longer than 28 m operating in waters deeper than 200 m, conducted 38,648 trawls with a cumulative impact of 85,222 km<sup>2</sup> on the seabed. Each tow would have impacted an average of 2.2 km<sup>2</sup> of the seabed with each of the 68 vessels making an average of 568 tows in 2008. Many of these vessels would have been targeting deep-sea species such as hoki *Macruronus novaezelandiae*, oreos, and orange roughy with at least some of the fishing targeting aggregations of fish associated with seamounts (or hills, knolls, or rises) where the tows are often shorter (in terms of length and time in contact with seabed) than in continental slope areas (Ministry of Environment New Zealand 2010).

The calculation of the average area impacted per trawl or tow by bottom trawlers based on the information provided by the New Zealand Ministry of the Environment results in a higher figure than the figure derived from using the information submitted by the New Zealand Ministry of Fisheries for the high seas bottom trawl fisheries in the South Pacific. However, this may be due to a relatively larger proportion of tows within New Zealand's EEZ occurring along continental slope areas or large plateaus and rises as opposed to trawling on seamounts (which tend to involve shorter tow times)." (Pages 51-52)

Secondly, it is sometimes claimed that impacts are restricted to the trawl footprint. However, sediment clouds affect surrounding areas.

Thirdly, it is sometimes claimed that trawls follow established tow lines. Yet there is no evidence that this is the case and that trawls do not in fact impact new areas, and evidence of corals and sponges being caught in nets underline that the reverse is the case. This is itself a problem. There are no prior assessments of areas before they are trawled, and without that, there can be no confidence that new vulnerable marine ecosystems (VMEs) are being destroyed or damage. As MRAG notes, "Recent information from trawl surveys supports a conclusion that coral will remain well established on fished

	<p>UTFs (Underwater Topographic Feature), although not at the density prior to trawling.” (pages 77-78). In other words, coral has been destroyed.</p> <p>Another ecosystem issue is that of removal of orange roughy biomass on the ecosystem, its biodiversity and related groups or species.</p> <p>In summary, there is no basis for awarding SG60, far less SG80, based on the damage to coral. The draft assessment that SG80 level is not met for NWCR and ESCR with regard to ETP coral species due to unacceptable impacts is supported by the submitters, but this conclusion should also have been reached for ORH7A.</p> <p>As with much of the assessment, the CAB minimises damage and dismisses it without objectively analyzing the data. In PI 2.3.1, the CAB states that “National legislation does not set numerical limits on coral interactions, but does require minimizing impacts; the orange roughy fisheries tend to fish in previously fished areas on UTFs, which minimizes new damage.</p> <p>New Zealand does not set quantitative limits on the interactions of the orange roughy fisheries, but has strong policies and strategies for minimizing interactions with marine mammals and seabirds. The policies also apply to corals, and measures such as closed areas and limited trawl lines apply to the fisheries. Therefore, the fisheries high degree of certainty to be within limits of national and international requirements for all ETP elements” (page 160)</p> <p>The premises, stated as half truths, in no way justify the stated conclusion that “Therefore, the fisheries high degree of certainty to be within limits of national and international requirements for all ETP elements.”</p> <p>The required outcome for (a) for 60 is “Known effects of the fishery are likely to be within limits of national and international requirements for protection of ETP species.” It is clear that the reviewers wished to attain 100, so posited the “high degree of certainty” outcome above. They could not be more wrong. In fact they are not even “likely” to be within the limits of international requirements.</p> <p>The UNGA has laid down very specific guidelines to protect both deep sea stocks and vulnerable marine ecosystems. It is shocking that the reviewers made the finding about international requirements without investigating those international requirements.</p> <p>In 2006, after intensive negotiations and discussions, the</p>
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United Nations General Assembly adopted resolution 61/105 which called on high seas fishing States individually and through RFMOs to take a series of specific actions to manage bottom fisheries on the high seas as a matter of priority. These measures were intended to protect the long-term sustainability of deep-sea fish stocks, and to “prevent significant adverse impacts” (SAIs) on “vulnerable marine ecosystems” (VMEs) by bottom fisheries, or else ensure that such fisheries are “not authorized to proceed”.<sup>7</sup> The specific actions were outlined in paragraph 83 of resolution 61/105 and included the following:

- conduct impact assessments to determine whether bottom fishing activities would have significant adverse impacts on VMEs or on the long-term sustainability of deep sea fish stocks;
- close areas of the high seas to bottom fishing where VMEs are known or likely to occur and “ensure that such activities do not proceed” unless the bottom fishing in such areas can be managed in a way that prevents significant adverse impacts on vulnerable marine ecosystems;
- require RFMO members to ensure that vessels flying their flag cease bottom fishing activities in areas where, in the course of fishing operations, VMEs are encountered.

Following the adoption of resolution 61/105, a number of States believed that, in order to facilitate its implementation, it was necessary to establish a common agreement on the operational definition of key terms. In March 2007, it was therefore agreed at the 27<sup>th</sup> Session of the FAO Committee on Fisheries that States would negotiate, under the auspices of FAO, an international set of guidelines for the implementation of resolution 61/105 which would, inter alia, establish an agreed set of operational criteria for conducting impact assessments of deep-sea fisheries, identifying VMEs, and defining “significant adverse impacts”. FAO subsequently held an Expert Consultation on deep-sea fisheries to draft the guidelines in September 2007, followed by two rounds of intergovernmental negotiations (referred to as FAO “Technical Consultations”) to formally negotiate and adopt the International Guidelines for the Management of Deep Sea Fisheries in the High Seas in 2008.

In 2009, the UNGA again reviewed the actions taken by States and RFMOs to implement the bottom fisheries provisions of the previous UNGA resolution, in this case resolution 61/105. Based on the review, the UNGA adopted resolution 64/72, which reaffirmed and strengthened the commitments contained in resolution 61/105. and endorsed the new FAO International

Guidelines for the Management of Deep-sea Fisheries in the High Seas (hereafter referred to as the FAO Guidelines). In paragraph 119, resolution 64/72 further committed States individually and through RFMOs to take urgent actions, inter alia, to “ensure that vessels do not engage in bottom fishing” until impact assessments have been carried out consistent with the criteria established in the FAO Guidelines, and to “ensure the long-term sustainability of deep sea fish stocks and non-target species and the rebuilding of depleted stocks”. A key paragraph, Paragraph 120, specifically calls on States and RFMOs “not to authorize bottom fishing activities” until the measures agreed to in paragraph 119 and resolution 61/105 have been adopted and implemented.

Once again, following the UNGA workshop on bottom trawling in 2011, at which it was clear that the resolutions were not being fully implemented and that some environmental impact assessments were not being made public, the UNGA review of actions taken since the adoption of previous resolutions revealed major shortcomings in their implementation, and emphasized “the need for full implementation by all States and relevant regional fisheries management organizations and arrangements of their commitments ... on an urgent basis”.<sup>8</sup>

Resolution 66/68, adopted in 2011, emphasised the importance of assessments, and called for further actions by States and RFMOs to:

- strengthen procedures for both carrying out impact assessments to take into account individual, collective and cumulative impacts, and for making these assessments publicly available;
- establish and improve procedures to ensure that assessments are updated when new conditions or information so require;
- establish and improve procedures for evaluating, reviewing and revising, on a regular basis, assessments based on best available science and management measures;
- establish mechanisms to promote and enhance compliance with the applicable measures related to the protection of VMEs in accordance with international law.

In the South Pacific, CMM 2.03 for the regulation of bottom fishing was adopted by the South Pacific Regional Fisheries Management Organization (SPRFMO) at the second meeting of the Commission in 2014, to replace the interim measures for bottom fisheries adopted in 2007 and 2009. At the fourth Commission meeting in 2016, the measure was slightly amended to become CMM 4.03.<sup>9</sup> The current measure, CMM 4.03, largely incorporates the measures agreed on an interim

basis in 2007 by establishing a historic existing fishing footprint area, an impact assessment requirement, a catch limitation, a move-on rule in some areas within the footprint<sup>10</sup>, and provisions for fishing outside the footprint on the basis of a prior impact assessment.<sup>11</sup>

SPRFMO provided a draft 'Revised Draft Bottom Fishery Impact Assessment Standard' (BFIAS) in 2009.<sup>12</sup> The draft however, failed to make it clear that fishing should not be allowed in areas where VMEs are known or likely to occur unless SAIs on VMEs can be prevented; nor did it establish adequate threshold quantities of VME indicator species for the move-on rule or explicitly require an assessment of the impact on non-target and most bycatch fish species, including 'low productivity', rare or endemic species. New Zealand<sup>13</sup> stated that it intended to review its impact assessment in 2010, when it planned to review its implementation of the interim measures more fully;<sup>14</sup> this has not yet been done. Cumulative impacts are still not being assessed.

New Zealand's management regime involves a mixture of open, closed and 'move-on' blocks.<sup>15</sup> New Zealand closed a substantial portion of its footprint to bottom fishing, including some areas where VMEs are known or likely to occur, by closing all previously "lightly trawled" areas within its footprint and approximately 15% of the "moderately" and "heavily" trawled areas within its footprint. The effect of these measures has been to eliminate bottom trawling in 41% of the total 217,463 km<sup>2</sup> that fall within the New Zealand bottom trawl footprint surface area; a further 30% (the moderately trawled areas) of the area was made subject to a move-on rule, and the remaining 29% (the heavily trawled areas) left open to bottom trawling with no constraints.<sup>16</sup>

In its 2009 comments on the New Zealand approach to managing bottom fisheries, the US expressed serious concerns that the 20 minute blocks allow the incorporation of large swaths of "new" areas that would not otherwise have been included in the SPRFMO bottom fishing footprint if a smaller block area was used. It also asserted that the size of the 20 minute blocks allows bottom fishing in "new" or previously unfished areas, even in "heavily trawled blocks". The US expressed additional concerns regarding the lack of information on the specific impacts of fishing gear types on the seabed, and on the impacts of bottom fishing on target species other than orange roughy, as well as on bycatch species.<sup>17</sup>

New Zealand replied that it is not actually feasible for vessels to accurately trawl exactly the same track as trawled previously, notwithstanding the substantial improvements in navigational equipment over the past decade. New Zealand

cited an analysis conducted by O'Driscoll & Clark (2005)<sup>18</sup> which shows that vessels do not repeat their trawl tracks when fishing seamount features typically targeted in the deep-water trawl fisheries, and that although there are some directional preferences on certain seamounts related to the topography of the seamount concerned, in other instances vessels may conduct radial trawls on seamounts from almost any direction.<sup>19</sup> Thus even on heavily trawled seamounts, areas of the seamount which have not been previously fished may still be vulnerable to the impact of continued bottom fishing. New Zealand also reported that most of the bottom trawling over the past several years has taken place in the heavily trawled blocks (where no restrictions are in place) given industry reluctance to operate in areas where a move-on rule is in place, but that within the heavily trawled blocks there were reports that new, previously unfished, features were being fished.<sup>20</sup>

It was also pointed out by New Zealand that the areas where their vessels are authorized to bottom fish represent only 0.13% of the entire SPRFMO Area. However, it is important to note that Parker *et al* estimate that the footprint areas where New Zealand vessels are authorized to fish actually comprise approximately 16% of the SPRFMO area seabed shallower than 2000 meters, and thus accessible to fishing.<sup>21</sup> Moreover, in 2009, Penny *et al* provided a more precise breakdown of the size of New Zealand's bottom fisheries footprint, and the areas open to bottom trawl fishing within the footprint, in relation to the overall area of seabed at various depths located within the SPRFMO Convention Area.

In a 2013 review of the Australian and New Zealand footprints in the SPRFMO area, Penny noted that "estimates of the 'fished area' generated using any mapping resolution other than actual trawl tracks substantially exaggerate the areas within the footprints that have been impacted, with inclusion of substantial unfished areas within these 'fished footprint' maps" and concluded that some 95% to 96% of a footprint mapped using 20-minute blocks, as SPRFMO has done, would not have been previously fished. He went on to state that predictive habitat modelling studies indicated that there would be a "high probability of occurrence of vulnerable scleractinian corals and octocorals in unfished areas contained within the 'fished footprint'" and that under UNGA resolutions, the expectation would be that vulnerable marine ecosystems (VMEs) occurring within 'previously fished' areas will be protected from significant adverse impacts, necessitating measures to protect these VMEs "irrespective of whether they occur within or outside 'previously fished areas'."<sup>22</sup>

New Zealand reports that VMEs are likely to occur in most high

	<p>seas areas of the South Pacific where bottom fishing occurs (e.g. seamounts, rises, ridge systems). Despite this, the government has chosen to close only a portion of its footprint to bottom fishing. To implement the UNGA resolutions and SPRFMO interim measures, the New Zealand government engaged in consultations with the high seas fishing industry, environmental non-governmental organizations and government departments concerned with environmental conservation, and attempted to strike a balance between competing objectives: on the one hand the protection of all features known or likely to support VMEs from any SAIs from bottom fishing operations, and, on the other hand, to provide access to adequate and suitable target areas to provide for a viable and sustainable deep-water high seas trawl fishery. Thus, rather than closing all areas where VMEs are known or likely to occur unless fisheries are assessed for their impacts and can be managed to prevent SAIs on VMEs (as is called for in the UNGA resolutions), New Zealand has chosen to attempt to provide 'adequate and representative protection' from trawling impacts by closing approximately 40% of its bottom fisheries footprint and allow continued bottom fishing in the remaining areas with limited (a move-on rule in some areas) or no measures in place to prevent SAIs on VMEs.<sup>23</sup></p> <p>New Zealand announced changes to some areas within its bottom trawl footprint in 2015: two blocks (nos. 1 and 2) previously open to bottom trawl fishing (subject to a move-on rule) have been closed, and one block previously within the footprint but closed to bottom trawl fishing (block #18) has been opened.<sup>24</sup> New Zealand stated that it closed the two blocks because of the substantial bycatch of many species indicative of the presence of VMEs. It is not clear whether the move-on rule was ever triggered by trawling in these blocks, but New Zealand requires the reporting of any amount of bycatch of VME indicator species, not only amounts exceeding the level that triggers the move-on rule.<sup>25</sup> New Zealand also intends to carry out exploratory bottom longlining<sup>26</sup> for toothfish in the SPRFMO area close to the boundary of the CCAMLR area in the mid-Pacific Ocean.</p> <p>New Zealand has made some progress in predicting the distribution of VMEs within the SPRFMO area. Information on the distribution of VMEs in the SPRFMO area is very sparse however,<sup>27</sup> and thus predicting where VMEs are relies on predictive models, which have been shown to be inaccurate to date.</p> <p>A move-on rule has been adopted by New Zealand, but the rule is only applicable to 30% of the high seas areas where New Zealand vessels are currently permitted to bottom trawl</p>
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	<p>fish. Bottom fishing in the 'heavily fished' blocks of the New Zealand footprint is not covered by the rule.</p> <p>CMM 2.03 provides<sup>28</sup> that Contracting Parties should undertake stock assessments of principal deep-sea fishery resources targeted, and, to the extent possible, taken as bycatch and caught incidentally in these fisheries, including straddling resources. This has not been done.<sup>29</sup></p> <p>Furthermore, although the Scientific Committee was requested to undertake these stock assessments by 2015, this was not done either. Therefore the industry is fishing on stocks without stock assessments, with minimal information. The SPRFMO Scientific committee noted the scarce data that was available for stock assessment. Biomass indices in the SPRFMO area are almost entirely restricted to CPUE low information modeling and thus subject to large variables in outcome.<sup>30</sup> New Zealand described the stock assessment methods as "low-information" stock assessment methods.</p> <p>In conclusion, it cannot be said that "the fisheries [sic] high degree of certainty to be within limits of national and international requirements for all ETP elements. The reviewers completely ignored international requirements in their analysis.</p> <p>The Determination rightly notes that trawling damages vulnerable deep-sea coral communities which have low productivity and long recovery periods, (page 70) and that trawling creates a substantial sediment plume which disperses slowly, over large distances, smothering individuals and preventing juveniles from settling. However the Determination then proceeds to minimise the effects, claiming that because there is some coral on UTFs (underwater topographical features, which "supports a conclusion that coral will remain well established on fished UTFs, although not at the density prior to trawling." (page 82). This kind of unscientific and unquantified statement is not befitting a MSC certifier.</p> <p>Similarly, the Determination discussed the <i>Tangaroa</i> survey on page 83-84. The conclusion cited is that the study</p> <p>"While not fully analysed, this study clearly shows from the distribution of the various taxa, the continued existence of a variety of trawl-sensitive benthic biota (including VME indicator taxa) on seamounts that have documented levels of fishing from light (&lt;200 tows) to heavy (&gt;2000 tows). This information demonstrates that:</p> <p>(i) coral and fishing can co-exist on UTFs,</p>
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even when fishing is considered to have been heavy; and,

- (ii) the distributions of coral indicator taxa do not appear to be altered by substantially different levels of fishing effort. “

Again, this demonstrates clear bias. This is the only conclusion from the *Tangaroa* cruise. It is farcical. Of course the corals on the seamount summits, where the bulk of the fishing will occur, or on the very edge of the top of the seamount, will be different from those on the sides. Of the top of the seamount has its own species, and all the fishing is on the top of the seamount, then those seamount top species will be severely impacted, possibly to the point of not being able to recover. Other species, who live mostly on the sides, may be unaffected, if they are not affected by plume, so while the seamount will still have some corals and other VME indicators, some species will may be eradicated.

A similar spurious argument made by the Determination is that only a small portion of the ocean is fishable: e.g. page 82: “The vast majority of the SPRFMO Convention Area (>98%) is not fishable, being deeper than 2,000m (Table 3.1.1.1. Williams et al., 2011). Of the 1.1% of the SPRFMO Convention Area that is shallower than 2,000 m, about 0.5% is deeper than 1,500 m and thus deeper than orange roughy fisheries normally operate, has never been fished and is not within any footprint declared to SPFRMO. This means that >99% of the SPRFMO Convention Area is not within any bottom fishing footprint declared to SPRFMO and is closed to bottom trawling.”

What matters is what proportion of the 1% is trawled. There are species that have their distributions restricted to that small area, and if a significant percentage of that small area is impacted, then those species may suffer significant adverse impacts. In addition, these distinct, if relatively small, areas are isolated from each other, rather like islands surrounded by inhospitable deep sea. If bottom trawling removes a significant percentage e.g 50% of the population of one of these species, they can be pushed to the brink of an Allee effect, where the population is not large enough to sustain itself. That is likely because the larvae for maintaining the population are being produced locally, with only a small percentage coming from another seamount.

Yet another spurious argument made relates to protected areas on page 87. A lengthy list of marine reserves is listed, and the Determination states that “All of these measures contribute to protect the marine environment generally and to

mitigate and [sic] adverse effects from bottom trawling.” (page 88). Yet the vast majority of marine reserves listed are irrelevant to bottom trawling. How can it possibly be said that “all” of the measures contribute to mitigate adverse effects from bottom trawling? A similar misleading statement on page 88 is that “the area of the high seas seabed that surrounds New Zealand is largely closed to bottom trawling.” In fact the bottom trawling measure defines a footprint, which is subject to being expanded under paragraphs 16-21 of CMM 4.03. Exactly this was done under [CMM 4.14](#) (2016) which granted an application by the New Zealand deep water fishing industry for exploratory toothfish fishing.

This error is perpetuated on page 91, where the Determination states that “From the selected CMM paragraphs, it is clear that bottom fishing can only be conducted by members or CNCPs in areas defined to the Commission as a member or CNCP bottom fishing footprint areas based on fishing activity between the years 2002 and 2006 and that also have submitted an acceptable Bottom Fishing Impact Assessment (BFIA). To date only Australia and New Zealand have both declared footprint and accepted BFIA, the relevant footprint is included in each BFIA<sup>31</sup>. Thus, the vast majority of the SPRFMO Convention Area is currently closed to bottom fishing.” CMM 4.14 alone shows this is incorrect, and was incorrect at the time of the Determination.

The analysis of the SPRFMO management framework is either factually wrong or highly misleading. On page 92 the Determination states that “it is clear that SPRFMO, its members and CNCPs have tried to set up a management framework that fully addresses the UNGA resolutions...”

Whether SPRFMO tried to do so, it did not: the CMM 2.03 (now 4.03) states at paragraph 8(h) that a Member or CNCP may exclude part of its bottom fishing footprint from the application of sub-paragraph (g) by dividing its footprint into areas open to bottom fishing and areas to which sub-paragraph (g) would apply.” This is an exception built in to cater to New Zealand’s own non-complying implementation which allows fishing free from the strictures of paragraph (g).

Paragraph (g), which is excluded from the quotation on paragraph 89 of the Determination, reads:

“g) require vessels flying their flag to cease bottom fishing activities within five (5) nautical miles of any site in the Convention Area where evidence of a VME is encountered above threshold levels established under sub-paragraph (f) in

	<p>the course of fishing operations, and to report the encounter to the Secretariat of the Commission in accordance with the guidelines at Annex 1, so that appropriate action can be taken in respect of the relevant site;”</p> <p>In other words, New Zealand is excluded from the application of the move-on rule laid down in UNGA resolution 61/105 (2009) paragraph 83(d): “To require members of the regional fisheries management organizations or arrangements to require vessels flying their flag to cease bottom fishing activities in areas where, in the course of fishing operations, vulnerable marine ecosystems are encountered, and to report the encounter so that appropriate measures can be adopted in respect of the relevant site; “</p> <p>In addition, the statement that “the vast majority of the SPRFMO Convention Area is currently closed to bottom fishing” is meaningless. The Determination could equally well have stated that the vast majority of the entire world’s ocean is closed to bottom fishing. The issue is simply the damage that is being caused by the fishing in the area being fished. The requirement of UNGA resolution 61/105, and subsequent resolutions 64/72 and 66/68, is to prevent significant adverse impacts on vulnerable marine ecosystems. Such statements read as advocacy for the applicant, rather than dispassionate and objective evaluation.</p> <p>The required outcome for (b) for 60 is that the CAB must find that “known direct effects are unlikely to create unacceptable impacts to ETP species.” In fact, they are certain to.</p> <p>The reviewers canvass some of the risks of harm to ETP coral species, but go on to state that “the vast majority of the SPRFMO Convention Area (&gt;98%) is not fishable, being deeper than 2,000 m”. What possible relevance has that statement to the effects that trawling has on the ETP coral that it impacts? It has no more relevance than stating that the bottom trawlers do not target the moon and therefore moon landscapes are not affected. The issue is where the bottom trawlers are fishing, not where they are not fishing. The issue at hand is the serious or irreversible harm that ETP species suffer from bottom trawling. Such frankly ludicrous statements simply demonstrate bias by the reviewers. The reviewers continue to argue that “). Of the 1.1% of the SPRFMO Convention Area that is shallower than 2,000 m, about 0.5% is deeper than 1,500 m and thus deeper than orange roughy fisheries normally operate, has never been fished and is not within any footprint declared to SPRFMO. This means that &gt;99% of the SPRFMO Convention Area is either outside of the combined Australian and NZ footprint and therefore formally closed to bottom fishing by the binding bottom fishing CMM implemented by SPRFMO, or effectively inaccessible to bottom fishing due to depth.” (Page 162.) Again, this</p>
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is utterly irrelevant. The reviewers do allow that “the trawl fishery does expand to new areas (albeit at a very slow and continually reduced rate.)” (page 162) Obviously, expanding to new areas puts new areas of coral at risk.

Nevertheless, the review team concluded for the NWCR and ESCR that it cannot be concluded that “Therefore it cannot be said, for NWCR and ESCR, that direct effects of orange roughy fishing are highly unlikely to create unacceptable impacts to ETP species. MSC requires for the SG80 to be met, that “known direct effects of the fishery are highly unlikely [sic] to hinder recovery or rebuilding of ETP species/stocks.”

However, firstly, this conclusion is equally applicable to the other stocks, and secondly, there is no discussion of whether the “Known direct effects are unlikely to create unacceptable impacts to ETP species.” (to reach the 60 threshold). The reviewers simply did not turn their minds to it. Given their findings about the effects of fishing on UTFs, including sediment plumes, they should have not even reached 60.

On page 166, the CAB concluded that “Overall, policy frameworks and their implementation through a series of measures explicitly designed to manage the impact of fisheries on ETP species comprise a strategy in place for managing the fishery’s impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.”

Here again, the CAB reaches a conclusion which is not based on the required premises: there is no discussion before that conclusion of international requirements. There is no critical discussion of impacts on ETP species, and no dispassionate analysis. There is merely a recital of applicable legislation. There is also the extraordinary statement that “Cold water corals are fully protected under the Wildlife Act 1953”. Taken at face value, that statement implies that no cold water corals are impacted at all. Yet we know that is not true.

On the next page, the CAB states that:

“Regarding protected corals, there is an objective basis for confidence that BPAs as a strategy to limit fisheries interactions with these habitats [sic] will work, as effectively enforced closed areas to trawling as a means of protecting sensitive habitat is widely known to be an effective strategy. The practice of using the same tow paths on previously fished parts of UTFs reduces the scale of the damage from towing. Maintenance of this practice will keep the fishery impacts within current acceptable [sic] bounds.”

The statement that “effectively enforced closed areas to trawling as a means of protecting sensitive habitat is widely known to be an effective strategy” would only be accurate if other trawling did not impact sensitive habitat. But we know that it does. And the statement that “The practice of using the same tow paths on previously fished parts

	<p>of UTFs reduces the scale of the damage from towing. Maintenance of this practice will keep the fishery impacts within current acceptable [sic] bounds” is obviously false as trawls are not always kept to the same tow paths: the CAB notes on page 82 that “the fishery has moved into new areas each year”, and that “However, UTFs considered to be heavily fished still contain diverse assemblages of corals and other epibenthic fauna”.</p> <p>The New Zealand government has said that it not actually feasible for vessels to accurately trawl exactly the same track as trawled previously, notwithstanding the substantial improvements in navigational equipment over the past decade. New Zealand cited an analysis conducted by O’Driscoll &amp; Clark (2005)<sup>32</sup> which shows that vessels do not repeat their trawl tracks when fishing seamount features typically targeted in the deep-water trawl fisheries, and that although there are some directional preferences on certain seamounts related to the topography of the seamount concerned, in other instances vessels may conduct radial trawls on seamounts from almost any direction.<sup>33</sup> Thus even on heavily trawled seamounts, areas of the seamount which have not been previously fished may still be vulnerable to the impact of continued bottom fishing. New Zealand also reported that most of the bottom trawling over the past several years has taken place in the heavily trawled blocks (where no restrictions are in place) given industry reluctance to operate in areas where a move-on rule is in place, but that within the heavily trawled blocks there were reports that new, previously unfished, features were being fished.<sup>34</sup></p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above. It completely failed to analyse the international requirements.</p> <p>The CAB failed to assess the threshold of 60 and assumed it applied.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability.</p>

	Significant damage is caused to vulnerable marine ecosystems by bottom trawling.
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<i>Performance Indicator</i>	<p>PI 2.3.3 <i>Relevant information is collected to support the management of the fishery impacts on ETP species, including: -information for the development of the management strategy;- information to assess the effectiveness of the management strategy; and –information to determine the outcome status of ETP species.</i></p> <p><i>Score: 80 – ORH7A; 75 – ESCR, NWCR</i></p> <p><i>Should be: below 60</i></p>
<i>Reason</i>	<p>For a score of 60, it must be shown that “Information is sufficient to qualitatively estimate the fishery related mortality of ETP species.”, that “information is adequate to broadly understand the impact of the fishery on ETP species.” And most importantly, that “Information is adequate to support measures to manage the impacts on ETP species”</p> <p>The latter test is clearly not satisfied. The explanation on page 170 goes nowhere near to satisfying this test. Information adequate to support measures to manage impacts would include actual video surveys of the intended trawl tracks and samples taken. Instead, the CAB cites observers, VMS, vague ‘research surveys and other research projects’. None of these suffice.</p>
<i>Rationale</i>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability. Significant damage is caused to vulnerable marine ecosystems by bottom trawling.</p>

<p><i>Performance Indicator</i></p>	<p>PI 2.4.1 <i>The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function</i></p> <p>Scores: 80-ORH7A</p> <p>75 – ESCR, NWCR</p> <p>Should be: less than 60</p>
<p><i>Reason</i></p>	<p>The test for 60 is The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm. Under CB3.14.2.1 “Serious harm means gross change in habitat types or abundances, and disruption of the function of the habitats.</p> <p>Under CB 3.14.2.2, “Irreversibility means changes that are expected to take much longer to recover than the dynamics in un-fished situations would imply, some sort of regime change is implied from which recovery may not automatically occur.”</p> <p>These criteria are almost designed for the kind of benthic damage caused by bottom trawling. The science shows that bottom trawling means gross change in habitats and disruption of the function of the habitats, and the damage is irreversible: recovery would take thousands of years.</p> <p>The reviewers acknowledge this: “Damage to some habitats in this fishery occurs with minimal trawling and will be long lasting due to the nature of the key benthic organisms and the depth (e.g. biogenic habitat with vertical relief).” (page 172)</p> <p>But they attempt to minimise this by stating that:</p> <p>“Damage will, however, be restricted to areas trawled so that, the extent of any damage will be in proportion to the trawl footprint of the fishery.”</p> <p>Of course the damage is restricted to the areas trawled. This is an example of bias and lack of objective analysis shown by the reviewers. The rest of the discussion on page 172 is of this ilk:</p> <p>“Therefore, over the last 5 years, the maximum amount of structural damage to UTF habitats within the orange roughy distribution range that could be attributed to orange roughy fishing in the UoC areas is 13%, assuming 100% habitat destruction of habitat on the fished UTFs in the UoC areas. According to Black <i>et al.</i> (2013), there have been no studies investigating whether current trawling frequencies have had adverse effects on the structure and function of benthic communities, or on the productivity of the associated fisheries. In the orange roughy fishery on the Chatham Rise, which is prosecuted primarily in the 800–1200 m depth zone, there is evidence that fishing effort has shifted geographically over time in response to changes in catch rates on individual hills (MPI 2012). The fishery expands to new areas each year, but the rate of additional ‘new area’ subjected to trawling in each successive year has continued to decline throughout the time series (Black <i>et al.</i> 2013).” (page 172)</p> <p>Other than implicitly acknowledging that trawlers do not stay within the existing trawled footprint, this analysis is more of the same “they don’t damage where they don’t fish” analysis. The other variant is repeated: that they only fish within the trawl tracks:</p>

	<p>“Trawling tends to be restricted to specific areas, e.g., following specific trawl paths on UTFs, leaving substantial areas of many UTFs un-impacted. (NIWA 2015b). Thus, there is evidence that complete serious or irreversible habitat destruction even on the 12% of fished UTFs within the UoC areas in the orange roughy distribution area of the bioregion is highly unlikely.”</p> <p>These twin arguments - “they don’t damage where they don’t fish” and “they only stay within the trawl tracks (but sometimes move outside them)” only serve to reinforce the obvious points: bottom trawling irreversibly damages habitat where they trawl.</p> <p>The ultimate score of 90 is nothing short of absurd.</p> <p>The conclusion is likewise absurd:</p> <p>“Similar to UTF habitats, evidence from fishing patterns year over year that fished areas of slope habitat remain suitable for orange roughy fishing over time provides some evidence that slope habitat structure and function are not being seriously or irreversibly harmed by the fishery. (PI score of 90).” (page 173)</p> <p>This argument hides so many premises that it is again absurd. It assumes that the corals damaged by bottom trawling are essential habitat for orange roughy. Yet given the argument that bottom trawling targets the same trawl tracks virtually each time, the obvious conclusion must be that the orange roughy aggregations are present despite the habitat destruction. It only remains to be pointed out that “habitat structure” is not only the habitat of the target species.</p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability. Significant damage is caused to vulnerable marine ecosystems by bottom trawling.</p>

<p><i>Performance Indicator</i></p>	<p>PI 2.4.2 <i>There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types.</i></p> <p>Score: 85</p>
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	Should be: less than 60
<i>Reason</i>	<p>The CAB accept that NZ does not have a fully implemented benthic impacts strategy. (page 175)</p> <p>The analysis then departs on an analysis of benthic protected areas. This is not a substitute for a strategy to prevent serious or irreversible harm. At most it is a strategy to preserve some areas from damage. That aside, there is no analysis of whether the benthic protected areas are representative, scientifically determined or, quite simply, areas the fishing industry did not want to fish.</p> <p>In fact, most of the BPAs include abyssal plain and most of the seamounts at fishable depths lie outside the BPAs.</p> <p>Over 50 percent of the area is within 200 nautical miles of the Kermadecs – an area that is too deep to trawl and includes the Kermadec Trench which reaches a maximum depth of 10,047 m.</p> <p>Only 27.7 percent of the BPAs fall within the depth range sampled by research trawls (down to 1950m) – the remaining 72.3 percent falls within areas in which depths are beyond those currently regarded as trawlable.<sup>35</sup> (page 7) “The benthic protection areas ...comprise 14.3% of the area of trawlable depth within the EEZ. However, they also coincide strongly with areas of low biodiversity...” (page 28) (Trawlable depth is defined as down to 1950m which is much deeper than typical orange roughy or oreo fisheries.)</p> <p>The reduction in trawling opportunities caused by the BPAs was estimated at less than 0.2% of deepwater trawl fishing. This is less than 100 tows out of 47,000 in 2004-05 fishing year.</p> <p>Very little of the area has or will ever be trawled – most of it is just too deep (84.5 percent of the closures are deeper than 1500m) or there are no fish in economic quantities to trawl. Areas of high biodiversity and high productivity (eg west Chatham Rise) is under-represented in the BPAs.</p> <p>The conclusion that the BPAs comprise a ‘partial strategy’ that warrants a score of 80 is completely unsupported.</p>
<i>Rationale</i>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p>

	<p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability. Significant damage is caused to vulnerable marine ecosystems by bottom trawling.</p>
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<i>Performance Indicator</i>	<p>PI 2.5.1 <i>The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function</i></p> <p><i>Score: 100</i></p> <p><i>Should be: below 60</i></p>
<i>Reason</i>	<p>For a score of 60, the CAB would have to find that “The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.”</p> <p>CB 3.17.3 explains that “The team should note that “key” ecosystem elements are the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics, and are considered relative to the scale and intensity of the fishery. They are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity.</p> <p>The CAB misinterpreted this to mean ecosystem services related to orange roughy. Clearly the benthic structures provide crucial nature and dynamics.</p>
<i>Rationale</i>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability.</p>

	Significant damage is caused to vulnerable marine ecosystems by bottom trawling.
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<i>Performance Indicator</i>	<p><i>PI 2.5.2 There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function.</i></p> <p>Score: 90</p> <p>Should be: less than 60</p>
<i>Reason</i>	<p>To reach a score of 60, the CAB must find that “The measures take into account the potential impacts of the fishery on key elements of the ecosystem.”</p> <p>Yet the CAB found that “and potentially limited benthic impacts (based on the trawl foot-prints) indicate a limited ecosystem impact”. Any dispassionate observer must ask: what does “potentially” limited benthic impacts mean? And obviously the CAB are predicating these ‘limited’ impacts entirely on the “trawl foot-prints”. This despite the evidence that fishing takes place outside existing trawl tracks. The CAB go on to state that (183) “There is information on trawl footprint, and the impact of trawling and the slow recovery for some UTF habitats (e.g. reef-building stony coral habitat).”</p> <p>If the test truly is that there is (some) information about (a) the trawl footprint and (b) the impact of trawling and (c) the slow recovery then this PI is utterly meaningless.</p> <p>But that is not the test. CAB must find that that “The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ ecosystems).” (page 185)</p>
	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability. Significant damage is caused to vulnerable marine ecosystems</p>

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<p><i>Performance Indicator</i></p>	<p><i>PI 2.5.2 There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function.</i></p> <p>Score: 90</p> <p>Should be: less than 60</p>
<p><i>Reason</i></p>	<p>To reach a score of 60, the CAB must find that “The measures take into account the potential impacts of the fishery on key elements of the ecosystem.”</p> <p>Yet the CAB found that “and potentially limited benthic impacts (based on the trawl foot-prints) indicate a limited ecosystem impact”. Any dispassionate observer must ask: what does “potentially” limited benthic impacts mean? And obviously the CAB are predicating these ‘limited’ impacts entirely on the “trawl foot-prints”. This despite the evidence that fishing takes place outside existing trawl tracks. The CAB go on to state that (183) “There is information on trawl footprint, and the impact of trawling and the slow recovery for some UTF habitats (e.g. reef-building stony coral habitat).”</p> <p>If the test truly is that there is (some) information about (a) the trawl footprint and (b) the impact of trawling and (c) the slow recovery then this PI is utterly meaningless.</p> <p>But that is not the test. CAB must find that that “The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ ecosystems).” (page 185)</p>
	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability. Significant damage is caused to vulnerable marine ecosystems</p>

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<i>Performance Indicator</i>	<p>PI 2.5.1 <i>The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function</i></p> <p><i>Score: 100</i></p> <p><i>Should be: below 60</i></p>
<i>Reason</i>	<p>For a score of 60, the CAB would have to find that “The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.”</p> <p>CB 3.17.3 explains that “The team should note that “key” ecosystem elements are the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics, and are considered relative to the scale and intensity of the fishery. They are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity.</p> <p>The CAB misinterpreted this to mean ecosystem services related to orange roughy. Clearly the benthic structures provide crucial nature and dynamics. The CAB misunderstood this PI.</p>
<i>Rationale</i>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability. Significant damage is caused to vulnerable marine ecosystems by bottom trawling.</p>

4.2 *Please state why you or your organisation believes that the failure to follow procedures by the conformity assessment body has significantly affected the result of the Determination such that the Determination should be altered?*

These multiple failures to follow procedures went to the heart of the evaluation of the fishery under Principles 1, 2 and 3. The complete lack of objectivity, bias and multiple failures to assess required and basic information significantly affected the result of the Determination.

### **Principle 3: Effective management**

*The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.*

<p><i>Performance Indicator</i></p>	<p>PI 3.1.1 <i>The management system exists within an appropriate and effective legal and/or customary framework which ensures that it:</i></p> <ul style="list-style-type: none"> <li>- <i>Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2 and</i></li> <li>- <i>observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</i></li> <li>- <i>Incorporates an appropriate dispute resolution framework.</i></li> </ul> <p>Score: 100</p> <p>Should be: less than 60</p>
<p><i>Reason</i></p>	<p>For a score of 60, MSC requires that “There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.”</p> <p>Recent events show that this is not the case. The complete lack of critical faculty is clear in that enthusiastically endorses New Zealand’s management regime. Yet in May, it surfaced that the number of fish caught in New Zealand waters has been under-reported for six decades, with the real catch being 2.7 times official figures. Since the Quota Management System (QMS) was introduced in 1986, the total catch is conservatively estimated to be 2.1 times that reported to the FAO; unreported commercial catch and discards account for the vast majority of the discrepancy; and Only an estimated 42.5 percent of industrial catch by New Zealand flagged vessels was reported. The QMS, despite its being lauded by the Determination, actually undermines sustainable fisheries management by inadvertently incentivising misreporting and dumping. The paper, G. Simmons et al, Reconstruction of marine fisheries catches for New Zealand (1950-2010), 2016, is found at <a href="http://www.seaaroundus.org/doc/PageContent/OtherWPContent/Simmons+et+al+2016+-+NZ+Catch+Reconstruction+-+May+11.pdf">http://www.seaaroundus.org/doc/PageContent/OtherWPContent/Simmons+et+al+2016+-+NZ+Catch+Reconstruction+-+May+11.pdf</a>. The paper includes details of under-reporting, dumping of fish and misreporting of orange roughy. Under-reporting of catch up to 40% is reported. The report found that</p> <p>“Our findings show that the FAO data (14 million t) understate New Zealand catches in</p>

all years from 1950 to 2010, largely due to missing data. There are also large discrepancies between the FAO data and our reconstructed national data (17.7 million t). To the reconstructed national data is added invisible commercial landings (5.7 million t), unreported dumped commercial catch (14.3 million t), and recreational and customary catches (512,000 t). For the years 1950 to 2010, the reconstructed total marine catch of New Zealand (by New Zealand and foreign flagged vessels) is estimated to be 38.1 million t. This indicates that actual catch was 2.7 times the 14 million t reported to the FAO on behalf of New Zealand for the same time period. The extended reconstructed estimate for 1950-2013 is 40 million t, comprised of 19 million t nationally reported, 5.8 million t of invisible landings, 14.7 million t of unreported dumped commercial catch, and 549,000 t of customary and recreational catches.” (page 43).

An internal 2013 Ministry of Primary Industries (MPI) memorandum cited by the researchers (page 47) stated that ““It is more than sustainability. It is more than the fact that we are relying on misleading and incorrect data to sustain our fisheries. The most pressing reason for urgent action is that we have compelling visual evidence of serious offending recorded on a media that could become available (for whatever reason) to outside persons and organizations. Some of these people and organizations could have strong vested interests in this information and make this material quickly available to the public via internet related media i.e. 'you-tube' etc.

The resulting damage that could be caused not just to MPI but to the New Zealand fishing industry and economy as a whole could be extensive. The sight of large perfectly good fish being systematically discarded in such large quantities could have a huge negative effect, as it could easily stir up an emotive backlash from not only the New Zealand public, but from international quarters as well. These images could quickly negate the ‘green sustainable’ image that we as a country portray. **This combined with the fact that we have known about these dumpings / discarding issues for many years, and would appear to have done little to combat it, would be very difficult to explain and be unpleasant at best.**”

This objective information can be contrasted with the uncritical and frankly sycophantic nature of the determination e.g. “MPI verification through auditing and reconciliation analysis across multiple sources ensures all catches are reported and documented correctly.” (page 108) and “The deepwater fishing industry in New Zealand works closely with government to ensure compliance with all agreed management measures.” The Determination argues at page 40 at 3.4.1 that “deemed values prevent an incentive for dumping” and “the penalties for discarding QMS species without authorisation are severe, further reducing the incentives to discard. They state that “there was a notable decrease in total non-commercial bycatch during 2011-12 [sic] and 2011-12 (MPI & DWG, 2013) as a result of a decrease in fishing effort and decreases in catch limits.” The MPI memorandum and UBC research reveal such statements to be mere cheerleading for the DWG, rather than a dispassionate analysis.

The failure to understand the separate nature of the national and international regimes is revealed in the completely incorrect statement in 3.5.9 on page 109 that “The orange roughly UoAs fall under single jurisdiction management.” The paragraph goes on to say that some of the stocks are under SPRFMO management – obviously not under single jurisdictional management.

Paragraph 3.5.4 includes an incorrect statement. It states that “The Fisheries Act 1996 requires a precautionary approach.” In support of this it cites the s. 10 information principles, which include that “decision makers should consider any uncertainty in the

	<p>information available in any case, and “decision makers should be cautious when information is uncertain, unreliable or inadequate,” and “the absence of, or any uncertainty in, any information any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of this Act.” But nowhere does the Act state that it requires a precautionary approach, and nowhere does it state that lack of full scientific evidence shall not be used as reason for postponing cost effective measures to prevent environmental degradation. The purpose of the Fisheries Act is stated in s 8(1) to be “to provide for the utilisation of fisheries resources while ensuring sustainability”. Worse, the words “should” is not directive. Rio Principle 15 provides that lack of full scientific evidence “shall” not be used as a reason for postponing etc.</p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as management goes to the heart of sustainability. Without good and effective management, the fishery will not be sustainable.</p>

In addition, the objectors draw attention to the fact that while it is stated that meetings commenced on 27 July 2014, if it had started the assessment after 1 April 2015, version 2.0 would have applied. That is significant as the older version 1.3 does not, as version 2.0 does, have a dedicated scoring element for VMEs: criteria that are adapted from the FAO International Guidelines for the Management of Deep-sea Fisheries. Habitat impact thresholds are explicit in v 2.0.

So where an eight month delay would have seen a more precautionary standard be adopted, the CAB chose instead to proceed with the older version. The Adjudicator should take version 2.0 into account and take a precautionary view accordingly. We echo the comments of Grieve et al (2014) in recommending that the MSC emphasises that certification bodies need to “take great care to adopt a precautionary approach when certifying deep-water habitat.” As the authors observed, “[t]he deep sea may be much more susceptible to fishing pressure due to a lack of priming events. It is often said that we understand the surface of the moon better than deep-water habitats and determining the functioning of this ecosystem before fishing impacts have taken their toll may not be possible.”<sup>36</sup>

## PART SEVEN: OBJECTION PURSUANT TO PARAGRAPH CD2.7.2.3

7.1 Using the template below, please list all additional information not forming part of the record<sup>37</sup> that is relevant to the circumstances at the date of the Determination has not been considered, as per Paragraph CD2.7.2.3 of the objections procedure. Ensure that reasons are provided as to why you or your organisation believes that the particular information in question:

- a) was known or should reasonably have been known to any party to the assessment process, and
- b) should reasonably have been made available to the conformity assessment body during the assessment process, and
- c) if considered, could have made a material difference to the outcome of the assessment;

<i>Information</i>	G. Simmons et al, Reconstruction of marine fisheries catches for New Zealand (1950-2010), 2016, and cited MPI report therein.
<i>Reason why information should reasonably have been known</i>	Due diligence by the assessment team would have uncovered this crucial information.
<i>Reason why information should reasonably have been made available</i>	The team had access to MPI officials; if they had asked the right questions, as did the paper authors, they would have received these answers.
<i>Reason why information could have made a</i>	The statement that “we have known about these dumpings / discarding issues for many years, and would appear to have

<i>material difference to the outcome of the assessment</i>	done little to combat it” shows that management is inadequate. The paper reveals major shortcomings in New Zealand’s management regime, particularly with regard to discards and reporting.
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<i>Information</i>	M. Gianni, O.G. Bos (2012). Protecting ecologically and biologically significant areas (EBSAs): Lessons learned from the implementation of UN resolutions to protect deep-sea biodiversity. Report number C061/12. IMARES - Institute for Marine Resources & Ecosystem Studies. Netherlands. 95pp.
<i>Reason why information should reasonably have been known</i>	Due diligence by the assessment team would have uncovered this paper.
<i>Reason why information should reasonably have been made available</i>	It is relevant information to VMEs.
<i>Reason why information could have made a material difference to the outcome of the assessment</i>	The Gianni paper shows the extent of damage from fishing to VMEs.

<sup>1</sup> As defined in Paragraph CD2.6.5.1 (a) of the objections procedure.

<sup>2</sup> Alan Williams et al. Seamount megabenthic assemblages fail to recover from trawling impacts. Marine Ecology. 2010.

<sup>3</sup> Williams et al 2010. Page 194.

<sup>4</sup> Levin Lisa Ann, Baco Amy R., Bowden David, Colaço Ana, Cordes Erik, Cunha Marina R., Demopoulos Amanda, Gobin Judith, Grupe Benjamin, Le Jennifer, Metaxas Anna, Netburn Amanda, Rouse Greg W, Thurber Andrew R, Tunnicliffe Verena, Van Dover Cindy, Vanreusel Ann, Watling Les. Hydrothermal Vents and Methane Seeps: Rethinking the Sphere of Influence. 3 Frontiers in Marine Science. 19 May 2016. At <http://journal.frontiersin.org/article/10.3389/fmars.2016.00072/full>.

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<sup>5</sup> Thesher et al. Extraordinarily high biomass benthic community on Southern Ocean seamounts. *Scientific Reports* :119 (2011).

<sup>6</sup> M. Gianni, O.G. Bos (2012). Protecting ecologically and biologically significant areas (EBSAs): Lessons learned from the implementation of UN resolutions to protect deep-sea biodiversity. Report number C061/12. IMARES - Institute for Marine Resources & Ecosystem Studies. Netherlands. 95pp.

<sup>7</sup> UNGA resolution 61/105, paragraph 83.

<sup>8</sup> UNGA 66/68, paragraph 122.

<sup>9</sup> Paragraph 27 was amended to reflect a review in 2017 instead of 2016. CMM 4.03.Conservation and Management Measure for the Management of Bottom Fishing in the SPRFMO Convention Area. 4 March 2016. AT <http://www.sprfmo.int/assets/Fisheries/Conservation-and-Management-Measures/CMM-4.03-Bottom-Fishing-2016-4Mar2016.pdf>.

<sup>10</sup> There is an exception for New Zealand's division of areas into areas open to bottom fishing, areas closed to bottom fishing and areas where the move-on rule applies. Paragraph 8(h).

<sup>11</sup> CMM 4.03 para. 8.

<sup>12</sup> CSIRO Marine and Atmospheric Research (Alan Williams, Franziska Althaus, Mike Fuller, Neil Klaer and Bruce Barker) *Bottom Fishery Impact Assessment, Australian report for the South Pacific Regional Fisheries Management Organisation (SPRFMO). July 2011. ("Australian Benthic Assessment")*.

<sup>13</sup> New Zealand Ministry of Fisheries, New Zealand Bottom Fishing Activities by New Zealand Vessels Fishing in the High Seas in the SPRFMO Area during 2008 and 2009. December 2008. Available at <http://www.southpacificrfmo.org/benthic-impact-assessments/>.

<sup>14</sup> Ibid at 14.

<sup>15</sup> New Zealand National Report, page 19.

<sup>16</sup> Ibid.

<sup>17</sup> Collated comments by Participants on the New Zealand Bottom Fishery Impact Assessment. SP-07-SWG-DW-02. May 2009

<sup>18</sup> O'Driscoll, R.L.; Clark, M.R. (2005). Quantifying the relative intensity of fishing on New Zealand seamounts. *New Zealand Journal of Marine and Freshwater Research* 39: 839–850.

<sup>19</sup> A. Penney, M. Clark, M. Dunn, S. Ballara & M. Consalvey. A Descriptive Analysis of New Zealand Bottom Trawl Catch & Effort in the Proposed Convention Area of the South Pacific Regional Fisheries Management Organization. SPRFMO-IV-SWG-05.

<sup>20</sup> New Zealand Ministry of Fisheries. (2008). Bottom Fishery Impact Assessment: Bottom Fishing Activities by New Zealand Vessels Fishing in the High Seas in the SPRFMO Area during 2008 and 2009.

<sup>21</sup> Parker, S. et al., Detection criteria for managing trawl impacts on vulnerable marine ecosystems in high seas fisheries of the South Pacific Ocean. *Mar Ecol Prog Ser*. Vol. 397: 309–317, 2009

<sup>22</sup> A. Penny, Spatial analysis of Australian and New Zealand historical bottom trawl fishing effort in the Convention Area of the South Pacific Regional Fisheries Management Organisation. Research by the Australian Bureau of Agricultural and Resource Economics and Sciences. SPRFMO Document SC-01-20. October 2013. Page 1.

<sup>23</sup> Penny, A. et al., Protection measures implemented by New Zealand for vulnerable marine ecosystems in the South Pacific Ocean. *Mar Ecol Prog Ser*. Vol. 397: 341-354, 2009

<sup>24</sup> New Zealand National Report, at 8.

<sup>25</sup> New Zealand notification of amendments to the status of blocks within its bottom fishing footprint.

Ministry for Primary Industries. 3rd Meeting of the Scientific Committee. September - 3 October 2015. SC-03-DW-03

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<sup>26</sup> See Proposal for exploratory bottom longlining for toothfish by New Zealand vessels outside the bottom lining footprint during 2016 and 2017: Description of proposed activities and impact assessment. SC-03-DW-01\_rev2. At <https://www.sprfmo.int/assets/Meetings/Meetings-2013-plus/SC-Meetings/3rd-SC-Meeting-2015/Papers/SC-03-DW-01-rev2-New-Zealand-Proposal-to-conduct-exploratory-bottom-longlining.pdf>.

<sup>27</sup> New Zealand National Report, at 14.

<sup>28</sup> CMM 2.03 Paragraph (5)(b).

<sup>29</sup> A fine scale spatially disaggregated CPUE analysis has been applied to areas to the east of New Zealand, on the Louisville Ridge. "Estimated median stock for these four stocks ranged from 0.23 of K to 0.44 of K with relatively wide confidence limits" SPRFMO Scientific Committee, Report of the Third Scientific Committee, August 2015, page 7. Attempts to model stocks on the Lorde Howe Rise and Northwest Challenger Plateau have not been completely successful and biomass estimates were very poorly constrained. SPRFMO Scientific Committee, Report of the Third Scientific Committee, August 2015, page 7. There are preliminary estimates of initial biomass, productivity and stock status for four of the six orange roughy sub-stocks. There are concerns over the confidence that can be placed in the CPUE modeling generally. SPRFMO Scientific Committee, Report of the Third Scientific Committee, August 2015 pg 7. The SC noted the scarce data that was available for stock assessment. Biomass indices in the SPRFMO area are almost entirely restricted to CPUE low information modeling and thus subject to large variables in outcome. SC03 at 17.

<sup>30</sup> SPRFMO Scientific Committee, Report of the Third Scientific Committee, August 2015, page 17.

<sup>31</sup> <https://www.sprfmo.int/cmms/benthic-impact-assessments/>

<sup>32</sup> O'Driscoll, R.L.; Clark, M.R. (2005). Quantifying the relative intensity of fishing on New Zealand seamounts. New Zealand Journal of Marine and Freshwater Research 39: 839–850.

<sup>33</sup> A. Penney, M. Clark, M. Dunn, S. Ballara & M. Consalvey. A Descriptive Analysis of New Zealand Bottom Trawl Catch & Effort in the Proposed Convention Area of the South Pacific Regional Fisheries Management Organization. SPRFMO-IV-SWG-05.

<sup>34</sup> New Zealand Ministry of Fisheries. (2008). Bottom Fishery Impact Assessment: Bottom Fishing Activities by New Zealand Vessels Fishing in the High Seas in the SPRFMO Area during 2008 and 2009.

<sup>35</sup> Leathwick J, Julian K and Francis M (2006) Exploration of the use of reserve planning software to identify potential Marine Protected Areas in New Zealand's EEZ. Report prepared for the Department of Conservation. NIWA DOC06213, June 2006.

<sup>36</sup> Grieve C, Brady DC and Polet H (2014) Best practices for managing, measuring and mitigating the benthic impacts of fishing – Part 1. Marine Stewardship Council Science Series 2: 18 – 88 (2014).

<sup>37</sup> As defined in Paragraph CD2.6

**Deep Sea Conservation Coalition, Inc.**  
**and**  
**Greenpeace New Zealand, Inc.**  
**Stakeholder Submission**

**Comments on the Draft Marine Stewardship Council  
(MSC) Public Comment Draft Report -  
Assessment of New Zealand Orange Roughy Fisheries**

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## Introduction

These comments are on the “Full Assessment New Zealand Orange Roughy Fisheries” Public Comment Draft Report (PCDR), January 2016 Prepared for Deepwater Group Limited, by MRAG Americas, Inc.

They are submitted on behalf of Greenpeace New Zealand, Inc. (“Greenpeace”) and Deep Sea Conservation Coalition, Inc., (“DSCC”) both New Zealand incorporated societies which work in marine conservation. DSCC is a coalition of over 70 non-governmental organisations concerned with conservation of the deep sea environment, and Greenpeace is the New Zealand national office of Greenpeace International, and has a long-term involvement with and interest in marine conservation, including the deep sea. Greenpeace is a member of DSCC. Together this submission calls them the Submitters.

DSCC and Greenpeace strongly submit that the proposed certification application should be denied, on the basis that it breaches Principle 1, Sustainable Target Fish Stocks, Principle 2, Environmental Impact of Fishing, and Principle 3, Effective Management, and the assessed scores are incorrect.

## Principle 1 Sustainable target fish stocks

*A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.*

### Target Reference Point

The submitters strongly submit that the level of the target reference point (TRP), and consequently the limit reference point (LRP) level, for orange roughy is not precautionary and cannot be justified based on best practice. In this respect we support the submissions of WWF in this regard. The target reference point for orange roughy is formulated as a ‘range’ of 30% to 40% of the estimated virgin unfished biomass ( $B_0$ ), but in practice, management in fact applies only the lower 30% as a *de facto* TRP. 30% is far too low for a low productivity deep-sea species. Orange roughy may live to 130 years of age (page 18). The age at which 50% of animals are spawning was estimated within the assessment models to range from 32 - 41 years (Page 18). The relationship between spawning biomass and recruitment for orange roughy is poorly known, owing to a lack of data on recruitment strength and the long lag between spawning and subsequent recruitment to the fishable stock. The larval biology of orange roughy, in common with that for most deepwater marine species, is poorly known. (page 19)

The proposed Target Reference Point is not precautionary. The Submitters support WWF’s submissions on this matter.

### Limit Reference Point

At present, there is a so-called ‘soft’ limit set at 20%  $B_0$  and a ‘hard’ limit set at 10% of  $B_0$ . There would be a rebuilding plan when biomass is estimated to be below the soft limit, and a complete closure of the fishery when the biomass falls below the hard limit. However, the Submitters do not accept that a LRP of 20%  $B_0$  is above the level at which there is an appreciable risk of impairing reproductive capacity in orange roughy stocks. There is significant uncertainty stemming from the fact that very long lived stocks have been fished for a relatively short timeframe, compounded by uncertainty about the stock-recruit relationship. The Submitters support WWF’s submissions on this matter.

## **Stock Depletion**

The assessment notes that “A concern with orange roughy fisheries is the potential for spawning success to be disrupted by fishing of spawning aggregations. Given the nature of the fishery, it is not possible to directly measure this impact (if it exists) and consequently it is not modelled explicitly in the MSE.” (page 35) The history of orange roughy fishing is a history of serial depletion.” As noted by MRAG, here is evidence that fishing effort has shifted geographically over time in response to changes in catch rates on individual hills. (Page 77)

By 1992 it became evident that orange roughy are slower growing, longer lived, and less productive than previously thought. As a result, the stock assessment parameters, estimated sustainable yields and TACCs were adjusted downwards.” (page 12) Although several genetic and other methods have been applied to examine stock structure in New Zealand, considerable uncertainty regarding stock structure and stock boundaries remain. (page 14)

An overview of some of the fisheries supports this.

### **ORH Mid-East Coast Stock (2A South, 2B, 3A)**

The 2013 assessment estimated the stock to be at 24%  $B_0$ , and as such is close to the soft limit. Low recruitment means that it would not meet the SG 60 level.

### **ORH3B Northwest Chatham Rise**

The estimate of virgin biomass was 66,000 tonnes, and the current biomass was estimated to be 37% of the un-fished spawning biomass. The stocks were as low as 10% in 2005, and now are said to be around 30-40% of virgin biomass (page 26), and the recent catch of orange roughy is a third to a quarter of the catch taken at the peak of the fishery (page 49). The 2014 NWCR stock assessment considers the NWCR stock “fully rebuilt”, despite an absence of information as to whether the stock is at or above the upper end of the management target range. At the current catch (110t per annum) or the current voluntary catch limit (750t per annum) it is very unlikely the biomass will decline below 20%. Other uncertainties in this assessment include how much of the spawning biomass the acoustic assessment covers, patterns in year class strength, and that the time series of abundance is short.

This absence of information means that the stock would not reach the SG 60 level.

### **ORH3B East and South Chatham Rise**

Stocks plummeted to 20-30% of un-fished biomass from 2000 to 2015 and have not recovered above that (page 29). Uncertainties in this assessment include how much of spawning biomass the acoustic survey covers, whether a spawning plume (“Rekohu”) is new or longstanding, and patterns in year class strength as only 2 years of age composition data was used. The uncertainties about the so-called Rekohu spawning plume means that it is quite possible that the stock has been fished down to below the point where recruitment would be impaired, and the stock would not meet the SG 60 level.

On most of the South Rise and east features catch rates have tended to decline rapidly and then flatten out with little recovery. The fishery on the South Rise moved east over time “which was described as a serial depletion of orange roughy from the hills” (Clark 1997, MPI 2015). “The non-spawning fishery has therefore largely contracted to the hill complexes in the southeast corner of the Rise.” (MPI 2015). There has also been a “spatial contraction of the fishery during the spawning period” (MPI 2015).

### **ORH7A Challenger Plateau, including the Westpac Bank**

The fishery was fished down to 10% of biomass and only reached anywhere near 30% of biomass during the last 6 years. The stock was assessed in 2013 and estimated to be 20 or 24%  $B_0$ . As such, it is close to the soft limit (which itself is uncertain) and would not meet the SG 60 level. Uncertainties

in this assessment include how much of spawning biomass the acoustic and trawl survey covers and patterns in year class strength. While the assessment model shows increasing biomass, the acoustic and trawl surveys have been declining since 2009 – the 2013 survey was 54% of the 2009 result.

## **Stock Rebuilding**

All stocks are below target levels, and so are depleted. Rebuilding strategies must be implemented in a manner consistent with the MSC standard. Plans must include rebuilding timeframes which are based on the time it would take a stock to rebuild to target levels without any fishing ( $T_{min}$ ) and the standard allows rebuilding to take up to twice this duration ( $2 * T_{min}$ ). Rebuilding of all stocks to target levels must occur within the *shorter* of 20 years or 2 times its generation time to achieve SG60: but orange roughly reach reproductive maturity at ages of approximately 30 years, and so a single generation time is very likely to exceed 20 years. There are enormous uncertainties left in orange roughly stock assessments, including whether 20%  $B_0$  is a sufficiently precautionary limit, and whether the hard limit (10%  $B_0$ ) accurately reflects the point at which recruitment is impaired. Reference points must be set high enough to prevent recruitment impairment and to have a sustainable fishery. Instead, the evidence is that the footprint of the orange roughly fisheries continues to expand to move into new areas to engage in serial overfishing.

In conclusion, all orange roughly stocks are likely to be depleted below target levels, which would impair recruitment and therefore not meet the SG 60 scoring guidepost of the MSC standard.

### **PI 1.2.3 Relevant information is collected to support the harvest strategy**

There is no guarantee the observer coverage will be 20% coverage. Priorities are wider than those for research and management and can within years change priorities. There is a level of observer coverage is patchy in the deepwater trawl fishery (orange roughly, oreos and cardinal fish) with an average of 11% of tows observed in 2012-13. In the orange roughly target fishery 11.6% of tow were observed in 2012-13 and 13.1% in 2013-14 but observer vessel days were only half the level required for collection of representative biological information and samples (e.g. otoliths for ageing and length frequency) to manage the fishery and its impacts (MPI 2015b). While fishers are required to report by-catch of marine mammals and seabirds, as well as quota species, the rate of reporting is low. Only with observers on board is there sufficient information to assess by-catch rates. Reporting of non-quota management species and non-target fish species (e.g. corals) relies on reporting from observers. There is currently no long-term planning for research and management.

## **Principle 2: Environmental impact of fishing**

***Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.***

Ecosystem impacts include by-catch and damage to soft and hard corals, sponges and other habitat.

### **By-catch**

The orange roughly fishery is still lacking key information on at least some of the main by-catch species. NZ MPI has stated that if catch levels are deemed to be impacting on the sustainability of a by-catch population then by-catch species may be considered for possible introduction into the QMS, or other management measures may be implemented, such as catch limits, gear restrictions or closed fishing areas (MPI, 2010a; Page 45). Yet without stock assessments for affected by-catch, the fishing managers will not know. MPI has also observed that orange roughly fishing is also known to interact with several species of sharks, many reported using generic codes for 'other sharks and dogfish' and 'deepwater dogfish', that are vulnerable to overfishing. (page 46)

By-catch is a significant issue. In the ORH3B Northwest Chatham Rise, Baxter's lantern dogfish are considered a main by-catch species because they have low productivity and high vulnerability, and reach the 1% threshold set for shark species (page 47), and in the RH3B East and South Chatham Rise, catches from the ORH3B ESCR UoA average about 100 t per year of Baxter's lantern dogfish and about 180 t of combined dogfish (Page 52).

The shovelnose spiny dogfish, *Deania calcea*, is caught in fairly large numbers by the orange roughy fishery yet there are no stock assessments and no management of the species under the New Zealand quota management system. (Punt et al. 2013). Other species of concern include the pale ghost shark, *Hydrolagus bemisi*, dark ghost shark, *H. novaezealandiae*, and the smooth skate, *Dipturus innominatus*.

It is simply not possible to state that species of deepwater dogfish are likely to be within their biologically based limits, given the lack of data and their poor reproductive output.

**PI 2.3.1 The fishery meets national and international requirements for the protection of ETP species**

**PI 2.3.2 The fishery has in place precautionary management strategies designed to:**

- **Meet national and international requirements;**
- **Ensure the fishery does not pose a risk of serious harm to ETP species;**
- **Ensure the fishery does not hinder recovery of ETP species; and**
- **Minimise mortality of ETP species.**

The orange roughy fishery captures fur seals and albatross and petrels. There are specific threats to species from trawl by-catch. The Salvin's albatross, a vulnerable threatened species (Birdlife 2012), has the highest risk from fishing rating of all seabirds assessed in New Zealand (Richards 2013). For this species "captures rates have fluctuated without trend or increased in all fisheries taking substantial numbers of this species between 2002–03 and 2012–13, especially after 2006–07." Trawl fisheries "account for 75% of all estimated captures of Salvin's albatross in these years." About 25% of the impacts in the combined middle-depth fishery.

"Salvin's (vulnerable threatened species), southern Buller's (at risk – nationally uncommon), and NZ white-capped (at risk declining) albatrosses make up 39%, 28%, and 25% of the albatrosses captured, respectively." For all three species the annual potential fatalities (APF) (including cryptic mortality) exceed the estimate of potential biological removals (PBR), assuming an inappropriate recovery factor (f) of 1 (MPI 2014). Dillingham and Fletcher (2011) noted: "A value of  $f = 0.1$  is suggested for threatened species,  $f = 0.3$  for near-threatened species, and  $f = 0.5$  for all other species due to the potential for bias in population estimates (Wade, 1998; Dillingham and Fletcher, 2008)." For Salvin's, a vulnerable threatened species, the estimated potential fatalities (APF) was 35 times the PBR, with  $f = 0.1$  for a threatened species. Orange roughy is small part of overall trawl mortalities.

The National Plan of Action on Seabirds for New Zealand (2013) has goals to reduce by-catch but no new measures are in place and no new measures have been applied to reduce by-catch.

- Management has not defined significant habitats.
- No bioregions have been determined in the main trawling areas in follow-up research.

- Fishery catches many protected coral habitats, and land mainly Scleractinia, with some gorgonians and hydrocorals also landed.
- Significant gaps in knowledge for habitat. Rice (2006) reviews the impacts of trawling. The “conclusions about the effects on habitats of mobile bottom fishing gears were that they:
  - can damage or reduce structural biota (All reviews, strong evidence or support).
  - can damage or reduce habitat complexity (All reviews, variable evidence or support).
  - can reduce or remove major habitat features such as boulders (Some reviews, strong evidence or support).
  - can alter seafloor structure (Some reviews, conflicting evidence for benefits or harm).” (MPI 2014)

“The trawl fisheries for orange roughy, oreos, and cardinalfish take place to a large extent on seamounts or other features (Clark & O’Driscoll 2003, O’Driscoll & Clark 2005). These features are often geographically small and, in common with other, localised habitats like vents, seeps, and sponge beds, do not appear on broad-scale habitat maps (e.g., at EEZ scale) and cannot realistically be predicted by broadscale environmental classifications.” (MPI 2014).

Most of orange roughy catch comes from seamounts (including hills and ridges). O’Driscoll and Clark (2003) reported that 59.5% of effort and 62.4% of catch targeted on orange roughy comes from seamounts.

The impact of bottom trawling on corals is likely to be significant with high sensitivity to trawling and long recovery times in the order of decades if not centuries.

A large number of researchers have noted a high degree of endemism associated with seamounts. De Forges et al (2000) noted that:

*“Seamounts comprise a unique deep-sea environment, characterized by substantially enhanced currents and a fauna that is dominated by suspension feeders, such as corals.”*

*“Low species overlap between seamounts in different portions of the region indicates that the seamounts in clusters or along ridge systems function as 'island groups' or 'chains,' leading to highly localized species distributions and apparent speciation between groups or ridge systems that is exceptional for the deep sea. These results have substantial implications for the conservation of this fauna, which is threatened by fishing activity.”*

This endemism is likely to mean that the classification system devised by Rowden et al (2005) will under-estimate the biodiversity on seamounts. For example, fish species diversity on some seamounts has also been reviewed by NIWA scientists (Tracey et al 2004). Tracey et al (2004) found there was clearly different fish fauna on seamounts north and south of 41oS and that in 10 seamount complexes there was different species richness. Even within a seamount complex they found different species dominating different seamounts.

Tracey et al (2011) analysed the distribution of nine groups of protected corals based on bycatch records from observed trawl effort from 2007–08 to 2009–10, primarily from 800–1000 m depth. For the orange roughy target fishery, about 10% of observed tows in FMAs 4 and 6 included coral

bycatch, but a higher proportion of tows in northern waters included coral (28% in FMA 1, 53% in FMA 9). (MPI 2014)

Tracey et al (2012) noted in a study of a seamount complex on the North Chatham Rise which had been targeted for orange roughy – “The study showed that fish assemblages on seamounts can vary over very small spatial scales, in the order of several km. However, patterns of species similarity and abundance were inconsistent across the seamounts examined, and these results add to a growing literature suggesting that faunal communities on seamounts may be populated from a broad regional species pool, yet show considerable variation on individual seamounts.”

The impacts of trawling on seamounts and the potential recovery time of the diversity that is there could take centuries to recovery from just one trawl. As Clark et al (2015) observed: “many deep-sea invertebrates are exceptionally long-lived and grow extremely slowly: these biological attributes mean that the recovery capacity of the benthos is highly limited and prolonged, predicted to take decades to centuries after fishing has ceased.”

Protected deep sea corals are amongst those long-lived invertebrates. (Tracey et al 2003). Corals collections from trawl nets have been aged at 300-500 years old for bubblegum coral (*Paragorgia arborea*), at least 300-500 years for bamboo corals (*Keratoisis* sp.) and deep-sea stony corals have reported ages of 50 to 640 years (*Enallopsammia rostrata*).

### **Impacts on Habitats, and Vulnerable Marine Ecosystems**

Bottom trawls in the New Zealand orange roughy fishery target seamounts on which vulnerable marine ecosystems have formed over thousands of years. Bottom trawlers destroy coral, sponges and other species and vulnerable marine ecosystems. These impacts are a central concern for the Submitters, and are an insurmountable problem for the applicants. Coral bycatch from the orange roughy fisheries on the Chatham Rise includes black corals, stony branching and cup corals, and dead coral rubble, with relatively smaller catches of bubblegum coral, precious coral, other gorgonians (such as primnioids and plexaurids) and hydrocoral. (page 65) The overlap of coral distribution and the fishing activities, combined with corals low productivity long recovery period, makes deep-sea coral populations especially vulnerable to damage by fishing gear. (page 66)

Some misconceptions need to be addressed. Firstly, it is sometimes claimed that the footprint of the trawl fishery is small. This is both wrong in fact and completely misleading. The fact is that a significant area of each type of habitat has been impacted by bottom trawlers, which target seamounts. Cumulative impacts and connectivity between ecosystems means that this claim can be given no credibility. For instance, the assessment claims that “[o]f the 1.1% of the SPRFMO Convention Area that is shallower than 2,000 m, about 0.5% is deeper than 1,500 m and thus deeper than orange roughy fisheries normally operate, has never been fished and is not within any footprint declared to SPRFMO. This means that >99% of the SPRFMO Convention Area is not within any bottom fishing footprint declared to SPRFMO and is closed to bottom trawling.” (Page 77) This logic fails: the issue are the VMEs that are damaged and destroyed by orange roughy fishing, not the areas that are not.

Secondly, it is sometimes claimed that impacts are restricted to the trawl footprint. However, sediment clouds affect surrounding areas.

Thirdly, it is sometimes claimed that trawls follow established tow lines. Yet there is no evidence that this is the case and that trawls do not in fact impact new areas, and evidence of corals and sponges being caught in nets underline that the reverse is the case. This is itself a problem. There are no prior assessments of areas before they are trawled, and without that, there can be no confidence that new vulnerable marine ecosystems (VMEs) are being destroyed or damage. As MRAG notes, “Recent information from trawl surveys supports a conclusion that coral will remain well established on fished

UTFs (Underwater Topographic Feature), although not at the density prior to trawling.” (pages 77-78). In other words, coral has been destroyed.

Another ecosystem issue is that of removal of orange roughy biomass on the ecosystem, its biodiversity and related groups or species.

In summary, there is no basis for awarding SG60, far less SG80, based on the damage to coral. The draft assessment that SG80 level is not met for NWCR and ESCR with regard to ETP coral species due to unacceptable impacts is supported by the submitters, but this conclusion should also have been reached for ORH7A.

### **Principle 3: Effective management**

*The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.*

#### **PI 3.1.1 The management system exists within an appropriate legal and/or customary framework which ensures that it:**

- **Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and**
- **Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and**
- **Incorporates an appropriate dispute resolution framework.**

Some areas, like ORH1, are enormously data deficient. Research takes a second place to commercial operations and there are questions about whether the crew follow the sampling methodology.

That part of the fishery that is in international waters is not subject to effective management. The South Pacific RFMO measure CM-2.03 called for stock assessments of target, and, where possible, by-catch (paragraph 5(a)), to be undertaken during 2015, but this was not done. Further, the method of addressing damage to benthic habitat, being to permit fishing to continue in ‘heavily fished areas’ and not to apply the move-on rule (which requires captains to report catch of VME indicator species, stop fishing and move away) to those areas, is inconsistent with United Nations resolutions 61/105 and 64/72, which in fact require States to cease authorising fishing in these circumstances.

2009 UNGA resolution 64/72 called on States and RFMOs to “[a]dopt conservation and management measures, including monitoring, control and surveillance measures, on the basis of stock assessments and the best available scientific information, to ensure the long-term sustainability of deep sea fish stocks and non-target species, and the rebuilding of depleted stocks, consistent with the Guidelines” (paragraph 119(d)). Article 5(f) of the UN Fish Stocks Agreement requires States to “minimize...catch of non-target species...and impacts on associated or dependent species, in particular endangered species” This is a longstanding obligation under international law. In the absence of scientific information such as stock assessments, UNGA resolution 64/72 calls on States to “ensure that conservation and management measures be established consistent with the precautionary approach, including measures to ensure that fishing effort, fishing capacity and catch limits, as appropriate, are at levels commensurate with the long-term sustainability of such stocks;” in cases “where scientific information is uncertain, unreliable, or inadequate” (paragraph 119(d)), again reflecting the obligations of States established in Article 6 of the UN Fish Stocks Agreement. If this is not done, flag States and RFMOs are “not to authorize bottom fishing activities until such measures have been adopted and implemented” (UNGA 64/72, paragraph 120).

There is no explicit precautionary approach in the NZ Fisheries Act. Proposals by Ministers to improve the Fisheries Act to make it clear that section 10 is precautionary approach were rejected by the fishing industry.

The current Deepwater Management Plan ends at the end of June and currently it is unclear whether there will be a replacement plan. Despite commitments on consultation on reviewing and consultation on these plans at the beginning of 2015 there has been no consultation. We were advised at the end of 2015 that the Ministry was reconsidering the role of management plans.

The Annual Operational Plan process is difficult to influence as it is decided by the industry and the Ministry prior to discussions with other interests.

There is no clear dispute resolution framework as the operational plan provisions, the allocation of catches between areas, and the Fisheries 2030 framework are all voluntary and have no statutory base.

The Westpac Bank is outside the NZ EEZ and is subject to the requirements of SPRFMO. The regime that applies is an interim regime only and does not meet the requirements of UNGA resolutions.

**PI 3.1.2 The management system has effective consultation processes that are open to interested and affected parties.**

**The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties**

The consultation system does not meet the requirement for 100. There is not consultation of all parties in the process. The MOU between the fishing industry and the Ministry of Primary Industry means that there is exclusion of a number of both science and environmental interests from the consultation process.

The consultation on future research is very patchy. There is currently no research plan and the current cost recovery regime means that final consultation and the scope of the project that consultation only occurs with the fishing industry.

The Ministry is undertaking a review of the cost recovery regime but we have not been consulted on that process.

**PI 3.1.3 The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach**

The current Deepwater Management Plan ends at the end of June and currently it is unclear whether there will be a replacement plan. Despite commitments on consultation on reviewing and consultation on these plans at the beginning of 2015 there has been no consultation. We were advised at the end of 2015 that the Ministry was reconsidering the role of management plans.

The Annual Operational Plan process is difficult to influence as it is decided by the industry and the Ministry prior to discussions with other interests.

The Westpac Bank is outside the NZ EEZ and is subject to the requirements of SPRFMO. The regime that applies does not meet the requirements of the UNGA resolutions.

**PI 3.2.3 Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with**

The management of by-catch species and protected species are less well managed than target species with threats from fisheries catching orange roughy. Protected species interactions with fisheries are also managed under the Wildlife Act (seabirds, corals, sharks, and turtles) and the Marine Mammal Protection Act (whales, seals and dolphins) but this has little teeth to control fishing.

The orange roughy fishery has moderate observer coverage which has varied with the most recent year having the lowest level of coverage. Observer coverage can be poor spatially.

While fishers are required to report by-catch of marine mammals and seabirds, as well as quota species, the rate of reporting is low. Only with observers on board is there sufficient information to assess by-catch rates.

Reporting of non-quota management species and non-target fish species (eg corals) relies on reporting from observers.

**PI 3.2.4 The fishery has a research plan that addresses the information needs of management**

The 10 year research plan is ended and is no longer relevant to the research for orange roughy. As we were advised in last year, the proposal for a 5 year extension was considered to be unfundable by the Ministry of Primary Industry (Turner D, Jan 2015). For the last 2 years it has been only ad hoc research project for deepwater species including orange roughy.

The current annual operational plan for deepwater research for 2015-16 has no directed orange roughy research in the areas proposed.

The operational plan proposed for 2016-17 has one project for orange roughy - North West and East-South Acoustic Survey. At this stage we do not know whether this will occur in the winter of this year.

On this basis a score of 80 or 90 cannot be justified.

**PI 3.2.5 There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives**

**There is effective and timely review of the fishery-specific management system**

There is no guarantee the observer coverage will be 20% coverage. Priorities are wider than those for research and management and can within years change priorities.

The targeted observer coverage was not met on the Chatham Rise or in the Challenger fishery with only 30% of the target being achieved in the Challenger fishery.

There were no otoliths collected in 2014-15 in the NW Chatham Rise.

It is unclear the status of the Deepwater Management Plan and research priorities.

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February 29<sup>th</sup>, 2016

## CONTRIBUTION TO MRAG'S PUBLIC COMMENT DRAFT REPORT FOR THE NEW ZEALAND ORANGE ROUGHY FISHERY

BLOOM is a non-profit organization founded in 2005 that works to preserve the ocean and to increase social benefits in the fishing sector. One of our main topics of action is the protection of the highly vulnerable deep-sea ecosystems, notably against the impacts of bottom trawling. We would hereby like to express our opposition to the conclusions reached by MRAG's Public Comment Draft Report (PCDR)<sup>1</sup> about New Zealand's (NZ) orange roughy (*Hoplostethus atlanticus*) deep-sea bottom-trawl fishery, which recommended that the fishery receive the Marine Stewardship Council (MSC) certification and therefore that the orange roughy fishery be called "sustainable seafood".

We disagree with this certification on at least two grounds:

1. The highly destructive nature of deep-sea bottom trawling and the little social benefits that are associated to its use. We believe that no fishery using bottom-trawls below 600 meters should, anywhere in the world, be considered "sustainable" by any ecolabel;
2. The impact associated with this fishery: habitat destruction (corals, sponges...) and bycatch. Some of these elements have lead to significant improvement requirements according to MRAG's PCDR.

Because of these issues, the NZ orange roughy fishery should not have received approval for certification.

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<sup>1</sup> MRAG Americas (2016) Full Assessment, New Zealand Orange Roughy Fisheries. Public Comment Draft Report. Prepared for Deepwater Group Ltd. 294pp. Available at : [https://www.msc.org/track-a-fishery/fisheries-in-the-program/in-assessment/pacific/new\\_zealand\\_orange\\_roughy/assessment-downloads-1/20160126\\_PCDR\\_ROU462.pdf](https://www.msc.org/track-a-fishery/fisheries-in-the-program/in-assessment/pacific/new_zealand_orange_roughy/assessment-downloads-1/20160126_PCDR_ROU462.pdf)



## IMPACTS OF DEEP-SEA BOTTOM TRAWLS

The deep sea is widely recognized as a low resilience, highly vulnerable environment of which we still know little.<sup>2</sup> Its particular need for protection against human-induced impacts has been acknowledged in various international regulations such as the United Nations' General Assembly resolutions 61/105,<sup>3</sup> 64/72,<sup>4</sup> and 66/68,<sup>5</sup> the Food and Agriculture Organization's international guidelines for the management of deep-sea fisheries in the High Seas,<sup>6</sup> the relevant provisions of Articles 5 and 6 of the 1995 United Nations' Fish Stocks Agreement,<sup>7</sup> and the Council Regulation (EC) No 734/2008.<sup>8</sup> In 2004, over 1,400 marine scientists and conservation biologists signed a statement in favor of protecting the world's deep-sea coral and sponge ecosystems, noting their profound concern that "human activities, particularly bottom trawling, were causing unprecedented damage" to these ecosystems.<sup>9</sup> In 2013, over 300 researchers signed a declaration calling on European policymakers to protect the deep sea from destructive fishing.<sup>10</sup>

Bottom trawling in shallower waters has been considered altogether as the most damaging gear in a US study that polled representatives of several sectors<sup>11</sup> and in the North Sea, the impact of bottom trawling proved to be much greater than several other industrial activities at sea,<sup>12</sup> and its effects on the sea floor have been compared by researchers to the impacts of destructive land-based practices such as intensive agriculture<sup>13</sup> or forest clear-cutting,<sup>14, 15</sup> with the worrying difference that they were occurring "out-of-sight" and thus would need particular

<sup>2</sup> Mengerink, *et al.* (2014) A Call for deep-ocean Stewardship. *Science* 344: 696-698.

<sup>3</sup> United Nations (2007) Resolution adopted by the General Assembly on 8 December 2006—61/105. Sustainable fisheries, including through the 1995 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, and related instruments. A/RES/61/105—Sixty-first session, United Nations, New York, NY (USA). 21 p.

<sup>4</sup> United Nations (2010) Resolution adopted by the General Assembly on 4 December 2009—64/72. Sustainable fisheries, including through the 1995 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, and related instruments. A/RES/64/72—Sixty-fourth session, United Nations, New York, NY (USA). 26 p.

<sup>5</sup> United Nations (2012) Resolution adopted by the General Assembly on 6 December 2011—66/68. Sustainable fisheries, including through the 1995 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, and related instruments. A/RES/66/68—Sixty-sixth session, United Nations, New York, NY (USA). 30 p.

<sup>6</sup> FAO (2009) International guidelines for the management of deep-sea fisheries in the High Seas Food and Agriculture Organization of the United Nations (FAO), Rome (Italy). xv + 73 p.

<sup>7</sup> United Nations (1995) 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. Conference on straddling fish stocks and highly migratory fish stocks, 6th session, July 24-August 4, 1995, United Nations, New York, NY (USA). 40 p.

<sup>8</sup> European Union (2008) Council Regulation (EC) No 734/2008 of 15 July 2008 on the protection of vulnerable marine ecosystems in the high seas from the adverse impacts of bottom fishing gears. Official Journal L 201: 8-13.

<sup>9</sup> [https://mcbi.marine-conservation.org/what/what\\_pdfs/dsc\\_signatures.pdf](https://mcbi.marine-conservation.org/what/what_pdfs/dsc_signatures.pdf)

<sup>10</sup> <http://www.bloomassociation.org/en/declaration-of-support-protect-the-deep-sea-from-destructive-fishing/>

<sup>11</sup> Chuenpagdee, *et al.* (2003) Shifting gears: assessing collateral impacts of fishing methods in US waters. *Frontiers in Ecology and the Environment* 10(1): 517-524.

<sup>12</sup> Human activities analysed included waste disposal, telecommunication cables, the hydrocarbon industry, marine research activities, and bottom trawling. see Benn A, Weaver P, Billet D, van den Hove S, Murdock A, Doneghan G and Le Bas T (2010) Human activities on the deep seafloor in the North East Atlantic: an assessment of spatial extent. *PLoS ONE* 5(9): 15.

<sup>13</sup> Puig, *et al.* (2012) Ploughing the deep sea floor. *Nature* 489: 286-290.

<sup>14</sup> Watling and Norse (1998) Disturbance of the seabed by mobile fishing gear: A comparison to forest clearcutting. *Conservation Biology* 12(6): 1180-1197.



stewardship. With specific regards to deep-sea bottom trawling, about 100 scientific peer-reviewed publications show the negative impacts of deep-sea bottom trawls on species and habitats.<sup>16</sup> It was also estimated that one deep-sea bottom trawl had the same impact as 296 to 1,719 longlines.<sup>17</sup>

We realize that mapping of deep-sea habitats is better now than before; science has been striving to develop population models for deep-sea fishes and some management measures (some whose efficacy is highly questionable) have been put in place by companies and fisheries managers in order to try to curb the ongoing depletion of deep-sea fish populations.<sup>18</sup> However, the fishing technique has not changed and deep-sea bottom trawls still scrape the ocean floor, destroying sensitive habitats and species with large wheels and panels. The fishing nets are still non-selective causing high bycatch of vulnerable and poorly-known fauna and deep-sea fishes are still highly vulnerable to fishing pressure. Calling deep-sea bottom trawling a "sustainable fishery" is therefore completely inappropriate. The precise question of whether deep-sea species could be sustainably fished was addressed during an international scientific workshop in 2010 that BLOOM convened. The workshop's key findings concluded that *"The only way for a deep-sea fishery to be sustainable in an ecosystem context is for it to have a slight ecosystem impact. Bottom trawls are non-discriminatory and do irrevocable damage to the ecosystem, and the workshop participants felt that no bottom trawl fishery could ever adequately satisfy the international objectives of fish stock sustainability and habitat preservation."*

In 2015, during the evaluation process of the French Scapêche deep-sea fishery for blue ling, black scabbardfish and roundnose grenadier, the French non-profit organization BLOOM has already expressed concerns to the certification body MacAlister Elliott and Partners about the confusing message that would be sent to consumers if deep-sea fisheries using bottom trawls were labeled "sustainable". This would affect both the credibility of the MSC as a warrant of sustainable practices and the image of the industry. The signal sent by this certification would mean that the industry would rather choose to invest in marketing and communication rather than committing to convert its fleets to truly virtuous and sustainable fishing practices.

Sustainability is a journey faced with a series of challenges.<sup>19</sup> Having companies pledge "sustainable" practices without having endorsed truly ambitious sustainable standards is counter-productive in creating a general move towards sustainability.

<sup>15</sup> Rossi (2013) The destruction of the 'animal forests' in the oceans: Towards an over-simplification of the benthic ecosystems. *Ocean & Coastal Management* 84: 77-85.

<sup>16</sup> See bibliography at: [http://bloomassociation.org/download/Bibliographie\\_sur\\_les\\_impacts\\_des\\_chaluts\\_profonds.pdf](http://bloomassociation.org/download/Bibliographie_sur_les_impacts_des_chaluts_profonds.pdf)

<sup>17</sup> Pham C, Diogo H, Menezes G, Porteiro F, Braga-Henriques A, Vandeperre F and Morato T (2014) Deep-water longline fishing has reduced impact on Vulnerable Marine Ecosystems. *Scientific Reports* 4: 6.

<sup>18</sup> <https://www.msc.org/track-a-fishery/fisheries-in-the-program/in-assessment/north-east-atlantic/scapêche-roundnose-grenadier-black-scabbard-fish-and-blue-ling-deep-sea/>

<sup>19</sup> Tlusty, et al. (2012) Refocusing Seafood Sustainability as a Journey Using the Law of the Minimum. *Sustainability* 4: 2038-2050.



## SUSTAINABILITY AND THE NZ ORANGE ROUGHY FISHERY

Orange roughy is an emblematic deep-sea species: one of the most long-lived, late-maturing marine species that we know of, which has been red-listed in most NGOs' consumption guides.<sup>20</sup> In the EU, quotas for orange roughy have been set to zero since 2010.

In the following pages, we give some comments on the PCDR of the NZ orange roughy fishery published by MRAG in January 2016:

### A. <80 scoring performance indicators and associated improvement conditions

#### General outcome of the assessment

*"On the basis of this re-assessment of the fisheries, the Assessment Team recommends that the New Zealand fishery for orange roughy receive certification. The assessment team identified two performance indicators for ORH3B NWCR and ORH3B ESCR, one performance indicator for ESCR and one performance indicator for all units that scored less than 80 and received conditions" (PCDR p5)*

- In the PCDR, the certification body MRAG, in agreement with the Deepwater group and the Ministry of Primary Industry (MPI), set the conditions for four performance indicators that did not score high enough during the evaluation process to pass the MSC standards: stock status, ETP species outcome, ETP species information and management system review.
- We find incoherent to grant a positive advice for the MSC certification of a fishery whilst recognizing that some of the sustainability criteria are not met.
- It is even more incoherent to invoke the fact that the fisheries will be re-assessed as a justification to grant the certification. The public will not be able to make the distinction between a fishery that has been granted conditional certification and a fishery that is actually virtuous, since both will be sold with a "sustainable seafood" logo on their packaging.
- **It is the main, if not the only, responsibility of the certification body to prevent fisheries that cannot prove to be sustainable from being certified.**

#### Performance indicator 1.1.1b

This performance indicator aims to evaluate whether *"The stock is at or fluctuating around its target reference point."*

In NZ, the exploitation of orange roughy started in the 1980s, rapidly leading to a fishing-down phase.<sup>21</sup>

<sup>20</sup> Roheim (2009) Thalassorama : An evaluation of sustainable seafood guides: implications for environmental groups and the seafood industry. Marine Resource Economics 24: 301-310.

<sup>21</sup> Clark (2001) Are deepwater fisheries sustainable? The example of orange roughy (Hoplostethus atlanticus) in New Zealand. Fisheries Research 51: 123-135.



Demographic models predicting rebuilds of orange roughy biomass have conflicted with real-world observations.<sup>22</sup>

It is acknowledged in the PCDR that: *"The East and South Chatham Rise stock is estimated to be just below the lower bound of the target management range in 2014. There is a 57% probability of being below the lower limit of the target range. The stock is projected to recover to the lower limit of management target range in 2015. However, given the uncertainty in the estimate, more than one year at or above the lower limit or a lower uncertainty is needed to assure that the stock has reached the harvest range. Hence this stock is not considered to meet the SG80, resulting in a condition."*

- The score given by MRAG for this performance indicator is 70, with the associated condition to *"provide evidence that the ESCR stock is at or fluctuating around its target reference point"* through an action plan that will continue to monitor the stock biomass trajectory for the next 5 years. **This condition/action plan does not look like a solid-enough counterpart to uncertainties in the current assessment of the target stock, which are repeatedly acknowledged in the PCDR.**
- **The reasons for rejecting the approval of a sustainable certification for orange roughy is comprised in the very language of the PCDR:**

#### *Life history (PCDR p18-19)*

- *"Although age determination from otolith rings has been validated by length-mode analysis for juveniles up to four years of age in one study (MPI, 2014a), routine ageing of orange roughy has proven difficult."*
- *"Determination of the age of maturation for orange roughy has also proven difficult although it has been inferred that most orange roughy may take more than two decades to reach maturity."*
- *"The larval biology of orange roughy, in common with that for most deepwater marine species, is poorly known."*
- *"The relationship between spawning biomass and recruitment for orange roughy is poorly known owing to a lack of data on recruitment strength and, in particular, the long lag between spawning and subsequent recruitment to the fishable stock."*

#### *Stock assessment (PCDR p19-20)*

- *"it has proven challenging to conduct assessments that are not subject to considerable uncertainty for a variety of reasons. In 2014, stock assessments based on fitting population dynamics models were approved for the first time in many years for the three areas considered in this assessment (MPI, 2014b, c)"*
- *"Independent stock assessment scientists from New Zealand (1), Australia (2), USA (1), and Canada (1) familiar with stock assessment of orange roughy participated in MPI's 2014 DFAWG and Plenary meetings"*

<sup>22</sup> Watling, et al. (2011) Can ecosystem-based deep-sea fishing be sustained? Report of a workshop held 31 August-3 September 2010. 11, University of Maine, Darling Marine Center, Walpole, ME (USA). 84 p.





consistent with a study by NIWA (2015) indicating the potential damage that trawling can have on deep-sea coral communities in fished areas."

"Regarding indirect trawling impacts, MPI's (2015) literature review indicates that trawling has been shown to create a substantial sediment plume, that in low-current deep-sea environments can disperse very slowly, over large distances (Bluhm, 2001, Rolinski et al., 2001). There have been no-specific studies examining sediment mobilization by fishing gear in deep-sea fisheries but sediment plumes generated through trawling over soft substrate have potential impacts on ETP coral species through smothering of small individuals (Glover & Smith, 2003) and preventing settlement of juveniles (Rogers et al., 1999) with deposition of mm to cm depth. Impacts on coral feeding and metabolic function are uncertain, although shallow water stony corals can actively shed sediment (Riegl, 1995) and potentially cope with a sediment plume but deep-sea sponge respiration has been reported as largely shutting down when subjected to heavy sedimentation loads (Tjensvoll et al., 2013). Sediment impacts are likely to be higher on *Goniocorella dumosa* communities as they are distributed over slope habitat of the Chatham Rise dominated by soft sediment interspersed with hard substrate patches. The longer trawl tows on the slope will tend to generate greater sediment clouds than would the shorter tows typical of UTF fishing. Sediment effects will be less on coral assemblages on UTFs where the substratum is typically rocky, with only small patches of interspersed soft-sediment (Clark et al., 2010)."

"According to Black et al. (2013), there have been no studies investigating whether the current trawling activities have had adverse effects on the structure and function of benthic communities, or on the productivity of the associated fisheries. In the orange roughy fishery on the Chatham Rise, which occurs primarily between depths of 800 – 1,200 m, there is evidence that fishing effort has shifted geographically over time in response to changes in catch rates on individual hills (MPI, 2012). While the fishery has moved into new areas each year, the rate of additional 'new area' subjected to trawling in each successive year has continued to decline throughout the time series (Black et al., 2013). In 2009-10 new area amounted to 3,208 km<sup>2</sup>, which is 4% of the 2009-10 trawl footprint of 79,512 km<sup>2</sup> and less than 1% of the cumulative swept area for the period 1989-90 to 2009-10 of 385,032 km<sup>2</sup>."

(PCDR p75)

"However, UTFs considered to be heavily fished still contain diverse assemblages of corals and other epibenthic fauna and no difference in species numbers or community structures in coral-dominated UTFs within or outside of protected areas (coral dominance indicated no or only light fishing) has been observed (Consalvey, 2006; Clark et al., 2015b). This suggests that coral diversity continues to be maintained on fished UTFs, as most UTFs are fished only on established tow lines, leaving areas of many UTFs unfished because the seabed is too rough or steep to trawl, or where orange roughy do not aggregate. Recent information from trawl surveys supports a conclusion that coral will remain well established on fished UTFs, although not at the density prior to trawling."



(PCR p76-77)

*"Cold water corals are fully protected under the Wildlife Act 1953. Interactions with fisheries are monitored through the MPI's Scientific Observer Programme and vessel reporting; however, there is no overall management plan (Boyd 2013). The orange roughy fishery is spatially managed with defined areas where bottom trawling or all trawling is prohibited (e.g., benthic protected areas (BPAs), 'seamount' closures), which provide some protection for corals. Managed areas have closed approximately 68% of UTFs within New Zealand's EEZ and 74% of UTFs within the Kermadec Bioregion to trawling (Table 26); the remaining open areas allow for potential expansion of trawling beyond the current footprint of the fishery. If the protection of corals from trawling in the orange roughy also relies on fishing only on established tow lines, a mechanism for how the restriction to these tow lines occurs is not clear from the available information."*

### Performance indicator 2.3.3

This performance indicator aims to evaluate whether *"relevant information is collected to support the management of the fishery impacts on ETP species, including: information for the development of the management strategy; information to assess the effectiveness of the management strategy; and -information to determine the outcome status of ETP species."*

It is acknowledged in the PCDR that: *"Although there has been analysis on the distribution of corals and its overlap with orange roughy fisheries in the three UoC areas as well as contained within BPAs in these areas (MPI 2015), the large discrepancy between observed and predicted occurrences of coral and the commensurate large discrepancy in observed vs predicted degree of overlap of protected corals with the orange roughy fisheries creates uncertainty in determining whether the fishery may be threat to the protection of these species."*

- The score given by MRAG for this performance indicator is 75, with the assumption that *"by the end of the certification period information must be sufficient to determine whether the fishery may be a threat to protection and recovery of ETP coral species"*. If we understand correctly, MRAG is suggesting that the fishery should be certified before we know whether the NZ orange roughy has an impact on ETP coral species. Given the extensive scientific evidence on the impact of deep-sea bottom trawling on deep-sea corals, such a risky approach should not be endorsed by a "sustainable seafood" label.

### Performance Indicator 3.2.5

This performance indicator aims to evaluate whether *"the fishery-specific management system is subject to regular internal and occasional external review."*

It is acknowledged in the PCDR that: *"Progress against the objectives in the National Fisheries Plan for Deepwater and the Annual Operational Plan is reviewed annually and reported in the Annual Review Report. MPI conducts an extensive review of performance of the deepwater fisheries (e.g., MPI 2015) that incorporates consultations with*



industry and other stakeholders. Parts of the management system, specifically science and enforcement, undergo external review. Although the internal review is very comprehensive and parties external to MPI participate, there is no explicit separate external review reported for the management system."

- The score given by MRAG for this performance indicator is 70, under the condition that *"by the third annual surveillance the fishery-specific management system must undergo occasional external review."* It is however not made clear how the Deepwater group and the MPI intend to make sure some external review of the management system will occur.

## B. >80 scoring performance indicators

### Performance Indicator 2.1.1

This performance indicator aims to evaluate whether *"the fishery does not pose a risk of serious or irreversible harm to the retained species or species groups and does not hinder recovery of depleted retained species or species groups"*

It is acknowledged in the PCDR that: *"Since 2005–06, orange roughy accounted for about 84% of the total observed catch by weight across all orange roughy fisheries combined, including the three fisheries under assessment (MPI, 2015b). Most of the remainder of the total catch (about 10% of the total) comprised oreo species (Family Oreosomatidae): mainly smooth oreo (Pseudocyttus maculatus) and black oreo (Allocttus niger). Rattails (various species) and shovelnose spiny dogfish (Deania calcea) were the species with high discard rates (90% discarded)."* (PCDR p42)

Deep-sea sharks are particularly vulnerable species to bottom trawling. In the PCDR it is mentioned that *"Among the non-QMS species making up the bulk of discards, Baxter's lantern dogfish and other deepwater dogfish make up small quantities of the catch, but exceeded 1% of the catch for the ORH3B NWCR and ORH3B ESCR UoA (MPI, 2015b). These dogfish are not as yet fully managed, but the management system recognizes their vulnerability and the need for explicit management. MPI (2014d) stated the following in regard to these species:*

*"(...) Orange roughy fishing is also known to interact with several species of sharks, many reported using generic codes for 'other sharks and dogfish' and 'deepwater dogfish'. It is considered that these species may have life history characteristics that make them vulnerable to overfishing. As part of the implementation of the NPOA-Sharks 2013, a two-stage risk assessment is being completed for all sharks that will guide ongoing management. A preliminary, expert based assessment should be available in late 2014 and a formal quantitative analysis will be available in 2015 to prioritise actions for species estimated to be at higher risk from fishing activities. Any additional catches of deepwater sharks will be taken into account through the risk assessment process".*

- The scores given by MRAG for this performance indicator are high: respectively 95, 80 and 80 for areas ORH3B NWCR, ORH3B ESCR and ORH7A. We are wondering whether MRAG considered that the other



commercially-retained species, oreos,<sup>23</sup> are species that were engaged through the Deepwater group in an MSC evaluation but were withdrawn to start a fishery improvement project?<sup>24</sup> MRAG's positive advice for the orange roughly suggests that the same deep-sea bottom fishery is unsustainable for oreos, which does not seem to make a lot of sense.

- Regarding deep-sea sharks, recognizing their vulnerability and the need for explicit management only is not sufficient to guarantee the sustainability for the retained species.

#### Performance Indicator 2.4.2.

This performance indicator aims to evaluate whether there is *"a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types"*.

It is acknowledged in the PCDR that: *"In the New Zealand Territorial Sea (TS) and EEZ there are substantial areas closed to bottom fishing, including marine reserves, marine protected areas (MPAs) and large Benthic Protected Areas (BPAs) and all contribute to protecting the environment generally and from the impact of trawling" and that "the network of MPAs and BPAs, the representativeness of habitat they encompass, and the restrictions on bottom trawling they include within the UoC areas and the bioregion as a whole comprise at least a partial strategy that is expected to achieve the Habitat Outcome 8o level of performance or above."*

- The score given by MRAG for this performance indicator is 85. We would like to question this scoring given the results of an analysis of the distribution of benthic habitat protection measures adopted by quota-owning industry sectors in New Zealand, Alaska and the Indian Ocean. Conclusions of this study suggest that *"protection of both benthic ecosystems and essential fish habitats are marginal at best when quota owners have primacy in determining the boundaries of BT closures"*, since the majority of the areas in these three regions may not contain vulnerable marine ecosystems and do not have high abundance of commercially important species. In particular, the authors noted that *"about 65% of New Zealand's EEZ is in water more than 1500 m deep and 40% of those deep waters are within the BPAs. Looked at another way, 82.3% of the 1.1 million km<sup>2</sup> of deep-sea bottom set aside as BPAs are in water that is too deep to fish."*<sup>25</sup> **Therefore, we fear that the presence of BPA in itself does not seem to be a powerful enough argument to give a score of 85 to this performance indicator, and we believe that more studies should be conducted in order to ensure that protection measures are not taken on the basis of quota-owners' best interests, but on the interest of the general public.**

#### Performance Indicator 3.1.1

<sup>23</sup> Up to 62,5% of smooth oreo in the retained species in the area ORH3B East and South Chatham Rise.

<sup>24</sup> <http://deepwatergroup.org/species/oreo/oreo-fisheries-improvement-projects/>

<sup>25</sup> Rieser, *et al.* (2013) Trawl fisheries, catch shares and the protection of benthic marine ecosystems: Has ownership generated incentives for seafloor stewardship? Marine Policy 40: 75-83.



This performance indicator aims to evaluate whether *"the management system exists within an appropriate legal and/or customary framework which ensures that it: is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and incorporates an appropriate dispute resolution framework."*

The PCDR explicitly uses the Intertek rationale as a base for the orange roughy scores for New Zealand hoki, hake, and ling *"in order to ensure harmonization"*:

*"MPI is responsible for the administration of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992, which implements the 1992 Fisheries Deed of Settlement under which historical Treaty of Waitangi claims relating to commercial fisheries have been fully and finally settled. The Ministry is also responsible for the Maori Fisheries Act 2004, which provides that the Crown allocates 20% of quota for any new quota management stocks brought into the QMS to the Treaty of Waitangi Fisheries commission. For non-commercial fisheries, the Kaimoana Customary Fishing Regulations 1998 and the Fisheries (South Island Customary Fishing) Regulations 1998 strengthen some of the rights of Tangata Whenua to manage their fisheries.*

*These regulations let iwi and hapu manage their non-commercial fishing in a way that best fits their local practices, without having a major effect on the fishing rights of others. When the government sets the total catch limits for fisheries each year, it allows for this customary use of fisheries before allocating commercial quotas. The management system therefore has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2. This meets the SG60, SG80, and SG100.*

*References: Fisheries Act 1996; DWG Partnership 2010; Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 Deed of Settlement 1992; Maori Fisheries Act 2004; Customary Fisheries Regulations 1998; MFish 2009a; Intertek 2014a, b and c"*

- The score given by MRAG for this performance indicator is 100, although the references only include institutional texts and are based upon a previous deep-sea fishery assessment. We regret that no scientific input from sociologists or anthropologists is used here. Although we do not have the time for an in-depth study, we would like to quote Dr Howard Schiffman, Director and Clinical Associate Professor at the New York University in his attempt to broaden the scope of the question of the allocation of quotas to Maori populations as an argument for appropriate ethical management.

*"The native Maori population, understandably and rightfully, has a strong influence in New Zealand's commercial fisheries. The Maori fought hard to realize rights to New Zealand fisheries promised to them in 1840. While all [South Pacific Regional Fisheries Management Organization] Parties must be sensitive to this historical fact, a balance must be found between the exercise of these rights and achieving conservation objectives. The use of bottom-trawling to harvest Orange Roughy, with its highly destructive effects on seamounts, forces this issue like no other. Significantly, the Maori never harvested the Orange Roughy, a deep sea species, as part of its traditional catch. Bottom trawling is a modern fishing method. Whether the designation of vulnerable marine ecosystems is sufficient to address the impacts of bottom trawling, as highlighted by the UN General Assembly in Resolution 61-105, is still very much an open question. A precautionary approach seems appropriate since so little is known*



about the ecology of seamounts. Reflection upon the SPRFMO Interim Measures adopted thus far to address bottom-trawling suggests the SPRFMO proceeds from the assumption that bottom trawling can be deployed sustainably. Given its destructive effects, this is a questionable assumption at best."<sup>26</sup>

#### Performance indicator 3.1.4

This performance indicator aims to evaluate whether *"the management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing"*.

The PCDR explains that there are no public subsidies to the fishing industry in New Zealand although:

- The score given by MRAG for this performance indicator is 90 and not 100 because: *"There do not appear to be explicit incentives and encouragement not to catch marine mammals and protected species, i.e. there is no positive feedback for those not catching these species. The management system does not explicitly consider incentives in a regular review of management policy or procedures to ensure they not contribute to unsustainable fishing practices."* Although incentives and encouragement not to catch marine mammals and protected species can certainly be beneficial onboard bottom-trawlers, the impacts of the management system in a broader sense are not reviewed here. We are concerned about the potential indirect effects of the ITQ program on the social and environmental aspects of sustainability. Since the 1980's, New Zealand has converted all its commercial fisheries to a quota-owning system by conveying to fishing companies property rights in percentage shares of the annual catch quotas, set separately for individual fish stocks.<sup>27</sup> The QMS and the use of ITQs is considered in the PCDR as providing *"stability and security for quota owners and hence incentives for sustainable utilisation (Fisheries Act)." It is however argued by several scholars that the "private ownership promotes stewardship" thesis of ITQs is a flawed rationale, and that on the contrary privatization leads to concentration of fishing rights in the hands of a few companies, with direct negative consequences for the small-scale fleets and communities, and indirect consequences for the environment since the capitalization of the fleet results in the few boats left using the most effective gears to catch fish: bottom trawls. In this case, economic sustainability seems to lead to lower environmental standards with a sector using a highly destructive fishing gear.*

Although some argue that private fishing quotas help align the interests of the fishing industry with those of the greater public,<sup>28</sup> it seems that market-based instruments are not designed to address the ecological costs of intensive fishing. In the case of setting the Benthic Protection Areas mentioned above, this would be because *"the fishing industry has an incentive to prevent managers from adopting spatial closures or to ensure they put them where they impose the least cost to industry"*.<sup>29</sup>

<sup>26</sup> Schiffman (2013) The South Pacific Regional Fisheries Management Organization (SPRFMO): an improved model of decision-making for fisheries conservation? J Environ Stud Sci 3: 209-216.

<sup>27</sup> Gibbs (2008) The historical development of fisheries in New Zealand with respect to sustainable development principles. The Electronic Journal of Sustainable Development. 1(2) : 1-11. Available at : [http://www.ejsd.co/public/journal\\_article/7](http://www.ejsd.co/public/journal_article/7)

<sup>28</sup> Helson, et al. (2010) Private rights, public benefits: Industry-driven seabed protection. Marine Policy 34: 557-566.

<sup>29</sup> Ibid. Rieser, et al. (2013).



**In conclusion**, we find particularly inconsistent to grant a positive advice for the certification of the NZ orange roughly fishery given that:

- **The use of deep-sea bottom trawling as a fishing gear is widely recognized as destructive.** The MSC policy is that no fishing gear should be denied access to evaluation except for destructive methods, which, according to MSC standards, only include dynamite and poison fishing. Given the extensive scientific background demonstrating the tremendous impacts of bottom trawling on deep-sea habitats, we pledge that fisheries using bottom trawls gear below 600m should not be entitled to access the MSC assessment/certification process.
- **There is high uncertainty for many parameters and performance indicators assessing the sustainability of this fishery.** Granting a “conditional” certification would be a lie to consumers, who will be lead to believe everything is fine with this fishery. Consumers are not supposed to be experts of the complex MSC certification conditionality and will therefore not understand that the fishery has not yet reached "sustainability". Such discounted certification will bring much discredit to the auditing process, to the Marine Stewardship Council and eco-labeling in general.



17 June 2016

Ms Melanie Carter

Independent Adjudicator

Email: [NZorangeroughyobjection@msc.org](mailto:NZorangeroughyobjection@msc.org)

Dear Ms Carter

Please find attached our response to your request of 10 June 2016.

This response is being filed on behalf of Greenpeace New Zealand, Inc, the Deep Sea Conservation Coalition, Inc., Bloom Association and Environment and Conservation Organisations of New Zealand, Inc.

As before, correspondence can be sent to [duncanc@globelaw.com](mailto:duncanc@globelaw.com).

Yours sincerely

Duncan Currie

Attachment

**Responses by Deep Sea Conservation Coalition, Inc., Greenpeace New Zealand, Inc., Environment and Conservation Organisations of New Zealand, Inc. and BLOOM Association**

17 June 2016

**a) Please can you verify whether there are references to information that post-dates the PCDR as this will not be admissible.**

1. The DSCC *et al* notice of objection referred to a paper, G. Simmons *et al*, "Reconstruction of marine fisheries catches for New Zealand (1950-2010)", 2016 in page 45 ff. That paper was not referred to by the CAB. The notice of objection also referred to an internal 2013 Ministry of Primary Industries (MPI) memorandum which was cited in the Simmons *et al* paper, but that memorandum was not referred to by the CAB either. A working version of the paper was available on the SeaAroundUs website in 2015. Seafood New Zealand were aware of its impending release and contents on 20 March 2015 as reported in its newsletter.

[http://www.seafoodnewzealand.org.nz/fileadmin/documents/Friday\\_update/2015/Friday-Update-20-March-2015.pdf](http://www.seafoodnewzealand.org.nz/fileadmin/documents/Friday_update/2015/Friday-Update-20-March-2015.pdf) and again on February 12

2016:

[http://www.seafoodnewzealand.org.nz/fileadmin/documents/Friday\\_update/2015/Friday-Update-20-March-2015.pdf](http://www.seafoodnewzealand.org.nz/fileadmin/documents/Friday_update/2015/Friday-Update-20-March-2015.pdf).

A press release was issued on 17 May: <http://www.seaaroundus.org/new-zealand-fishery-catch-estimated-at-2-7-times-more-than-reported-study/>.

- a. Under CD 2.6.5 of the Objections Procedure, the Independent Adjudicator shall evaluate objections solely on the basis of:  
CD2.6.5.1 The record, which shall include and be limited to:[...] b.  
The notice of objection. Therefore in our submission, both the Simmons paper and the MPI memorandum are referred to in the notice of objection and thus constitute part of the record.
- b. In addition, DSCC *et al* listed the Simmons paper and MPI objection as additional information on page 48 of the Notice of Objection. Under CD 2.6.5.2 the Independent Adjudicator shall evaluate objections solely on the basis of ... [a]ny additional information, not forming part of the record, that is relevant to matters accepted in the notice of objection and the circumstances at the date of the scoring of the fishery that:
  - a. Was known or should reasonably have been known to any party to the assessment process, and
  - b. Should reasonably have been made available to the CAB during the assessment process, and
  - c. If considered, could have made a material difference to the outcome of the assessment.
- c. DSCC *et al* specified, as was required in CD 2.3.5, in sufficient detail, then [n]ature of the additional information that it is asserted should reasonably have been made available to the CAB, (CD2.3.5.1) and [r]easons why it is considered that the material, if considered, could have made a material difference to the outcome of the assessment. (CD2.3.5.2).

- d. DSCC *et al* submit that for both these reasons, both the Simmons paper and MPI memorandum both form part of the record and must be considered by the Independent Adjudicator.
2. One paper cited by DSCC *et al* on page 20, Levin Lisa Ann, Baco Amy R., Bowden David, Colaço Ana, Cordes Erik, Cunha Marina R., Demopoulos Amanda, Gobin Judith, Grupe Benjamin, Le Jennifer, Metaxas Anna, Netburn Amanda, Rouse Greg W, Thurber Andrew R, Tunnicliffe Verena, Van Dover Cindy, Vanreusel Ann, Watling Les. Hydrothermal Vents and Methane Seeps: Rethinking the Sphere of Influence. 3 *Frontiers in Marine Science*. 19 May 2016. At <http://journal.frontiersin.org/article/10.3389/fmars.2016.00072/full>. However a draft manuscript was circulated on January 2, 2016.

***Part Four: there is nothing under this section. Please supply details of arguments and supporting evidence or confirm there is no intention to object under this heading.***

## **PART FOUR: OBJECTION PURSUANT TO PARAGRAPH CD2.7.2.1**

There is an overlap between the objections in Part Six and Part Four. Part Four relates to (a) procedures and omitted or incorrectly followed by the CAB and (b) other irregularities in the assessment process, while Part Six details the relevant performance indicators. In the interests of avoiding duplication, our objections were listed in Part Six. Had the CAB followed MSC procedures, they would have scored the relevant PIs more closely to those suggested in our objection in Part Six, rather than the results in the assessment. To this extent, and to avoid duplication, we adopt the WWF objection in section 4, which is hereby incorporated by reference. In addition, we have added one more, which is referenced in Part Six.

To the extent possible, to avoid duplication and save costs, DSCC *et al* will coordinate with WWF and any other objectors.

### **4.1 Please identify:**

- a) ***the procedure(s) that you or your organisation believe were omitted or incorrectly followed by the conformity assessment body in the conduct of this assessment and the relationship of these matters to the MSC's procedural rules, as set out in the MSC Scheme Requirements that were in force at the time of the assessment; and/or***
- b) ***any other irregularity in the fishery assessment process that you or your organisation believe made a material difference to the fairness of the assessment.***

By way of explanation:

### ***Procedural Error #1: Serious or Irreversible harm***

The CAB misinterpreted and misapplied the SC definition of "Serious or Irreversible harm" (SolH) in their assessment of the habitat component. This procedural error

made a material difference to the fairness of the assessment in relation to scoring of PI 2.4.1.

***Procedural Error #2: Serious or Irreversible harm***

The MRAG assessment team took the wrong view of historic data by under-emphasizing the historical record of trawl impacts to deep sea habitats.

***Procedural Error #3 – Key scoring information was confidential***

The practice of using confidential information to score a fishery lacks transparency and runs contrary to MSC rules. Further, it puts stakeholders at a significant disadvantage because we are unable to properly review the logic used by the team in their conclusions.

***Procedural Error #4 – Clear separation of fact from opinion***

MRAG often, it seems, also placed their own team's views in front of the opinions of leading experts. It is a curious role reversal because an assessment team is tasked with assessing the best available science - not refuting

***Procedural Error #5 – Default tree: clarification changes intent at SG100***

It is inconsistent of the CAB to use the SG100 guidepost from the new standard (or use a "clarification" that has the same effect). This action does not follow MSC rules. CABs are not allowed to swap trees after the start of the assessment (27.8) - certainly not at this late stage in the process. This unfair action made a material difference to the scoring of PI 2.4.2.

***Procedural Error #6 – Forest for the trees: biogenic structure***

MRAG did not give explicit consideration to how trawling may impact upon the structure of deep water habitats. This materially affected the fairness of the assessment and led to unreasonable scoring of the habitat outcome PI.

***Procedural Error #7 – Kermadec: the appropriate bioregion?***

By including large areas that extend beyond the normal operating range of the orange roughy fishery in calculations of the impact of the fishery, the CAB distorted or minimized the proportion of the bioregion that appears to be impacted by the fishery and thereby erroneously 'credited' the fishery for not impacting habitat areas and types that are beyond fishable depths.

***Procedural Concern #8 –Ecosystem services?***

The team has ignored a growing body of scientific literature that highlights the value of ecosystem services provided by deep sea ecosystems despite our limited understanding of the subject area.

***Procedural Error #9 – Change to unit of certification***

During the fishery assessment the CAB changed the unit of certification (UoC)\* boundary for ORH3B ESCR.

***Procedural Error #10 – Key information: Description of fishing gear and method***

The PCDR and Final Report do not give a description of the fishing gear and practice used by the fishing operation.

### **Additional Procedural Error: Apparent Bias and Predetermination**

The CAB consistently adopted an interpretation favourable to the clients, and ignored or misinterpreted relevant science. The DSCC *et al* objection detailed a number of instances where the assessment took a cheerleading approach rather than dispassionate analysis (e.g page 46). Other instances of bias appear in page 34, where it was shown that the issue is where the bottom trawlers are fishing, not where they are not fishing, and that arguments that the vast majority of the SPRFMO Convention Area (>98%) is not fishable, being deeper than 2,000 m are entirely beside the point.

Similarly, there are failures to analyse the international requirements (page 35 objection) followed by a finding that the fishery satisfies international requirements.

In the responses to objections, the CAB failed to objectively and dispassionately analyse the many objections and have an open mind, and instead refuted them, resulting in repeatedly coming to the drum-beat like conclusion at least 39 times that “No change in score resulted.” In only two places were scores changed (PI 2.1.2e finning and PI 2.3.2 ETP corals. But in the case of corals, the score was reduced from 100 to 80, but without further discussion in Volume 2 of why it met a score of 80 or why a score of below 60 was not given.)

The CAB should have been impartial (ISO Guide 65 clause 4.2(a) and (e). (e) requires that the CAB has a “documented structure which safeguards impartiality including provisions to ensure the impartiality of the certification body; (f) ensure that each decision on certification is taken by a person(s) different from those who carried out the evaluation, and (n) have formal rules and structures for the appointment and operation of any committees which are involved in the certification process; such committees shall be free from any commercial, financial and other pressures that might influence decisions.) The CAB should take (ISO Guide 65 4.3) “all steps necessary” to evaluate conformance with the relevant product standards according to the requirements of [sic] specific product certification system.

### ***4.2 Please state why you or your organisation believes that the failure to follow procedures by the conformity assessment body has significantly affected the result of the Determination such that the Determination should be altered?***

The details on why these failures significantly altered the result of the Determination so that it should be altered are given in Part Six.

***Part Five: The reasoning and rationale here is very brief. Please either supplement with argument and evidence (including references, page and paragraph numbers) or cross refer to relevant arguments/evidence cited elsewhere in the NOO. Details as to both why a) the conditions cannot be fulfilled and b) the setting of the conditions was arbitrary or unreasonable are required.***

Prolixity does not yield clarity. The 243 page CAB assessment shows this. There are multiple redundancies and duplications. In addition, DSCC *et al* note that MRAG has been working on and drafting this assessment from July 2014. On the other hand, objectors are given 15 days

to respond. In any litigation system of which DSCC *et al* are aware, a Notice of Appeal or similar is filed within a relatively short period, and Statements of Evidence are filed later. In the MSC system, in effect both are required to be filed together, within 15 days. This places an undue burden on submitters. Thus in DSCC *et al*'s objection by necessity, responses are brief and to the point. Necessary additional evidence can adduced before and at the hearing.

With regard to setting conditions, the MSC guidelines state:

27.11.1.3 The CAB shall draft conditions to result in improved performance to at least the 80 level within a period set by the CAB but no longer than the term of the certification, subject to 27.11.8.

27.11.1.4 The CAB shall draft conditions to specify milestones that spell out:

- a. The measurable improvements and outcomes (using quantitative metrics) expected each year.
- b. The specific timeframes over which the milestones and the whole condition must be met.
- c. The outcome and score that shall be achieved at any interim milestones.

Our objections to the conditions are as follows.

**Condition 1: Condition 1.1.1b**

**By the end of the certification period, provide evidence that the ESCR stock is at or fluctuating around its target reference point. (page 120)**

It is unreasonable that a fishery which has been depleted by fishing would be certified as sustainable, especially for a species that has such a high vulnerability to fishing, and has been serially depleted, population by population, globally. Fishing should stop until sound stock assessments show the population size has recovered to above scientifically derived and precautionary target reference points. Such a condition means that a clearly overfished fishery targeting a stock below what are already unsound biomass reference points has been recommended for certification as 'sustainable'.

The proposed condition, rather than being a condition to "result" in improved performance, (27.11.1.3) simply passively hopes, or assumes, that it will do so. It does nothing to achieve that result. There is no measureable improvement or outcome expected each year, (27.11.1.4) and the only timeframe is the end of certification period.

The condition requires no steps or measures to be taken so MSC can ensure that this recovery happens. Nor are there requirements for submission of evidence that the management has followed scientific advice and the fishery has complied with this management, and there are no waypoints for evidence of recovery.

**Condition 2: 2.3.1 SI b (page 220)**

**By the end of the certification period, the direct effects of ORH fishing must be highly unlikely to create unacceptable impacts to ETP coral species.**

This condition will allow damage to coral species to continue until the end of the certification period. It is unreasonable that a fishery damages ETP coral would be certified as sustainable. Fishing should stop until there are no significant adverse impacts on vulnerable marine ecosystems, as is required by the 2009 FAO Guidelines.

As with condition 1, the proposed condition, rather than being a condition to “result” in improved performance, (27.11.1.3) simply passively hopes, or assumes, that it will do so. It does nothing to achieve that result. There is no measurable improvement or outcome expected each year, (27.11.1.4) and the only timeframe is the end of certification period.

As was stated in WWF’s Notice of Objection (page 27), “Condition 2 does not specify milestones that set out measurable improvements in terms of a direct demonstration that the fishery implements requirements for the protection and rebuilding of ETP corals by reducing coral mortality, ” and “CAB must formulate Condition 2 to specify “demonstration that requirements for protection and rebuilding are being achieved.”

The condition is not even a band aid: it is a fig leaf. This condition amounts to closing one’s eyes and hoping that the damage is not unacceptable by the end of the certification period.

### **Condition 3: 2.3.3 SI b**

**By the end of the certification period, information must be sufficient to determine whether the fishery may be a threat to protection and recovery of ETP coral species.**

This condition acknowledges that there is insufficient information to determine whether the fishery may be a threat to protection and recovery of ETP coral species. It should therefore not be certified. Fishing should stop until there are no significant adverse impacts on vulnerable marine ecosystems, as is required by the 2009 FAO Guidelines.

As with condition 1 and 2, the proposed condition, rather than being a condition to “result” in improved performance, (27.11.1.3) simply passively hopes, or assumes, that it will do so. It does nothing to achieve that result. There is no measurable improvement or outcome expected each year, (27.11.1.4) and the only timeframe is the end of certification period.

This condition will be fulfilled if information is sufficient to determine that the fishery is indeed a threat. The damage will have been done. On the other hand, there are no milestones or measurable improvements required. This condition amounts to closing one’s eyes and hoping the information is available by the end of the certification period. As such it is unreasonable.

In addition, the reasons in WWF’s Notice of Objection “*Error of Condition Setting #2 – Threat to ETP species: sufficient information*” on page 29 are included by reference.

**3.2.5b Condition 4 By the third annual surveillance the fisheryspecific [sic] management system must undergo occasional external review.**

There is no element of independence in this condition. “Occasional external review” is vague and unenforceable. There is no measurable improvement or outcomes (using quantitative metrics) expected each year; there is no specific timeframes over which the milestones and the whole condition must be met and there is no outcome and score that shall be achieved at any interim milestone. As such it is unreasonable.

### **Part Six:**

***In relation to certain PIs under challenge (in particular PI 1.2.3, 2.3.3, 2.5.1) I am concerned that there are factual assertions not backed up by references to specific evidence. Whilst I appreciate that the NOO covers a lot of ground, each head of objection, if accepted for consideration by me, must be determined and therefore the objectors need to put forward the relevant arguments and references in relation to each.***

PI 1.2.3

<p><i>Performance Indicator</i></p>	<p><i>PI 1.2.3 There is a robust and precautionary harvest strategy in place</i></p> <p><i>ORH3B NWCR 85</i></p> <p><i>ORH3B ESCR 85</i></p> <p><i>ORH7A 85</i></p> <p><i>Should be: below 60 (page C156; Page 133)</i></p>
<p><i>Reason</i></p>	<p>For a score of 60, the harvest strategy must be “likely to work based on prior experience or plausible argument.” Prior experience shows the opposite. As noted by the CAB, the harvest strategy is merely an agreement between industry and MPI. Therefore there can be no certainty that the MPI will set catch limits for the three stocks using the agreed HCR. The statement that “the fisheries have had previous conservative management that has led to abundance increases” is both wrong (management has not been conservative) and misleading (the vast majority of stocks have crashed to well below MSY). The statement is also at contrast with what is stated lower (“the harvest strategy is an improvement on how management advice was provided in the past.” The heavy reliance on Cordue (2014) is misplaced.</p> <p><b>References and links:</b></p> <p>There are a range of issues that MRAG has not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet even a 60 score.</p> <p>Peer reviewer 1 questioned whether the scoring could be justified.</p> <p>A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted: “Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge is [sic] decline but not consistently throughout the scoring of P2 scoring issues.”</p> <p>Only with observers on board is there sufficient information to assess by-catch rates. Reporting of non-quota management species and non-target fish species (eg corals) relies on reporting from observers.</p>

	<p>There is no guarantee the observer coverage will be 20% coverage. MPI priorities are wider than research priorities, and include enforcement and labour standards, and can priorities can change between and within years.</p> <p>The level of observer coverage is patchy in the deepwater trawl fishery (orange roughy, oreos and cardinal fish) with an average of 11% of tows observed in 2012-13. In the orange roughy target fishery 11.6% of tow were observed in 2012-13 and 13.1% in 2013-14 but observer vessel days where only half the level required for collection of representative biological information and samples (eg otoliths for ageing and length frequency) to manage the fishery and its impacts (MPI 2015a).</p> <p>There is currently no long-term planning for research and management. The 10 year research plan has been replaced with an annual research planning (MPI 2015b). The deepwater management plan term ends in June and it is unclear whether it will be replaced.</p> <p>The targets for orange roughy are arbitrary and not-precautionary: they are weaker than standards for hoki which is a much short-lived and higher productivity species. The MPI Harvest Strategy itself notes that “it is becoming increasingly difficult to justify stock targets less than 30-40% Bo (or, equivalently, removing more than 60-70% of the unfished biomass).” (Ministry of Fisheries, 2008).</p> <p>In comparison, the recovery plan for Australian orange roughy fisheries is considerably stronger, with a target of Maximum Economic yield of 48% unfished biomass. (AFMA 2014)</p> <p>Concerns about the single species nature of MSY or many reference points have lead consideration of predator and prey relationships. These ecological relationships have been important consideration in CCAMLR’s approach to fisheries management. In CCAMLR target levels have been set at 50%Bo for predator species (e.g. toothfish) and 75%Bo for prey species (egg krill or icefish) (Constable <i>et al.</i>, 2000).</p> <p>Smith <i>et al.</i>, 2011 noted that retaining stocks at higher levels (eg 75%Bo) for low trophic level species had lower ecological impacts. They noted that “halving exploitation rates would result in much lower impacts on marine ecosystems while still achieving 80% of MSY”.</p> <p>Australian Fisheries Management Authority (AFMA) 2014. Orange roughy (<i>Hoplostethus atlanticus</i>) stock rebuilding strategy. Australian Government.</p>
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	<p><a href="http://www.afma.gov.au/wp-content/uploads/2014/12/SESSF-Orange-roughy-rebuilding-strategy-2015-FINAL.pdf">http://www.afma.gov.au/wp-content/uploads/2014/12/SESSF-Orange-roughy-rebuilding-strategy-2015-FINAL.pdf</a></p> <p>Constable, A. J., de la Mare, W. K., Agnew, D. J., Everson, I., and Miller, D. 2000. Managing fisheries to conserve the Antarctic marine ecosystem: practical implementation of the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR). – ICES Journal of Marine Science, 57: 778–791.</p> <p>Ministry of Fisheries (2008) Harvest Strategy Standard for New Zealand fisheries. October 2008. 25p.</p> <p>Ministry of Primary Industry (2015a) Annual Review Report for Deepwater Fisheries for 2013/14. MPI Technical Paper No 2015/07. April 2015. 91p.</p> <p>(2015b) Annual Review Report for Deepwater Fisheries for 2014/15. MPI Technical Paper No: Prepared by the Ministry for Primary Industries. Draft November 2015.</p> <p>Ministry for Primary Industries (2015). Fisheries Assessment Plenary, May 2015: stock assessments and stock status. Compiled by the Fisheries Science Group, Ministry for Primary Industries, Wellington, New Zealand. 1477 p.</p> <p>Smith A D. M, C J. Brown, C. M. Bulman, E. A. Fulton, P. Johnson, I. C. Kaplan, H Lozano-Montes, Steven Mackinson, M Marzloff, L. J. Shannon, Y-J Shin, J. Tam (2011) Impacts of Fishing Low–Trophic Level Species on Marine Ecosystems. Science 26 Aug 2011:Vol. 333, Issue 6046, pp. 1147-1150 DOI: 10.1126/science.1209395</p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability.</p>

PI 2.3.3

<p><i>Performance Indicator</i></p>	<p>PI 2.3.3 <i>Relevant information is collected to support the management of the fishery impacts on ETP species, including: -information for the development of the management strategy;-information to assess the effectiveness of the management strategy; and – information to determine the outcome status of ETP species.</i></p> <p><i>Score: 80 – ORH7A; 75 – ESCR, NWCR</i></p> <p><i>Should be: below 60</i></p>
<p><i>Reason</i></p>	<p>For a score of 60, it must be shown that “Information is sufficient to qualitatively estimate the fishery related mortality of ETP species.”, that “information is adequate to broadly understand the impact of the fishery on ETP species.” And most importantly, that “Information is adequate to support measures to manage the impacts on ETP species”.</p> <p>The latter test is clearly not satisfied. The explanation on page 170 goes nowhere near to satisfying this test. Information adequate to support measures to manage impacts would include actual video surveys of the intended trawl tracks and samples taken. Instead, the CAB cites observers, VMS, vague ‘research surveys and other research projects’. None of these suffice. As was noted by WWF (page 38) there are no known studies specifically examining sediment mobilization by fishing gear in deep-sea fisheries and its effects...” FRvol1, p.158).</p> <p>As was noted by Consalvey <i>et al</i> (2006) “However, our knowledge of deep-sea coral fauna in the New Zealand region remains poor. Without adequate research to determine the long term vulnerability and Information Review For Protected Deep-Sea Coral Species In The New Zealand Region v biodiversity of deep-sea benthic communities, including deep-sea corals, and a better understanding of their ecology, good management practice will be hard to achieve.”</p> <p>More recently, Clark <i>et al</i> (2016) observed that “In the deep sea, however, the inherent restrictions on obtaining sufficient stock assessment or benthic habitat data (compared with nearshore shelf/slope fisheries) mean that management regimes typically operate at a low level of knowledge, and management action must occur in a highly precautionary manner”.</p>

The reasons cited in DSCC *et al*'s Notice of Objection for PI 2.3.1 apply here as well and are incorporated by reference *mutatis mutandis*.

### References and links

There is a range of issues that MRAG have not considered. A key element in information collection is the presence of MPI scientific observers on vessels.

As Peer Reviewer 2 noted:

“Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge is decline but not consistently throughout the scoring of P2 scoring issues.”

The current status of the deepwater management plan is unclear, as is the commitment to deepwater research given the end of the Deepwater Research strategy (MPI 2015b).

There is no population management plan for protected species and the provisions of the Wildlife Act and the Marine Mammals Protection Act have been found impossible to implement to limit the impact on ETP species.

There is no strategy for most ETP species. The exceptions are the National Plan of Action on Sharks and Seabirds but these have yet to be fully implemented. There is no strategy for marine mammals capture or benthic species including corals.

The BPA is not a strategy to protect ETP corals: rather it is a strategy to avoid protecting corals as they were established in areas where little or no fishing was taking place and most was much deeper than trawling depths. (Rieser *et al* 2013)

### References

BirdLife International 2012. *Thalassarche salvini*. The IUCN Red List of Threatened Species. Version 2015.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 27 July 2015.

Malcolm R. Clark, Franziska Althaus, Thomas A. Schlacher, Alan Williams, David A. Bowden, and Ashley A. Rowden, The impacts of deep-sea fisheries on benthic communities: a review. *ICES Journal of Marine Science* (2016), 73 (Supplement 1), i51 –i69. doi:10.1093/icesjms/fsv123

	<p>Consalvey, M., MacKay, K. and Tracey, D. (2006) Information review for protected deep-sea coral species in the New Zealand region. NIWA Client Report: WLG2006-85. NIWA Project: DOC06307. November 2006. 58 p.</p> <p>Ministry of Primary Industry (2015a) Annual Review Report for Deepwater Fisheries for 2013/14. MPI Technical Paper No 2015/07. April 2015. 91p.</p> <p>Annual Review Report for Deepwater Fisheries for 2014/15. (2015b) MPI Technical Paper No: Prepared by the Ministry for Primary Industries. Draft November 2015.</p> <p>Ministry of Primary Industry (2013) National Plan of Action to reduce the incidental catch of seabird in New Zealand. 59p.</p> <p>Rieser, A., Watling, L., Guinotte, J., "Trawl fisheries, catch shares and the protection of benthic marine ecosystems: Has ownership generated incentives for seafloor stewardship?" Marine Policy 2013 75-83.</p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability. Significant damage is caused to vulnerable marine ecosystems by bottom trawling.</p>

**PI 2.5.1**

<p><i>Performance Indicator</i></p>	<p>PI 2.5.1 <i>The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function</i></p> <p><i>Score: 100</i></p>
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	<p><i>Should be: below 60</i></p>
<p><i>Reason</i></p>	<p>For a score of 60, the CAB would have to find that “The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.”</p> <p>CB 3.17.3 explains that “The team should note that “key” ecosystem elements are the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics, and are considered relative to the scale and intensity of the fishery. They are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity.</p> <p>The CAB misinterpreted this to mean ecosystem services related to orange roughy. Clearly the benthic structures provide crucial nature and dynamics.</p> <p>The reasons in cited DSCC <i>et al</i>'s Notice of Objection for PI 2.3.1 apply here as well and are incorporated by reference <i>mutatis mutandis</i>.</p> <p>The relevant grounds in WWF's Notice of Objection are also include by reference, including:</p> <p><i>Procedural Error #2 – A complete historical perspective</i> (Pages 11, 12)</p> <p><i>Procedural Concern #8 –Ecosystem services?</i> (Pages 23, 24)</p> <p><i>Scoring Error #8 – Status of benthic ecosystem was not assessed</i> (Pages 44-46)</p> <p>The following observation applies to all matters with respect to Principle 2. CB27.4.4.1 (page C106) Provides that the CAB shall verify that the fishery is conforming to Principle 3, Criterion A: A fishery shall not be conducted under a controversial unilateral exemption to an international agreement.</p> <p>This is exactly what is occurring with respect to fishing in waters under the management of SPRFMO. The New Zealand government secured an exemption to CMM 2.03 (now 4.03): rather than closing all areas where VMEs are known or likely to occur unless fisheries are assessed for their impacts and can be managed to prevent SAIs on VMEs (as is called for in the UNGA resolutions), New Zealand has chosen to instead close only 'lightly fished' areas, and allow unrestricted fishing on 'heavily fished' areas with no move-on rule. The move-on rule is only applicable to about 30% of the high seas areas where</p>

	<p>New Zealand vessels are currently permitted to bottom trawl fish. Bottom fishing in the 'heavily fished' blocks of the New Zealand footprint is not covered by the rule. Paragraph (h) of paragraph 8 reads that "h) notwithstanding sub-paragraphs (d) and (g) above, a Member or a CNCP may exclude part of its bottom fishing footprint from the application of sub-paragraph (g) by dividing its footprint into areas open to bottom fishing, areas closed to bottom fishing and areas to which sub-paragraph (g) would apply. These exclusions must have the purpose of preventing significant adverse impacts to VMEs." This exception is (i) controversial: It has been criticized by DSCC and other NGOs; (ii) unilateral: it has arisen from the actions of New Zealand alone; it is (iii) an exemption from the rest of subparagraphs (d) and (g) of paragraph 8; and is an international agreement with a direct mandate for sustainable management of resources affected by the fishery.</p> <p>New Zealand vessels are permitted to bottom trawl fish in over half – 54.6% – of the entire seabed area in the SPRFMO area at depths between 200 and 800 meters, an area equal to approximately 23,533 km<sup>2</sup>. (These figures may have altered slightly as a result of changes to the open and closed footprint blocks reported by New Zealand in its report to SPRFMO in 2015.) (Source: Penney <i>et al</i> 2013)</p> <p>See Clark <i>et al</i> (2015): Deep sea fisheries were recognized as causing substantial ecological impacts in several areas of operation, and probably globally (Koslow <i>et al.</i>, 2001; Hall-Spencer <i>et al.</i>, 2002; Waller <i>et al.</i>, 2007; Althaus <i>et al.</i>, 2009; Clark and Rowden, 2009). Halpern <i>et al.</i> (2007) identified 'demersal, destructive fishing' (e.g. demersal trawl) as the most consistently high-scoring threat to oceanic deep-sea ecosystems. (i52)</p> <p>On seamounts that have been the target of fisheries for several decades in New Zealand and Australia, Williams <i>et al.</i> (2010) attempted to measure actual recovery rates of the fauna: they found no consistent and clear signal of recovery in the mega-benthos 5–10 years after fishing had ceased, suggesting that any recovery is likely to be very prolonged. (i62)</p> <p>The clear message from these biological data is that the overwhelming majority of species that are commonly impacted grow very slowly and have very high longevity. These traits of slow growth and great age translate into estimates of recovery times that, for many communities, are likely to span centuries to millennia. Hence, very slow recovery is expected from any disturbance, not just by fishing but also other industries (e.g. mining of ferromanganese crusts from seamounts) that removes the attached fauna (Schlacher <i>et al.</i>, 2014). Formation of new habitat could operate at geological time-scales (centuries or longer). (i64)</p>
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	<p>This review has identified a number of studies demonstrating that direct and indirect fishing disturbances can severely impact deep-sea benthos by reducing diversity and abundance. (i64)</p> <p>Deep-sea benthic communities have the collective properties of high susceptibility and low recoverability, and hence it is unrealistic to expect them to recover from ongoing fishing impacts, or in the time-spans (years) typically applied to management planning. Restoration concepts are unachievable in the short term, and will be prohibitively expensive (see Van Dover <i>et al.</i>, 2014). (i64)</p> <p>Clark <i>et al</i> also observes that fishery closures are one method but “The effectiveness of such deep-sea fishing closures is, usually, yet to be formally established.</p> <p>One of the most thorough evaluations conducted to date suggests that the spatial closures instigated by New Zealand on the Louisville Seamount Chain, Lord Howe Rise, Challenger Plateau, and West Norfolk Ridge are suboptimal for the protection of VMEs and alternative closures would better balance protection against economic loss to fishers from closure of historically fished areas (Penney and Guinotte, 2013).”</p> <p>Ecological communities of seamounts can be considered highly disturbed by bottom trawling in cases where they are composed of slow-growing, fragile and long-lived species, and ancient accumulations of stony coral thickets. (Williams <i>et al</i> 2010)</p> <p>Given the known impacts of trawling on coral and other sensitive benthic species and the inadequate information on habitats, variation in coral diversity between features, and that data collection coverage is patchy, it is likely that the fishery is causing serious and irreversible harm to ecosystem structure and function.</p> <p>A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted: “Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge a [sic] decline but not consistently throughout the scoring of P2 scoring issues.”</p> <p>The impact of bottom trawling on corals is likely to be significant with high sensitivity to trawling and long recovery times in the order of decades if not centuries.</p> <p>“Tracey <i>et al</i> (2011[a]) analysed the distribution of nine groups of protected corals based on bycatch records from observed trawl effort from 2007–08 to 2009–10, primarily from 800–1000 m depth. For the orange roughy target</p>
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	<p>fishery, about 10% of observed tows in FMAs 4 and 6 included coral bycatch” (MPI 2014).</p> <p>Tracey <i>et al</i> (2012) noted in a study of a seamount complex on the North Chatham Rise which had been targeted for orange roughy – “The study showed that fish assemblages on seamounts can vary over very small spatial scales, in the order of several km. However, patterns of species similarity and abundance were inconsistent across the seamounts examined, and these results add to a growing literature suggesting that faunal communities on seamounts may be populated from a broad regional species pool, yet show considerable variation on individual seamounts.”</p> <p>The impacts of trawling on seamounts and the potential recovery time of the diversity that is there could take centuries to recovery from just one trawl. As Clark <i>et al</i> (2015) observed: “many deep-sea invertebrates are exceptionally long-lived and grow extremely slowly: these biological attributes mean that the recovery capacity of the benthos is highly limited and prolonged, predicted to take decades to centuries after fishing has ceased.” Protected deep sea corals are amongst those long-lived invertebrates. (Tracey 2003).</p> <p>Reporting of non-quota management species and non-target fish species (eg corals) relies on reporting from observers.</p> <p>With respect to ocean acidification, there is particular concern for deep-sea habitats such as seamounts, which can support structural reef-like habitat composed of stony corals (Tracey 2011 b). "A shoaling carbonate saturation horizon could push such biogenic structures to the tops of seamounts, or cause widespread die-back (e.g., Thresher <i>et al</i> 2012). This has important implications for the structure and function of benthic communities." (MPI 2014)</p> <p><b>References</b></p> <p>Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2015) The impacts of deep-sea fisheries on benthic communities: a review. – ICES Journal of Marine Science, doi: 10.1093/icesjms/fsv123</p> <p>Fisheries Research and Development Corporation (FRDC)/National Climate Change Adaptation Research Fund (NCCARF) Report 2010/510, 68 p.</p> <p>Ministry for Primary Industries (2014). Aquatic Environment and Biodiversity Annual Review 2014. Compiled by the Fisheries Management Science Team, Ministry for Primary Industries, Wellington, New Zealand. 560 p.</p>
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	<p>Penny, A. (2013). Spatial analysis of Australian and New Zealand historical bottom trawl fishing effort in the Convention Area of the SPRFMO (SPRFMO Doc. SC-01-20), p. 1.</p> <p>Thresher, R E; Guinotte, J; Matear, R; Fallon, S (2012) Adapting to the effects of climate change on Australia's deep marine reserves.</p> <p>Tracey, D., Neil, H., Gordon, D., and O'Shea, S. (2003) Chronicles of the deep: ageing deep-sea corals in New Zealand waters. <i>Water and Atmosphere</i>, 11: 22–24.</p> <p>Tracey D M, Bull B, Clark M R, and Mackay K A (2004) Fish species composition on seamounts and adjacent slope in New Zealand waters. <i>NZ J of Marine and Freshwater Research</i>. 38:163-182.</p> <p>Tracey, D; Baird, S J; Sanders, B M; Smith, M H (2011) Distribution of protected corals in relation to fishing effort and assessment of accuracy of observer identification. NIWA Client Report No: WLG2011-33 prepared for Department of Conservation, Wellington. 74 p. (Tracey 2011 a)</p> <p>Tracey, D M; Rowden, A A; Mackay, K A; Compton, T (2011) Habitat-forming cold-water corals show affinity for seamounts in the New Zealand region. <i>Marine Ecology Progress Series</i> 430: 1–22. (Tracey 2011 b)</p> <p>Tracey DM, Clark MR, Anderson OF, Kim SW (2012) Deep-Sea Fish Distribution Varies between Seamounts: Results from a Seamount Complex off New Zealand. <i>PLoS ONE</i> 7(6): e36897. doi:10.1371/journal.pone.0036897</p> <p>Tracey, D. &amp; Mills, S. (2014). Identification of benthic invertebrate samples from research trawls and observer trips 2013-2014. Final Research Report for Ministry of Primary Industries (Project DAE201001C). 61 p</p> <p>Williams, A., Schlacher, T. A., Rowden, A. A., Althaus, F., Clark, M. R., Bowden, D. A., Stewart, R., <i>et al.</i> 2010. Seamount megabenthic assemblages fail to recover from trawling impacts. <i>Marine Ecology</i>, 31 (Suppl. 1): 183– 199.</p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p>

	<p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability. Significant damage is caused to vulnerable marine ecosystems by bottom trawling.</p>
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***Please provide the submissions of ECO at PCDR.***

Done (attached).

An ECO representative participated in the site visit undertaken by MRAG on 31 July 2014. At this stage the unit of certification (UOC) was uncertain so it was unclear which fisheries were involved. This was not determined until October 2014 (Email Bob Trumble MRAG, 15-10-2014).

On the certification: This certification was undertaken using MSC certification requirements v1.3. However, DSCC *et al* understand that there was nearly an 18 month gap between the site visit and the publication of the Draft Report. Under Ver 2.0 if a “9 month pause between site visit and PCDR publication; in which case FCR v2.0 (process and standard) shall be applied” (p137, Ver2.0). In this case, version 2.0 should have been applied.

***Part Seven:***

***Please specify what specific due diligence steps you say the certification body should have carried out to bring the specified additional information to their attention;***

The deepwater fishing industry already knew about the expected Simmons report, even for 11 months: Seafood New Zealand were aware of its impending release and contents on 20 March 2015. [http://www.seafoodnewzealand.org.nz/fileadmin/documents/Friday\\_update/2015/Friday-Update-20-March-2015.pdf](http://www.seafoodnewzealand.org.nz/fileadmin/documents/Friday_update/2015/Friday-Update-20-March-2015.pdf) and again on February 12 2016: [http://www.seafoodnewzealand.org.nz/fileadmin/documents/Friday\\_update/2015/Friday-Update-20-March-2015.pdf](http://www.seafoodnewzealand.org.nz/fileadmin/documents/Friday_update/2015/Friday-Update-20-March-2015.pdf).

If the CAB did not even hear the rumours that the data, paper or memo existed, when the fishing industry clearly had known for over a year, it clearly had not exercised due diligence. It should have asked the right questions of the NZ MPI and the fishing industry clients, and should have conducted a google search, which revealed the above two documents in a 30 second search by the objectors. There is a 2015 working paper available at <https://s3-us-west-2.amazonaws.com/legacy.seaaroundus/doc/Researcher+Publications/dpauly/PDF/2015/Working+Papers/PreliminaryReconstructionNewZealand.pdf>. Moreover, Daniel Pauly published in January 2015 an article on global catch reconstruction which

showed that the New Zealand data existed and was in the public domain: Daniel Pauley and Dirk Zeller, "Catch reconstructions reveal that global marine fisheries catches are higher than reported and declining:" 7 Nature Communications (19 January 2016), at <http://www.nature.com/ncomms/2016/160119/ncomms10244/full/ncomms10244.html#f2>.

***Please specify what specific steps you say the certification body should have carried out to obtain the additional information to their attention;***

1. Asked the DWG whether there was any further information the CAB should be aware of
2. Asked the DWG if there are any upcoming papers or research they are aware of.
3. Asked the MPI if there are any upcoming papers or research they are aware of.
4. Asked the MPI if there are any memos or other information which may show that the NZ management scheme including monitoring, control and surveillance particularly over discards is severely deficient.
5. Lodged an Official Information Act 1991 request if the MPI officials had not been forthcoming.
6. Conducted a google search.
7. Conducted the same primary research the authors conducted (Simmons; pages 8-12)

***Please specify which Pls would have been affected by the additional information. Also please specify the particular content, page and paragraph numbers in the additional information which you say should have been taken into account and what the likely outcome in terms of scoring and pass/fail would/ have been.***

PI 3.1.1 on page 45

The entire Simmons paper but in particular note 1.3 page 7; "To these authors knowledge, no fisheries stock assessment has explicitly considered species other than the target species, nor any ecological or environmental considerations..." there are concerns about the level of commercial discarding driven by mostly economic factors, and thus reported landings do not reflect actual catches... There is now very little effective surveillance by compliance officers of commercial fisheries, particularly in deep water fisheries"

Page 12: the actual catch was about 2.7 times the 14 million t reported to the FAO on behalf of New Zealand for 1950-2010.

Page 13: If the reconstructed total catch taken by New Zealand flagged vessels is compared to the FAO reported landings for New Zealand flagged vessels only (i.e. excluding that catch reported for foreign flagged vessels), it is 2.4 times that adjusted FAO baseline from 1950-2010. Only an estimated 42.5% of catch by New Zealand flagged vessels was reported.

Page 16: "More recently, McMillan *et al.* (2011a) detailed 252 of the most commonly caught bottom and midwater species; McMillan *et al.* (2011b) listed 122 less commonly caught bottom and midwater species, and; McMillan *et al.* (2011c) listed 98 species commonly caught using surface fishing methods (i.e. surface longline, trolling, purse seine, lampara net). After removing double counted species, these reports together list 397 different species that are caught in New Zealand waters - those commercially sold and those that are not. All of these species should have been reported as caught, at least since the 1990s, but were not. One species, spiny dogfish, was missing from the FAO data until 1981, yet before then it was a significant part of total catches. Reporting anomalies were evident for other common bycatch species. Blue shark (*Prionace glauca*) was first reported in 1995 and ratfishes (*Hydrolagus*

spp.) not until 1997. Carpet shark (*Cephaloscyllium isabellum*) was first officially reported caught in 1989, but was not included in FAO data until 2001. Black and smooth oreo (*Allocyttus niger*, *Pseudocyttus maculatus*) were only first reported in FAO data in 2001, yet were reported in domestic catches from 1973. By contrast, rebait (*Emmelichthys nitidus*) were first reported in FAO data in 1995 yet, oddly, even though national data is the source of FAO data, it was not reported in domestic data until 2002.”

“When the data were compared by species, little of the FAO data matched the reconstructed data taken from official reports. There were large discrepancies that could not be explained for many species (e.g. barracouta (*Thyrstites atun*), hoki (*Macruronus novaezelandiae*), snapper (*Pagrus auratus*), **orange roughy** (*Hoplostethus atlanticus*), southern blue whiting (*Micromesistius australis*), and silver warehou (*Seriola punctata*).”

Page 17 3.2: “New Zealand has always had an invisible commercial catch. Much of it has been landed on shore or used at sea and not reported. Invisible landings fall into a number of categories. In practice, a commercial vessel may land her catch without reporting it, thereby making an ‘unreported commercial landing’. Historically, this was risky because failing to report commercial landings has been illegal throughout the period covered by this study. A less risky approach was to report the landing but understate the quantity or misreport the species of fish landed.”

Page 20 3.2.2 “Under the QMS it became profitable to under-report landings and misidentify the species landed. This became apparent during ‘Operation Roundup’, an investigation MAF conducted from late 1990 to mid- 1991. Roundup investigated the false reporting of over 1,000 t of orange roughy. Twenty-one individuals and companies were charged with over 2,000 offences under the Fisheries Act 1983 and the Fisheries Reporting and Recordkeeping Regulations. The prosecution involved 80,000 documentary exhibits and resulted in the offenders incurring fines totalling \$2.5 million and the forfeiture of quota, fishing vessels, and vehicles. The offending was described by the Parliamentary Commissioner for the Environment (Williams, 1999), as “a complex conspiracy over several years to misreport illegally caught orange roughy.” It demonstrated how easily fishing operators and processors could “co-operate in falsifying documents in a consistent manner to circumvent the checks and balances in such a document intensive system” (Sullivan (1996) as cited in Williams, 1999)”

Page 43 4.0

“Our findings show that the FAO data (14 million t) understate New Zealand catches in all years from 1950 to 2010, largely due to missing data. There are also large discrepancies between the FAO data and our reconstructed national data (17.7 million t). To the reconstructed national data is added invisible commercial landings (5.7 million t), unreported dumped commercial catch (14.3 million t), and recreational and customary catches (512,000 t). For the years 1950 to 2010, the reconstructed total marine catch of New Zealand (by New Zealand and foreign flagged vessels) is estimated to be 38.1 million t. This indicates that actual catch was 2.7 times the 14 million t reported to the FAO on behalf of New Zealand for the same time period. The extended reconstructed estimate for 1950-2013 is 40 million t, comprised of 19 million t nationally reported, 5.8 million t of invisible landings, 14.7 million t of unreported dumped commercial catch, and 549,000 t of customary and recreational catches.”

Page 44: “Despite efforts to collect reliable data during the past 110 years, New Zealand’s catch reporting systems continue to be inadequate. Essential data are either lacking or missing from official statistics. Official documents have long highlighted the inadequacies of catch data, and acknowledged the significant levels of dumping and misreporting of catches. Even following the introduction of the QMS along with its supposedly better reporting systems, nefarious reporting practices persisted. Reliable catch data is a basic and essential requirement for the effective management of fisheries (Pitcher, Watson, Forrest, Valtýsson, & Guénette, 2002; McCluskey & Lewison, 2008). For most fisheries management purposes the essential data required is a reliable time series of catches of each managed species (Department of Statistics, 1981; Williams, 1999). Without this, fisheries management personnel cannot properly interpret trends, the effects of technology, or accurately evaluate the social and economic impact of actual or projected fisheries management measures (Cameron & Hughes, 1990). New Zealand’s reporting system needs to account for all of the catch. This is vital to maintaining sustainable fisheries”

Page 47: “2013 Ministry for Primary Industries investigation reports<sup>51</sup> into dumping and non-reporting highlights the potential damage of these practices to New Zealand, unless firm action is taken to resolve the problems once and for all:

It is more than sustainability. It is more than the fact that we are relying on misleading and incorrect data to sustain our fisheries. The most pressing reason for urgent action is that we have compelling visual evidence of serious offending recorded on a media that could become available (for whatever reason) to outside persons and organizations. Some of these people and organizations could have strong vested interests in this information and make this material quickly available to the public via internet related media i.e. 'you-tube' etc.

The resulting damage that could be caused not just to MPI but to the New Zealand fishing industry and economy as a whole could be extensive. The sight of large perfectly good fish being systematically discarded in such large quantities could have a huge negative effect, as it could easily stir up an emotive backlash from not only the New Zealand public, but from international quarters as well. These images could quickly negate the 'green sustainable' image that we as a country portray. This combined with the fact that we have known about these dumpings/discarding issues for many years, and would appear to have done little to combat it, would be very difficult to explain and be unpleasant at best.”

Page 48 “Nearly ninety years on, catch statistics are still wanting. In order to sustainably manage fish stocks, fisheries managers need to account for all fish mortality, whether landed or not; commercial, customary and recreational (Sumaila, Alder, & Keith, 2006). Assuming the level of unreported catch to be zero when in fact it is considerably higher, may threaten the sustainability of the fishery concerned. If just a proportion, a variable proportion, of actual catches (including discards) are reported, stock assessments will be flawed. While some estimates of unreported catches and discards are included in stock assessment models and TACs, through an allowance for other sources of fishing related mortality (OSFM), the evidence indicates these are too low. According to one fisheries management official<sup>52</sup> “it is not set for every stock and is really just an educated guess as the observer monitoring of most fisheries is limited so discard and undersize catch levels are not really known.”

***The objectors are asked to respond to these requests to the MSC for clarification by 5pm GMT 17 June 2016.***

**Melanie Carter**

**Independent Adjudicator**

**10 June 2016**



## ENVIRONMENT AND CONSERVATION ORGANISATIONS OF NZ INC.

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29 February 2016

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## 1.0 Introduction

The Environment and Conservation Organisations of NZ (ECO) is the national alliance of 50 organisations with a concern for the environment. ECO has been involved in issues of resource and marine management, biosecurity, biodiversity protection, toxics and environmental administration since its formation in 1972.

This submission has been prepared by members of ECO Executive and is in line with ECO Policy that was developed in consultation with ECO member bodies and endorsed by our AGM.

ECO has been concerned at the management of orange roughy fisheries for over 30 years and has engaged with and made submissions on catch limits and the management arrangements on deepwater fisheries over this time.

## **2.0 General Comments**

ECO does not consider that that orange roughy unit of certification (North-West Chatham Rise, East and South Chatham Rise and Challenger fisheries) meets the criteria for certification. ECO considers the application of criteria all UOC would have to be rejected.

ECO representative participated in the site visit undertaken by MRAG on 31 July 2014. ECO notes that at this stage the unit of certification (UOC) was uncertain so it was unclear which fisheries were involved. Apologies were given for Duncan Currie from Deep Sea Conservation Coalition at that meeting. Without knowing the unit of certification it is difficult for any

We would note that:

- This certification is being undertaken using MSC certification requirements v1.3, not the latest criteria v2.0.
- That there was nearly 18 month gaps between the site visit and the publication of the Draft Report. Under Ver 2.0 if a “9 month pause between site visit and PCDR publication; in which case FCR v2.0 (process and standard) shall be applied” (p137, Ver2.0). So why was version 2.0 not applied?

ECO objected to the peer reviewers as we considered they were missing key expertise in benthic and ecosystem impacts which is a critical issue in the consideration of MSC certification. While this submission was late due to family bereavement we are concerned at the inflexibility of MRAG and the MSC process.

## **2.1 Issues in Certification**

ECO supports the comments made by WWF in its letter of 30 July 2014. This includes:

- Data deficiencies on orange roughy biology and research;
- Target reference point being not precautionary or best practice;
- Limit reference point is not best practice or considered significant sources of uncertainty;
- Stock depletion and rebuild strategy is not consistent with the MSC standard;
- Significant uncertainties with orange roughy recruitment and stock structure;
- Harvest control rules - which ECO emphasises is a voluntary mechanism which has no hard standards and has been applied to allow continued fishing rather than closing a fishery eg black cardinal fish.

A key element of the MSC standard is the application of the precautionary approach. New Zealand has no explicitly precautionary approach in law. Efforts by Ministers to introduce a precautionary approach has been rejected by Ministers.

Efforts to cut orange roughy catch limits in past years to prevent a hard land have been rebuffed by the fishing industry. Wallace and Weeber (2005) documents the history of decisions on deepwater fisheries including orange roughy.

### 3.0 MRAG Appendix 1 Scoring and Rationales

Below is a commentary on the MRAG scoring of the orange roughy units of certification – North-West Chatham Rise, East and South Chatham Rise and Challenger fisheries.

### 3.1 Appendix 1.1 Performance Indicator Scores and Rationale

A summary of the results of rescoring is listed in the table below.

Overall weighted Principle-level scores				NWCR	ESCR	ORH7A
Principle 1 - Target species	Stock rebuilding PI not scored			68.13	63.13	65.63
	Stock rebuilding PI scored			66.00	62.71	62.51
Principle 2 - Ecosystem				63.03	63.03	65.03
Principle 3 - Management				77.25	77.25	75.50

Further our assessment of Performance indicator 2.4.3 is below the 60 performance level for all UOC.

The scoring results and indicator 2.4.3 result justifies our conclusion that the fishery should not be certified as it does not meet the MSC Standard.

#### Principle 1: Target Species

PI 1.1.1	The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing
OVERALL PERFORMANCE INDICATOR SCORE:	ORH3B NWCR 90 ORH3B ESCR 70 ORH7A 90
CONDITION NUMBER (if relevant):	ORH3B ESCR 1

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 70 or 90 score respectively.

There are a number of uncertainties with the current stock assessments for that UOC:.

#### ORH3B - NW Chatham Rise

- An assessment in 2014 estimated to have increased to 37%Bo and the biomass was very likely to be at or above the target (30%);
- B2014 is very unlikely to be below B20%.
- At the current catch (110t) or the current voluntary catch limit (750t) it is very unlikely the biomass will decline below B20%.

- The biomass is expected to increase or stay steady over the next 5 years with annual catches of up to 1400t.
- Uncertainties in this assessment include how much of the spawning biomass the acoustic assessment covers, patterns in year class strength, and that the time series of abundance is short.
- There is a voluntary catch limit of 750 tonnes for this area within a total catch limit of 4500 tonnes.

### **ORH 3B – E and S Chatham Rise**

- An assessment in 2014 estimated to have increased to 30%Bo and about as likely as not to be at or above the lower end of the management target range (30%);
- B2014 was unlikely to be below B20% but very unlikely to below B10%.
- “Overfishing is very unlikely to be occurring”.
- Uncertainties in this assessment include how much of spawning biomass the acoustic survey covers, whether a spawning plume (“Rekohu”) is new or longstanding, and patterns in year class strength as only 2 years of age composition data was used.
- The “old” spawning plume had the lowest estimated biomass in 2013 which was only 25% of the 2002 acoustic estimate, at which stage the stock was already well below 30%Bo.
- Alternative model assumptions (including lower value of M (0.036) estimated in the model) produced a range in biomass from 19 to 32% (95%CI) for B2014.
- On most of the South Rise and east features catch rates have tended to decline rapidly and then flatten out with little recovery. The fishery on the South Rise moved east over time “which was described as a serial depletion of orange roughly from the hills” (Clark 1997, MPI 2015). “The non-spawning fishery has therefore largely contracted to the hill complexes in the southeast corner of the Rise..” (MPI 2015). There has also been a “spatial contraction of the fishery during the spawning period” (MPI 2015).
- There is a voluntary catch limit of 3100 tonnes for this area within a total catch limit of 4500 tonnes.

### **ORH7A**

- This fishery was closed in 2000 when the stock was estimated to have been reduced to 3%Bo (1-6%, 95%CI).
- An assessment in 2014 estimated that the biomass had increased to 42%Bo and was very likely to be at or above the target (30%);
- B2014 was very unlikely to be below B20%.
- “Overfishing is very unlikely to be occurring”.
- Uncertainties in this assessment include how much of spawning biomass the acoustic and trawl survey covers and patterns in year class strength.
- Age frequency of the fishery in 2009 was much younger than in 1988 with mean ages of 33 years (2009) and 53 years (1987). The age range from otoliths were 18-90 years (2009) and 26-145 years (1987). The spawning population in 2009 “consisted mainly

of relatively young recruits (mean age of maturity is estimated at 23 years) most of which would not have been present prior to 2000.” (MPI 2012).

- While the assessment model shows increasing biomass, the acoustic and trawl surveys have been declining since 2009 – the 2013 survey was 54% of the 2009 result.
- This area was opened to fishing in 2010 with a catch limit of 500 tonnes.

Overall: Orange roughy fishery have a history of over-optimistic assessments and predicted recovery which never takes places. The assessment for ORH7A and E&Sth Chatham Rise have similar issues – with the main historic index declining while the stock assessment suggests the stock is increasing.

For these reasons we have down-weighted the scores.

**Revised Score:**

- **ORH7A**                **70**
- **ESCR**                 **60**
- **NWCR**                **80**

<b>PI 1.1.2</b>	<b>Limit and target reference points are appropriate for the stock</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	ORH3B NWCR 80	ORH3B ESCR 80
	ORH7A	80
<b>CONDITION NUMBER (if relevant):</b>		

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 80 score.

We agree with the critique of the limit and target reference point made by WWF. We would not that CCAMLR has one example of best practice target reference points of 50%Bo for predator species and 75%Bo for prey species.

The current New Zealand reference points are not precautionary and they are not applied for either soft or hard limits. Given the uncertainty about orange roughy recruitment it is not possible to determine whether the limit reference point is appropriate,

For these reason we consider a score close to 60 is more appropriate.

**Revised Score:**

**All Stocks**

- **ORH7A**                **65**
- **ESCR**                 **65**
- **NWCR**                **65**

<b>PI 1.1.3</b>	<b>Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe</b>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>	

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 90 score.

New Zealand does not have a clear rebuilding strategy applied to orange roughy. Peer reviewer 1 raised issues over the rebuild strategy. ECO supports WWF and reviewer 1 concern over the rebuild strategy.

For these reason we consider a score close to 60 is more appropriate.

**Revised Score:**  
**All Stocks 60**

- **ORH7A**
- **ESCR**
- **NWCR**

<b>PI 1.2.1</b>	<b>There is a robust and precautionary harvest strategy in place</b>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	ORH3B NWCR 85 ORH3B ESCR 85 ORH7A 85
<b>CONDITION NUMBER (if relevant):</b>	

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 85 score.

There is neither a robust nor precautionary harvest strategy in place. The precautionary principle is not clear in the Fisheries Act.

Given the history of over-optimistic orange roughy assessment caused by the limited period orange roughy have been fished and researched compared to their long life history it is essential that any MSE consider a wide set of uncertainties. The effect of climate change on a long lived species like orange roughy is not known.

For these reason we consider a score close to 60 is more appropriate.

**Revised Score:**  
**All Stocks 65**

<b>PI 1.2.2</b>	<b>There are well defined and effective harvest control rules in place</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	ORH3B NWCR 90	ORH3B ESCR 90
<b>CONDITION NUMBER (if relevant):</b>	ORH7A	90

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 90 score.

There is neither a robust nor precautionary harvest control rules in place. The precautionary principle is not clear in the Fisheries Act. Harvest control rules are a voluntary mechanism and not a legal requirement.

Given the history of over-optimistic orange roughy assessment caused by the limited period orange roughy have been fished and researched compared to their long life history it is essential that any MSE consider a wide set of uncertainties. The effect of climate change on a long lived species like orange roughy is not known.

The uncertainty over orange roughy recruitment must be considered as part of any MSE approach.

For these reason we consider a score close to 60 is more appropriate.

**Revised Score:**  
**All Stocks 65**

<b>PI 1.2.3</b>	<b>Relevant information is collected to support the harvest strategy</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	ORH3B NWCR 90	ORH3B ESCR 90
<b>CONDITION NUMBER (if relevant):</b>	ORH7A	90

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 90 score.

Peer reviewer 1 questioned whether the scoring could be justified.

A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted:

*“Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge a decline but not consistently throughout the scoring of P2 scoring issues.”*

Only with observers on board is there sufficient information to assess by-catch rates. Reporting of non-quota management species and non-target fish species (eg corals) relies on reporting from observers.

There is no guarantee the observer coverage will be 20% coverage. MPI priorities are wider than research priorities, and include enforcement and labour standards, and can priorities can change between and within years.

The level of observer coverage is patchy in the deepwater trawl fishery (orange roughy, oreos and cardinal fish) with an average of 11% of tows observed in 2012-13. In the orange roughy target fishery 11.6% of tow were observed in 2012-13 and 13.1% in 2013-14 but observer vessel days where only half the level required for collection of representative biological information and samples (eg otoliths for ageing and length frequency) to manage the fishery and its impacts (MPI 2015b).

There is currently no long-term planning for research and management. The 10 year research plan has ended, there is currently no replacement, and the deepwater management plan ends in June and it is unclear whether it will be replaced.

For these reason we consider a score close to 60 is more appropriate.

**Revised Score:**  
**All Stocks 65**

<b>PI 1.2.4</b>	<b>There is an adequate assessment of the stock status</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	ORH3B NWCR 90	ORH3B ESCR 90
<b>CONDITION NUMBER (if relevant):</b>	ORH7A	90

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 90 score.

Given the history of over-optimistic orange roughy assessment caused by the limited period orange roughy have been fished and researched compared to their long life history it is essential that any MSE consider a wide set of uncertainties. The effect of climate change on a long lived species like orange roughy is not known.

The uncertainty over orange roughy recruitment must be considered as part of any stock assessment.

Like any stock assessment working group it is only as good as the participants that can attend. The trend over time in working group has been to less diverse membership and thus smaller review. This is a problem with the robustness of any assessment. For NGOs it is difficult for us to attend many meetings over the year.

A wider peer review of all the assessment would be a positive step forward.

For these reason we consider a score close to 60 is more appropriate.

**Revised Score:**  
**All Stocks 60**

## ***Principle 2: Ecosystem***

### **Evaluation Table for PI 2.1.1**

<b>PI 2.1.1</b>	<b>The fishery does not pose a risk of serious or irreversible harm to the retained species or species groups and does not hinder recovery of depleted retained species or species groups</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	ORH3B NWCR – 95	ORH3B ESCR – 80
	ORH7A – 80	
<b>CONDITION NUMBER (if relevant):</b>		

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 80 or 95 score respectively.

Smooth oreos assessment (OEO4) in this commentary for the Chatham Rise UOCs indicates it is trending downwards, it is below the target Biomass (B40%), “exploitation rates have steadily increased, and stocks is predicted to decline below 20%Bo by 2018.”

Anderson (2011) also notes in his review a problem with spatial coverage of observed effort that should be considered.

This information indicates that there clearly are conservation concerns which should be considered and that they are closer to 60 than 80.

**Revised Score:**  
**All Stocks**

- **ORH7A 95**
- **ESCR 65**
- **NWCR 65**

### **Evaluation Table for PI 2.1.2**

<b>PI 2.1.2</b>	<b>There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>95</b>
<b>CONDITION NUMBER (if relevant):</b>		

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant

issues would mean the UOC would not meet a 95 score.

A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted:

*Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge a decline but not consistently throughout the scoring of P2 scoring issues.*

There is no fishery species chapter for oreos in the Deepwater Management Plan. This chapter would be essential for considering the management of smooth oreo bycatch in the orange roughy fishery.

Smooth oreos assessment (OEO4) in this commentary for the Chatham Rise UOCs indicates it is trending downwards, it is below the target Biomass (B40%), “exploitation rates have steadily increased, and stocks are predicted to decline below 20%Bo by 2018.

The current status of the deepwater management plan is unclear, as is the commitment to deepwater research given the end of the Deepwater Research strategy.

The sustainability of deepwater sharks caught in the orange roughy fishery has been highlighted by the need for a risk assessment of all shark species. The level 1 risk assessment (Ford et al 2015) has listed four of the top five species as being caught in orange roughy fisheries including Baxter’s dogfish and seal shark.

Given these concerns an assessment closer to 60 would be more appropriate.

**Revised Score:**  
**All Stocks 65**

<b>PI 2.1.3</b>	<b>Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species</b>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>85</b>
<b>CONDITION NUMBER (if relevant):</b>	

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 85 score.

A key element in justification is the information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted:

*Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge a decline but not consistently throughout the scoring of P2 scoring issues.*

There is no fishery species chapter for oreos in the Deepwater Management Plan. This chapter would be essential for considering the management of smooth oreo bycatch in the orange roughy fishery.

Smooth oreos assessment (OEO4) is trending downwards, it is below the target Biomass (B40%), “exploitation rates have steadily increased”, and stocks is predicted to decline below 20%Bo by 2018.

The current status of the deepwater management plan is unclear, as is the commitment to deepwater research given the end of the Deepwater Research strategy.

The sustainability of deepwater sharks caught in the orange roughy fishery has been highlighted by the need for a risk assessment of all shark species. The level 1 risk assessment (Ford et al 2015) has listed four of the top five species as being caught in orange roughy fisheries including Baxter’s dogfish and seal shark.

Given these concerns an assessment closer to 60 would be more appropriate.

**Revised Score:**  
**All Stocks 65**

<b>PI 2.2.1</b>	<b>The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>ORH3B NWCR, ORH3B ESCR, ORH7A – 80</b>
<b>CONDITION NUMBER (if relevant):</b>		

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 80 score.

The current status of the deepwater management plan is unclear, as is the commitment to deepwater research given the end of the Deepwater Research strategy.

The sustainability of deepwater sharks caught in the orange roughy fishery has been highlighted by the need for a risk assessment of all shark species. The level 1 risk assessment (Ford et al 2015) has listed four of the top five species as being caught in orange roughy fisheries including Baxter’s dogfish and seal shark.

Given the risk assessment it is very doubtful that the claim in the report of “within biologically” based limits can be justified. Given the uncertainty and taking a precautionary approach an assessment closer to 60 would be more appropriate.

**Revised Score:**  
**All Stocks 65**

**Evaluation Table for PI 2.2.2**

<b>PI 2.2.2</b>	<b>There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations</b>	
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<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>ORH3B NWCR, ORH3B ESCR, ORH7A – 85</b>
<b>CONDITION NUMBER (if relevant):</b>	

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 85 score.

A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted:

*Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge a decline but not consistently throughout the scoring of P2 scoring issues.*

Moving a non-QMS species to the QMS may increase the risk to the species given the incentives in the New Zealand cost recovery regime for research and management.

The current status of the deepwater management plan is unclear, as is the commitment to deepwater research given the end of the Deepwater Research strategy.

The sustainability of deepwater sharks caught in the orange roughy fishery has been highlighted by the need for a risk assessment of all shark species. The level 1 risk assessment (Ford et al 2015) has listed four of the top five species as being caught in orange roughy fisheries including Baxter’s dogfish and seal shark.

Given the risk assessment it is very doubtful that the claim in the report of “within biologically” based limits can be justified. Given the uncertainty and taking a precautionary approach an assessment closer to 60 would be more appropriate.

**Revised Score:  
All Stocks 65**

<b>PI 2.2.3</b>	<b>Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch</b>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>ORH3B NWCR, ORH3B ESCR, ORH7A – 80</b>
<b>CONDITION NUMBER (if relevant):</b>	

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 80 score.

A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted:

*Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20%*

*since 2010. The report does acknowledge a decline but not consistently throughout the scoring of P2 scoring issues.*

Orange roughy are caught using bottom trawls and between 1588 and 5001 tows were undertaken annually targeting roughy between 2003-04 and 2012-13.

Anderson (2011) summarised the bycatch of orange roughy and oreo trawl fisheries from 1990–91 to 2008–09.” In trawls “since 2005–06, orange roughy accounted for about 84% of the total observed catch and the remainder comprised mainly oreos (10%), hoki (0.4%), and cardinalfish (0.3%).”

“Rattails (various species, 0.8%) and shovelnose spiny dogfish (*Deania calcea*, 0.6%) were the species most adversely affected by this fishery, with over 90% discarded. Other fish species frequently caught and usually discarded included deepwater dogfishes (family Squalidae), especially *Etmopterus* species, the most common was probably Baxter’s dogfish (*Etmopterus baxteri*), slickheads, and morid cods, especially Johnson’s cod (*Halargyreus johnsonii*) and ribaldo. In total, over 250 bycatch species or species groups were observed, most were noncommercial species, including invertebrate species, caught in low numbers. Squid (mostly warty squid, *Onykia* spp.) were the largest component of invertebrate catch, followed by various groups of coral, echinoderms (mainly starfish), and crustaceans (mainly king crabs, family Lithodidae)” (MPI 2014)

“Total annual bycatch in the orange roughy fishery has been as high as 27 000 t but has declined with the TACC and was less than 4000 t between 2005–06 and 2008–09 (non-commercial species comprising only 5–10% of the total). Total annual discards also decreased over time, from about 3400 t in 1990–91 to about 300 t in 2007–08 and, since about 2000, has been almost entirely of non-QMS species (rattails, shovelnose spiny dogfish, and other deepwater dogfishes).”

It is unknown whether the bycatch and discards are sustainable in this fishery. Some of the species discarded are relatively long lived (eg rattails) or have low resilience and high vulnerability to fishing.

The impact of bottom trawling on corals is likely to be significant with high sensitivity to trawling and long recovery times in the order of decades if not centuries.

“Tracey et al (2011) analysed the distribution of nine groups of protected corals based on bycatch records from observed trawl effort from 2007–08 to 2009–10, primarily from 800–1000 m depth. For the orange roughy target fishery, about 10% of observed tows in FMAs 4 and 6 included coral bycatch, but a higher proportion of tows in northern waters included coral (28% in FMA 1, 53% in FMA 9).” (MPI 2014)

Tracey et al (2012) noted in a study of a seamount complex on the North Chatham Rise which had been targeted for orange roughy – “The study showed that fish assemblages on seamounts can vary over very small spatial scales, in the order of several km. However, patterns of species similarity and abundance were inconsistent across the seamounts examined, and these results add to a growing literature suggesting that faunal communities on seamounts may be populated from a broad regional species pool, yet show considerable variation on individual seamounts.”

The impacts of trawling on seamounts and the potential recovery time of the diversity that is there could take centuries to recovery from just one trawl. As Clark et al (2015) observed: “many deep-sea invertebrates are exceptionally long-lived and grow extremely slowly: these biological attributes mean that the recovery capacity of the benthos is highly limited and prolonged, predicted to take decades to centuries after fishing has ceased.” Protected deep sea corals are amongst those long-lived invertebrates. (Tracey et al 2003).

Reporting of non-quota management species and non-target fish species (eg corals) relies on reporting from observers. Given the uncertainty and taking a precautionary approach an assessment closer to 60 would be more appropriate.

**Revised Score:**  
**All Stocks 65**

<b>PI 2.3.1</b>	<b>The fishery meets national and international requirements for the protection of ETP species</b> <b>The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>ORH3B ESCR-75</b>  <b>ORH3B NWCR-75</b>  <b>ORH7A-95</b>
<b>CONDITION NUMBER (if relevant):</b>		

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 75 or 95 score.

A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted:

*Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge a decline but not consistently throughout the scoring of P2 scoring issues.*

Orange roughy are caught using bottom trawls and between 1588 and 5001 tows were undertaken annually targeting roughy between 2003-04 and 2012-13. Much of this fishing effort is on seamounts, hills and other features. . (Black et al 2013). Of these 94% were tows between 700 and 1200m.

The orange roughy fishery captures fur seals and albatross and petrels.

- Average rate of capture of fur seals is 0.06 per 100 tows (excluding cryptic mortality) between 2002-03 and 2012-13 (up to 9 per year) which is “very low compared with NZ other trawl fisheries”;
- Average rate of capture of seabirds is 0.48 per 100 tows (excluding cryptic mortality) between 2002-03 and 2012-13 (up to 77 per year) which is a “very low rate relative to other trawl fisheries”.

Salvin’s albatross was the most frequently caught albatross (46%) while sooty shearwater was the most frequently caught petrel. Fisheries on the Chatham Rise had the highest reported captures.

The measures applied to date to reduce seabird captures in trawl fisheries have not affected the bycatch rate in fishery in the last 10 years.

There are specific threats to species from trawl bycatch. The Salvin's albatross, a vulnerable threatened species (Birdlife 2012), has the highest risk from fishing rating of all seabirds assessed in New Zealand (Richards 2013). For this species "captures rates have fluctuated without trend or increased in all fisheries taking substantial numbers of this species between 2002–03 and 2012-13, especially after 2006–07." Trawl fisheries "account for 75% of all estimated captures of Salvin's albatross in these years." About 25% of the impacts in the combined middle-depth fishery.

"Salvin's (vulnerable threatened species), southern Buller's (at risk – nationally uncommon), and NZ white-capped (at risk declining) albatrosses make up 39%, 28%, and 25% of the albatrosses captured, Respectively." For all three species the annual potential fatalities (APF) (including cryptic mortality) exceed the estimate of potential biological removals (PBR), assuming an inappropriate recovery factor ( $f$ ) of 1 (MPI 2014). Dillingham and Fletcher (2011) noted: "A value of  $f = 0.1$  is suggested for threatened species,  $f = 0.3$  for near-threatened species, and  $f = 0.5$  for all other species due to the potential for bias in population estimates (Wade, 1998; Dillingham and Fletcher, 2008)." For Salvin's, a vulnerable threatened species, the estimated potential fatalities (APF) was 35 times the PBR, with  $f = 0.1$  for a threatened species. Orange roughy trawl fishery is part of this assessed impact.

The National Plan of Action on Seabirds for New Zealand (2013) has goals to reduce by-catch but no new measures are in place and no new measures have been applied to reduce bycatch.

Other issues relevant to this criterion include:

- Management has not defined significant habitats.
- No bioregions have been determined in the main trawling areas in follow-up research.
- Fishery catches many protected coral habitats, and land mainly Scleractinia, with some gorgonians and hydrocorals also landed.
- Significant gaps in knowledge for habitat.

Rice (2006) reviews the impacts of trawling. The "*conclusions about the effects on habitats of mobile bottom fishing gears were that they:*

- *can damage or reduce structural biota (All reviews, strong evidence or support).*
- *can damage or reduce habitat complexity (All reviews, variable evidence or support).*
- *can reduce or remove major habitat features such as boulders (Some reviews, strong evidence or support).*
- *can alter seafloor structure (Some reviews, conflicting evidence for benefits or harm). "* (MPI 2014)

"The trawl fisheries for orange roughy, oreos, and cardinalfish take place to a large extent on seamounts or other features (Clark & O'Driscoll 2003, O'Driscoll & Clark 2005). These features are often geographically small and, in common with other, localised habitats like vents, seeps, and sponge beds, do not appear on broad-scale habitat maps (e.g., at EEZ scale) and cannot realistically be predicted by broadscale environmental classifications." (MPI 2014).

Most of orange roughy catch comes from seamounts (including hills and ridges). O'Driscoll and Clark (2003) reported that 59.5% of effort and 62.4% of catch targeted on orange roughy comes from seamounts.

The impact of bottom trawling on corals is likely to be significant with high sensitivity to trawling and long recovery times in the order of decades if not centuries.

A large number of researchers have noted a high degree of endemism associated with seamounts. De Forges et al (2000) noted that:

*“Seamounts comprise a unique deep-sea environment, characterized by substantially enhanced currents and a fauna that is dominated by suspension feeders, such as corals.”*  
*“Low species overlap between seamounts in different portions of the region indicates that the seamounts in clusters or along ridge systems function as 'island groups' or 'chains,' leading to highly localized species distributions and apparent speciation between groups or ridge systems that is exceptional for the deep sea. These results have substantial implications for the conservation of this fauna, which is threatened by fishing activity.”*

This endemism is likely to mean that the classification system devised by Rowden et al (2005) will under-estimate the biodiversity on seamounts. For example, fish species diversity on some seamounts has also been reviewed by NIWA scientists (Tracey et al 2004). Tracey et al (2004) found there was clearly different fish fauna on seamounts north and south of 41°S and that in 10 seamount complexes there was different species richness. Even within a seamount complex they found different species dominating different seamounts.

“Tracey et al (2011) analysed the distribution of nine groups of protected corals based on bycatch records from observed trawl effort from 2007–08 to 2009–10, primarily from 800–1000 m depth. For the orange roughy target fishery, about 10% of observed tows in FMAs 4 and 6 included coral bycatch, but a higher proportion of tows in northern waters included coral (28% in FMA 1, 53% in FMA 9).” (MPI 2014)

Tracey et al (2012) noted in a study of a seamount complex on the North Chatham Rise which had been targeted for orange roughy – “The study showed that fish assemblages on seamounts can vary over very small spatial scales, in the order of several km. However, patterns of species similarity and abundance were inconsistent across the seamounts examined, and these results add to a growing literature suggesting that faunal communities on seamounts may be populated from a broad regional species pool, yet show considerable variation on individual seamounts.”

The impacts of trawling on seamounts and the potential recovery time of the diversity that is there could take centuries to recovery from just one trawl. As Clark et al (2015) observed: “many deep-sea invertebrates are exceptionally long-lived and grow extremely slowly: these biological attributes mean that the recovery capacity of the benthos is highly limited and prolonged, predicted to take decades to centuries after fishing has ceased.”

Protected deep sea corals are amongst those long-lived invertebrates. (Tracey et al 2003). Corals collections from trawl nets have been aged at 300-500 years old for bubblegum coral (*Paragorgia arborea*), at least 300-500 years for bamboo corals (*Keratoisis sp.*) and deep-sea stony corals have reported ages of 50 to 640 years (*Enallopsammia rostrata*).

The sustainability of deepwater sharks caught in the orange roughy fishery has been highlighted by the need for a risk assessment of all shark species. The level 1 risk assessment (Ford et al 2015) has listed four of the top five species as being caught in orange roughy fisheries including Baxter’s dogfish and seal shark.

Given the risk assessment it is very doubtful that the claim in the report of “within biologically” based limits can be justified. Given the uncertainty and taking a precautionary approach an assessment closer to 60 would be more appropriate.

**Revised Score:**  
**All Stocks 65**

<b>PI 2.3.2</b>	<b>The fishery has in place precautionary management strategies designed to:</b> <ul style="list-style-type: none"> <li>• <b>Meet national and international requirements;</b></li> <li>• <b>Ensure the fishery does not pose a risk of serious harm to ETP species;</b></li> <li>• <b>Ensure the fishery does not hinder recovery of ETP species; and</b></li> <li>• <b>Minimise mortality of ETP species.</b></li> </ul>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>70</b>
<b>CONDITION NUMBER (if relevant):</b>		

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 70 score.

A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted:

*Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge is decline but not consistently throughout the scoring of P2 scoring issues.*

The current status of the deepwater management plan is unclear, as is the commitment to deepwater research given the end of the Deepwater Research strategy.

There is no population management plan for protected species and the provisions of the Wildlife Act and the Marine Mammals Protection Act have been found impossible to implement to limit the impact on ETP species.

There is no strategy apart from research for most ETP species. The exceptions are the National Plan of Action on Sharks and Seabirds but these have yet to be fully implemented. There is no strategy for marine mammals capture or benthic species including corals.

The BPA is not a strategy to protect corals rather it is a strategy to avoid protecting corals as they were establish in areas where little or no fishing was taking place and most was much deeper than trawling depths.

For these reason the assessment should be closed to 60.

**Revised Score:  
All Stocks 65**

<b>PI 2.3.3</b>	<b>Relevant information is collected to support the management of fishery impacts on ETP species, including:</b> <ul style="list-style-type: none"> <li>• <b>Information for the development of the management strategy;</b></li> <li>• <b>Information to assess the effectiveness of the management strategy; and</b></li> <li>• <b>Information to determine the outcome status of ETP species.</b></li> </ul>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>80-ORH7A 75-ESCR, NWCR</b>

<b>CONDITION NUMBER (if relevant):</b>	<b>3</b>
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There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 70 score.

A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted:

*Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge is decline but not consistently throughout the scoring of P2 scoring issues.*

The current status of the deepwater management plan is unclear, as is the commitment to deepwater research given the end of the Deepwater Research strategy.

There is no population management plan for protected species and the provisions of the Wildlife Act and the Marine Mammals Protection Act have been found impossible to implement to limit the impact on ETP species.

There is no strategy apart from research for most ETP species. The exceptions are the National Plan of Action on Sharks and Seabirds but these have yet to be fully implemented. There is no strategy for marine mammals capture or benthic species including corals.

The BPA is not a strategy to protect corals rather it is a strategy to avoid protecting corals as they were establish in areas where little or no fishing was taking place and most was much deeper than trawling depths.

For these reason the assessment should be closed to 60.

**Revised Score:**  
**All Stocks 65**

<b>PI 2.4.1</b>	<b>The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function</b>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	
	<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>	
	<b>N/A</b>

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 70 score.

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 70 score.

A key element in information collection if the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted:

*Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge is decline but not consistently throughout the scoring*

*of P2 scoring issues.*

The impact of bottom trawling on corals is likely to be significant with high sensitivity to trawling and long recovery times in the order of decades if not centuries.

“Tracey et al (2011) analysed the distribution of nine groups of protected corals based on bycatch records from observed trawl effort from 2007–08 to 2009–10, primarily from 800–1000 m depth. For the orange roughy target fishery, about 10% of observed tows in FMAs 4 and 6 included coral bycatch” (MPI 2014)

Tracey et al (2012) noted in a study of a seamount complex on the North Chatham Rise which had been targeted for orange roughy – “The study showed that fish assemblages on seamounts can vary over very small spatial scales, in the order of several km. However, patterns of species similarity and abundance were inconsistent across the seamounts examined, and these results add to a growing literature suggesting that faunal communities on seamounts may be populated from a broad regional species pool, yet show considerable variation on individual seamounts.”

The impacts of trawling on seamounts and the potential recovery time of the diversity that is there could take centuries to recovery from just one trawl. As Clark et al (2015) observed: “many deep-sea invertebrates are exceptionally long-lived and grow extremely slowly: these biological attributes mean that the recovery capacity of the benthos is highly limited and prolonged, predicted to take decades to centuries after fishing has ceased.” Protected deep sea corals are amongst those long-lived invertebrates. (Tracey et al 2003).

Reporting of non-quota management species and non-target fish species (eg corals) relies on reporting from observers. Given the uncertainty and taking a precautionary approach an assessment closer to 60 would be more appropriate.

**Revised Score:**  
**All Stocks 60**

#### **Evaluation Table for PI 2.4.2**

<b>PI 2.4.2</b>	<b>There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types</b>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>85</b>
<b>CONDITION NUMBER (if relevant):</b>	

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 70 score.

A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted:

*Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge a decline but not consistently throughout the scoring of P2 scoring issues.*

The impact of bottom trawling on corals is likely to be significant with high sensitivity to trawling and long recovery times in the order of decades if not centuries.

There is no strategy in place to deal with the impact of trawling on corals and other sensitive species.

The current status of the deepwater management plan is unclear, as is the commitment to deepwater research given the end of the Deepwater Research strategy.

There is no population management plan for protected species and the provisions of the Wildlife Act and the Marine Mammals Protection Act have been found impossible to implement to limit the impact on ETP species. There is no strategy apart from research for most ETP species.

The BPA is not a strategy to protect corals rather it is a strategy to avoid protecting corals as they were establish in areas where little or no fishing was taking place and most was much deeper than trawling depths.

Given the uncertainty and taking a precautionary approach an assessment closer to 60 would be more appropriate.

**Revised Score:**  
**All Stocks 60**

<b>PI 2.4.3</b>	<b>Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types</b>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>95</b>
<b>CONDITION NUMBER (if relevant):</b>	

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 70 score.

A key element in information collection if the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted:

*Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge is decline but not consistently throughout the scoring of P2 scoring issues.*

The impact of bottom trawling on corals is likely to be significant with high sensitivity to trawling and long recovery times in the order of decades if not centuries.

There is no strategy in place to deal with the impact of trawling on corals and other sensitive species.

The current status of the deepwater management plan is unclear, as is the commitment to deepwater research given the end of the Deepwater Research strategy.

There is no population management plan for protected species and the provisions of the Wildlife Act and the Marine Mammals Protection Act have been found impossible to implement to limit the impact on ETP species. There is no strategy apart from research for

most ETP species.

The BPA is not a strategy to protect corals rather it is a strategy to avoid protecting corals as they were established in areas where little or no fishing was taking place and most was much deeper than trawling depths.

There is not sufficient information on habitats, variation in coral diversity between features, and the data collection coverage is patchy.

Given the uncertainty and taking a precautionary approach an assessment closer to 60 would be more appropriate.

**Revised Score:**  
**All Stocks 60**

<b>PI 2.5.1</b>	<b>The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function</b>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>	

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 100 score.

Given the known impacts of trawling on coral and other sensitive benthic species and the inadequate information on habitats, variation in coral diversity between features, and that data collection coverage is patchy, it is likely that the fishery is causing serious and irreversible harm to ecosystem structure and function (see earlier comments on Principle 2).

Given the uncertainty and taking a precautionary approach an assessment under 60 would be more appropriate.

**Revised Score:**  
**All Stocks Less than 60**

<b>PI 2.5.2</b>	<b>There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function</b>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>	

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 90 score.

A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted:

*Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge is decline but not consistently throughout the scoring of P2 scoring issues.*

There is no population management plan for protected species and the provisions of the Wildlife Act and the Marine Mammals Protection Act have been found impossible to implement to limit the impact on ETP species. There is no strategy apart from research for most ETP species.

The BPA is not a strategy to protect corals rather it is a strategy to avoid protecting corals as they were establish in areas where little or no fishing was taking place and most was much deeper than trawling depths.

There is not sufficient information on habitats, variation in coral diversity between features, and the data collection coverage is patchy.

Given the uncertainty and taking a precautionary approach an assessment closer to 60 would be more appropriate.

**Revised Score:**  
**All Stocks 60**

**Evaluation Table for PI 2.5.3**

<b>PI 2.5.3</b>	<b>There is adequate knowledge of the impacts of the fishery on the ecosystem</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>85</b>
<b>CONDITION NUMBER (if relevant):</b>		

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 85 score.

There is no population management plan for protected species and the provisions of the Wildlife Act and the Marine Mammals Protection Act have been found impossible to implement to limit the impact on ETP species. There is no strategy apart from research for most ETP species.

The BPA is not a strategy to protect corals rather it is a strategy to avoid protecting corals as they were establish in areas where little or no fishing was taking place and most was much deeper than trawling depths.

There is not sufficient information on habitats, variation in coral diversity between features, and the data collection coverage is patchy.

Given the uncertainty and taking a precautionary approach an assessment closer to 60 would be more appropriate.

**Revised Score:**  
**All Stocks 60**

### ***Principle 3: Management System***

#### **Evaluation Table for PI 3.1.1**

<b>PI 3.1.1</b>	<b>The management system exists within an appropriate legal and/or customary framework which ensures that it:</b> <ul style="list-style-type: none"> <li>• <b>Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and</b></li> <li>• <b>Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</b></li> <li>• <b>Incorporates an appropriate dispute resolution framework.</b></li> </ul>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>		

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 100 score. MRAG should not just base this information on that produced by Intertek in other MSC Certifications.

The commentary focuses on the relationship between the Ministry of Primary Industry or the Minister and the Commercial Sector and does not consider other interests in fisheries apart from customary fishing interests. The commentary does not consider the role of the Department of Conservation or the Minister of Conservation.

There is no explicit precautionary approach in the Fisheries Act. Proposals by Ministers to improve the Fisheries Act to make it clear that section 10 is precautionary approach were rejected by the fishing industry.

The current Deepwater Management Plan ends at the end of June and currently it is unclear whether there will be a replacement plan. Despite commitments on consultation on reviewing and consultation on these plans at the beginning on 2015 there has been no consultation. We were advised at the end of 2015 that the Ministry was reconsidering the role of management plans.

The Annual Operational Plan process is difficult to influence as it is decided by the industry and the Ministry prior to discussions with other interests.

There is no clear dispute resolution framework as the operational plan provisions, the allocation of catches between areas, and the Fisheries 2030 framework are all voluntary and have no statutory base.

The Westpac Bank is outside the NZ EEZ and is subject to the requirements of SPRFMO. There regime that applies is an interim regime only and does not meet the requirements of UNGA resolutions.

#### **Revised Score:**

- **ORH7A**            **60**
- **ESCR**             **70**
- **NWCR**            **70**

**Evaluation Table for PI 3.1.2**

<b>PI 3.1.2</b>	<b>The management system has effective consultation processes that are open to interested and affected parties.</b>	
	<b>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>		

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 100 score.

MRAG should not just base this information on that produced by Intertek in other MSC Certifications.

The commentary focuses on the relationship between the Ministry of Primary Industry or the Minister and the Commercial Sector and does not consider other interests in fisheries apart from customary fishing interests.

The consultation system does not meet the requirement for 100. There is no consultation of all parties in the process. The MOU between the fishing industry and the Ministry of Primary Industry means that there is exclusion of both science and environmental interest from consultation process.

The Ministry has ignored alternative suggestions for catch limits or approaches and only considered the approaches they or the industry have put forward.

The consultation on future research is very patchy. There is currently no research plan and the current cost recovery regime means that final consultation and the scope of the project that consultation only occurs with the fishing industry.

The Ministry is undertaking a review of the cost recovery regime but we have not been consulted on that process.

MPI's predecessor MAF consulted on a binding standard for consultation and participation but withdrew it after submissions closed.

**Revised Score:**  
**All Stocks 90**

**Evaluation Table for PI 3.1.3**

<b>PI 3.1.3</b>	<b>The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>100</b>

<b>CONDITION NUMBER (if relevant):</b>	
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There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 100 score.

MRAG should not just base this information on that produced by Intertek in other MSC Certifications.

The current Deepwater Management Plan ends at the end of June and currently it is unclear whether there will be a replacement plan. Despite commitments on consultation on reviewing and consultation on these plans at the beginning on 2015 there has been no consultation. We were advised at the end of 2015 that the Ministry was reconsidering the role of management plans.

The Annual Operational Plan process is difficult to influence as it is decided by the industry and the Ministry prior to discussions with other interests.

In ORH7A, the Westpac Bank is outside the NZ EEZ and is subject to the requirements of SPRFMO. There regime that applies is an interim regime only and does not currently meet the requirements of UNGA resolutions. There is still no strategy to protect vulnerable marine ecosystems or VMEs.

**Revised Score:**

- **ORH7A**                 **60**
- **ESCR**                 **70**
- **NWCR**                **70**

<b>PI 3.1.4</b>	<b>The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing</b>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	
	<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>	

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 90 score.

MRAG should not just base this information on that produced by Intertek in other MSC Certifications.

The perverse incentives in the system have arisen from the separation of catching entitlements from quota, and the operations where quota manager place incentives on crew to pay deem values. This places an incentive to dump non-quota species or dump low value fish. Only if there is an observer onboard is this incentive reduced.

The reporting rate for marine mammal, seabirds and other protected species is lower on non-observed compared to observed vessels.

**Revised Score:**  
**All Stocks        80**

<b>PI 3.2.1</b>	<b>The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2</b>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>	

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 100 score.

MRAG should not just base this information on that produced by Intertek in other MSC Certifications.

The current Deepwater Management Plan ends at the end of June and currently it is unclear whether there will be a replacement plan. Despite commitments on consultation on reviewing and consultation on these plans at the beginning on 2015 there has been no consultation. We were advised at the end of 2015 that the Ministry was reconsidering the role of management plans.

The Annual Operational Plan process is difficult to influence as it is decided by the industry and the Ministry prior to discussions with other interests.

In ORH7A, the Westpac Bank is outside the NZ EEZ and is subject to the requirements of SPRFMO. There regime that applies is an interim regime only and does not currently meet the requirements of UNGA resolutions. There is still no strategy to protect vulnerable marine ecosystems or VMEs.

SPRFMO has yet to agree to sustainable catch limit for high seas fisheries.

**Revised Score:**  
**All Stocks 80**

<b>PI 3.2.2</b>	<b>The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery under assessment.</b>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>95</b>
<b>CONDITION NUMBER (if relevant):</b>	

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 95 score.

The dispute resolution procedure is a narrow arrangement only applying to disputes between fishers and does not apply to sustainability issues. There is no formal process of appeal from sustainability decisions as occurs under the Resource Management Act.

Many of the issues of concerns to ECO have not been resolved by the decision making process

eg bycatch of marine mammals, seabird or other protected species, benthic impacts of bottom trawling etc. There is no strategy or arrangements to consider these issues.

**Revised Score:**  
**All Stocks 85**

**Evaluation Table for PI 3.2.3**

<b>PI 3.2.3</b>	<b>Monitoring, control and surveillance mechanisms ensure the fishery’s management measures are enforced and complied with</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>		

There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 100 score.

A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted:

*Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge a decline but not consistently throughout the scoring of P2 scoring issues.*

The management of by-catch species and protected species are less well managed than target species with threats from fisheries catching orange roughy. Protected species interactions with fisheries are also managed under the Wildlife Act (seabirds, corals, sharks, and turtles) and the Marine Mammal Protection Act (whales, seals and dolphins) but this has little teeth to control fishing.

The orange roughy fishery has moderate observer coverage which has varied with the most recent year having the lowest level of coverage. Observer coverage can be poor spatially.

While fishers are required to report by-catch of marine mammals and seabirds, as well as quota species, the rate of reporting is low. Only with observers on board is there sufficient information to assess by-catch rates.

Reporting of non-quota management species and non-target fish species (eg corals) relies on reporting from observers.

**Revised Score:**  
**All Stocks 90**

<b>PI 3.2.4</b>	<b>The fishery has a research plan that addresses the information needs of management</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>100</b>

<b>CONDITION NUMBER (if relevant):</b>	
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There are a range of issues that MRAG have not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 100 score.

Firstly the 10 year research plan is ended and is no longer relevant to the research for orange roughy. As we were advised in last year, the proposal for a 5 year extension was considered not to be fundable by the Ministry of Primary Industry (Turner D, Jan 2015). For the last 2 years it has been only ad hoc research projects for deepwater species including orange roughy.

The current annual operational plan for deepwater research for 2015-16 has no directed orange roughy research in the areas proposed.

The operational plan proposed for 2016-17 has one project for orange roughy - North West and East-South Acoustic Survey. At this stage we do not know whether this will occur in the winter of this year.

On this basis a score of 80 or 90 cannot be justified, and the current arrangements are well below a score of 100..

**Revised Score:**

**All Stocks**

- **ORH7A**                **60**
- **ESCR**                **65**
- **NWCR**                **65**

<b>PI 3.2.5</b>	<b>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives</b>
	<b>There is effective and timely review of the fishery-specific management system</b>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	
	<b>70</b>
<b>CONDITION NUMBER (if relevant): .</b>	

There are a range of issues that MRAG have not considered, and the assumptions made, which requires the indicator score to be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet a 70 score.

A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted:

*Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge a decline but not consistently throughout the scoring of P2 scoring issues.*

There is no guarantee the observer coverage will be 20% coverage. Priorities are wider than those for research and management and can within years change priorities.

The targeted observer coverage was not met on the Chatham Rise or in the Challenger fishery

with only 30% of the target being achieved in the Challenger fishery. There were no otoliths collected in 2014-15 in the NW Chatham Rise.

The Annual Review Report is missing key reporting requirements for these UOC. These include:

- Observer targets and biological reporting targets;
- Benthic impact reporting;
- Not delineating orange roughy from other deepwater species (eg cardinal fish and oreos);
- Not dividing between different orange roughy areas including the three UOCs.

It is unclear the status of the current Deepwater Management Plan and research priorities (see response to 3.2.4).

On this basis a score of 80 or 90 cannot be justified, and the current arrangements are well below a score of 100..

**Revised Score:**  
**All Stocks     65**

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## **Independent Adjudicator Directions**

# Objection to the certification of New Zealand Orange Roughy fishery-

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## Directions

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I have received a communication from the certification body requesting an extension of the deadlines issued in the Notice of Acceptance dated 20 June 2016, first on the basis of the timing of receipt of that Notice and second on account of the 4<sup>th</sup> July holiday in the USA.

With regard to the first request, I note that the Notice of Acceptance gives the date of publication as the 20 June 2016. However, as pointed out by the certification body, this was posted on the MSC website at 2.30pm BST/1.30 pm GMT which corresponds to a time in New Zealand of 1.30am on 21 June 2016. The relevant provisions in the objection procedure are:

*CD2.4.6 Where a notice of objection is accepted, the Independent Adjudicator shall promptly notify the CAB, the fishery client(s) and any other objectors, of the objection. The MSC Executive shall also cause a copy of the notice of objection to be posted on the MSC website. The date upon which the notice of objection is posted on the website shall be the “date of publication”.*

*CD2.10.1.4 Any references to time shall, unless it is otherwise specifically stated, be held to be British Standard Time, or during daylight savings, British Daylight Time.*

In my view, the date of posting is that on which the MSC, according to the time zone in which MSC is established, takes the relevant actions to post the information on the website, not the date, according to a differing time zone, on which other persons and entities may view that posting. As such, whether it is GMT or BST which applies to the point at which the MSC posted the Notice, the date of publication remains the 20 June 2016. There is no power for me to extend the deadline of 15 working days from the date of publication which applies to responses by the fishery client and stakeholders. As such, I cannot accede to a request to extend the deadline on this basis.

With regard to the second request, the relevant provision is as follows:

*CD2.10.1.7 Where the time limits prescribed in these procedures do not account for statutory holidays in countries where involved stakeholders reside, the Independent Adjudicator may allow an extension of time limits so as to give effect to the intent of these procedures; that all parties have the nominated number of days within which to respond.*

The statutory holiday, 4<sup>th</sup> July 2016, falls within the period within which stakeholders, the certification body and the fishery have to respond to the objection and as such I do consider it appropriate to delay the relevant deadlines by one working day. Thus, the fishery client and

stakeholders have until 5pm GMT 11<sup>th</sup> July 2016 to respond and the certification body until 5pm GMT on the 18<sup>th</sup> July 2016.

**Melanie Carter**

**Independent Adjudicator**

**29 June 2016**

## **Independent Adjudicator Further Directions**

# **Objection to the certification of New Zealand Orange Roughy fishery-**

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## **Further Directions**

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Further to directions issued yesterday, this document extends the deadline by which parties are requested to respond to the certification body's response (due on 18<sup>th</sup> July 2016).

Thus, as explained in the Notice of Acceptance of the objections, after receipt of the CAB's response the Independent Adjudicator is to consult with the objectors, the subject fishery and the CAB in order to determine whether there is a possibility of a settlement; i.e. whether the differences between the parties may be resolved through a mutually acceptable adjustment to the Final Report and Determination (which may include any additional corrective measures recommended by the certification body, or amendments). If such a settlement is not possible, then the matter will proceed to formal Adjudication.

Clearly, if the parties remain very far apart, the only reasonable way forward would be to proceed to adjudication under CD 2.6 of the Objections Procedure. On the other hand, if there is a possibility that in-depth consultations may be helpful, the possibility should be explored in order to avoid further delays and costs.

The objectors should therefore notify the MSC as soon as possible after receiving and considering the certification body's response and in any event by 5pm GMT 21 July 2016 whether they consider that this provides any reasonable basis for exploring an acceptable solution to the whole or any part of the objections.

If so, arrangements will be put in place for a further exchange of views, including if useful, telephone conferences. Please can all parties ensure that relevant individuals are available for any consultations in the period immediately following the above date.

**Melanie Carter**

**Independent Adjudicator**

**29 June 2016**

## **Independent Adjudicators Directions**

# **Objections to the certification of New Zealand Orange Roughy fishery-**

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## **Change of Independent Adjudicator**

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This notice is further to objections received by the Marine Stewardship Council dated 3 June 2016 from WWF Smart Fishing Initiative and a coalition of Deep Sea Conservation Coalition, Greenpeace New Zealand, Environmental and Conservation Organizations of New Zealand and Bloom Foundation to the proposed certification of the New Zealand Orange Roughy fishery.

This notice is to inform parties and stakeholders that there is to be a change in Independent Adjudicator dealing with these objections. Due to unforeseen personal circumstances, it has become necessary for me to withdraw from these objections and Eldon Greenberg, one of the other Independent Adjudicators will be taking my place.

As the objections are currently awaiting the response by the certification body and I have not had to deal with the determination of any substantive issues, it is to be hoped that this will not cause any inconvenience.

Any matters relating to these objections will from this date on be dealt with by Eldon Greenberg.

**Melanie Carter**

**Independent Adjudicator**

**12 July 2016**

## **CAB response to Notices of Objection**



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**MRAG Response the Notices of Objection  
WWF and DSCC  
New Zealand Orange Roughy Fisheries  
18 July 2016**

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**Introduction**

The following report provides the MRAG Americas (the Certification Body) response to the objections (the Objection Process <http://www.msc.org/get-certified/fisheries/assessment/objections>) to the Marine Stewardship Council (MSC) certification of the New Zealand Orange Roughy Fisheries. Objections were

submitted by WWF and by DSCC on 3 June 2016 and reviewed and accepted by the MSC appointed Independent Adjudicator (IA) on 20 June 2016.

The MSC Objections Procedure allows for the IA to remand the determination to the Certification Body (CB) if he or she determines that:

a) There was a serious procedural or other irregularity in the fishery assessment process that made a material difference to the fairness of the assessment; or (i.e., Part Four of the Objection)

b) The score given by the CB in relation to one or more performance indicators cannot be justified, and the effect of the score in relation to one or more of the particular performance indicators in question was material to the outcome of the Determination because:

i) The CB made a mistake as to a material fact; or

ii) The CB failed to consider material information put forward in the assessment process by the fishery or stakeholder; or

iii) The scoring decision was arbitrary or unreasonable in the sense that no reasonable CB could have reached such a decision on the evidence available to it; (i.e., Part Five of the Objection) or

c) It is necessary to remand the Determination in order to enable the CB to consider additional information described in Section 4.7.5 (b) and described in the notice of objection (i.e. Part Six of the Objection).

WWF raised issues with Parts four, five, and six of the Objection Process, but not Part 7. DSCC raised issues with Parts four, five, six, and seven of the Objection Process. The Independent Adjudicator requested clarifications/additional information from DSCC, which DSCC provided. The MRAG Americas assessment team has therefore responded here to the issues raised under all Parts of the Objection Process.

The assessment team wants to lay out for the readers of this response how carefully we have approached this assessment, particularly in recognition of the high degree of concern on the part of stakeholders about fishing impacts to these important and sensitive stocks, habitats and ecosystems. We have known from the beginning that substantial opposition would arise to the certification of any New Zealand orange roughy stock. The assessment team approached each scoring decision rigorously, and made sure to follow the requirements of the MSC to assure that we had evidence to support our scoring decisions. Because a response to an objection requires us to vigorously defend our positions against specific challenges, we do not want to leave any impression to the readers of this document that we are somehow insensitive to or in any way discounting the genuine concern that the stakeholders have. Rather, the team was fully aware of these concerns dating back to stakeholder responses to the pre-assessment we completed in 2013, to the numerous stakeholder submissions up to and including the objections, and each time have carefully and with open minds considered the arguments and information submitted. We fully understand the importance of getting this right and have worked very hard to provide a careful, unbiased and fact-based assessment using evidence to support our findings.

The assessment process has been among the most open and transparent of the assessments that MRAG has done, at the request of the Deep Water Group (DWG), the client. The DWG opened all meetings of the site visit to any stakeholder so that all concerned could learn from and question the experts who presented information on stock status and harvest strategy, on the various ecosystem components, and on the management system. However, MRAG is aware that not all stakeholders want to discuss all issues in public and agreed to private meetings when requested. We emphasized to all concerned that the assessment team would not use non-public submissions in the assessment report, but would use non-public information as background for further investigation. During the site visit, the assessment team asked for additional information to support our analyses; as this assembly of information took several months, we announced a 30-day additional information gathering period after all the information became available and offered an additional 30-day period for stakeholders to comment on this information. DWG assembled a comprehensive set of documentation that it made public on its website <http://deepwatergroup.org/certification/>.

Therefore, it is clear that the Client and the MRAG assessment team went to extreme measures to provide all research conducted for the fisheries relevant to the MSC assessment, to learn of stakeholder concerns, and to gather all available information. The assessment team took great care to address these concerns completely in the assessment report; in two cases, scoring changes resulted, and in numerous cases, additional clarifications or details were added to strengthen the assessment report. The fact that we did not accept all of the recommendations of the stakeholders does not mean that we have not taken them seriously or that we have made an error or that we have acted unreasonably.

## **Background**

MRAG Americas, Inc. is a certification body accredited by Accreditation Services International for MSC fisheries and chain of custody assessments. MRAG is a highly respected independent consulting company with a reputation for objective and science based analysis. MRAG selected an assessment team of the highest quality. Collectively, the assessment team members have experience with numerous full and pre-assessments as team members and peer reviewers, have consulted with MSC to provide advice on revisions to policy and standards, have conducted research for the MSC on specific topics, and have received training from the MSC on fishery assessments. We refer the IA to the CVs presented in the assessment downloads for this fishery.

MRAG Americas was very aware of the issues raised by the Objectors and, as will be described below, we have addressed them in detail in the Public Comment Draft Report (PCDR) and Final Report and Determination.

## **Response to objections**

### **General Points on Uncertainty**

Many of the comments received on the New Zealand orange roughy certification assessment center on the degree to which uncertainties were considered in the scoring. In some cases it seemed that the concern from WWF and DSCC was that additional sources of uncertainty could have been discussed individually. In other cases, the concern from WWF and DSCC seems to be that the scoring was overly optimistic, given the general extent of uncertainty. In

addition to case-specific responses to the individual comments received, it seems efficient for the assessment team to explain the context for our scoring.

Two points were foundational in our conduct of this assessment. First, there is some uncertainty in every aspect of any marine resource assessment; uncertainty about the values of all relevant biological and oceanographic processes and parameters, uncertainties about cause-effect relationships, and uncertainties about future states of nature due to environmental variability. However, many sources of uncertainty are treated explicitly in stock assessments, impact assessments, or these certification assessments; a creative biologist can always come up with some source of uncertainty that was not yet treated explicitly. Second, we assume that the 100 scoring guideposts were intended to be an attainable score for a scientifically sound assessment in a realistically data-rich condition.

Combining those two points, we concluded that a high score, even 100, could be given to a fishery *without* explicitly considering every imaginable source of uncertainty. Moreover, the sources of uncertainty that were addressed would not have to be added to every single parameter of every computation done in the assessment. In fact one of the key features of the Management Strategy Evaluation (MSE) frameworks used extensively now as the basis for advanced fisheries assessments and management processes is that they can provide realistic output measures that capture the range of uncertainties affecting the performances of candidate management strategies in ways that are manageable to conduct and interpret. Performance tests, including scenario-based simulations and retrospective analyses, both in general for MSE methods and in particular for orange roughy, attest to their effectiveness. If soundly conducted, these applications are considered to be robust in their estimates of the magnitude of uncertainties that need to be taken into account in management.

The exact language of the 100 Guidepost is not identical in performance indicators and scoring issues where uncertainty is a consideration. However, looking at some examples, key phrasing appears each time that gives insight into what we interpret as the intent of the criteria and scoring guideposts: Examples include:

- 1.1.1 “There is a high degree of certainty that the stock has been fluctuating ...”;
- 1.2.2b “The design of the harvest control rules takes into account a wide range of uncertainties”;
- 1.2.4a “...takes into account the major features relevant to the biology of the species and the nature of the fishery”;
- 2.1.1 “There is a high degree of certainty that retained species ...”;
- 2.1.2 “Testing supports high confidence that the strategy will work ...”  
– and repetitions of those phrases in the other corresponding parts of P2.)

If 100 is taken to be an attainable score, when would we have “a high degree of certainty” or “high confidence” and what constitutes “a wide range of uncertainties” and “the major features”? Those are indeed judgement calls, and views may differ among perspectives. However, we are satisfied that there is a “high degree of certainty” from suitable results, if the most contemporary analytical methods were applied and interpreted correctly to data that were collected systematically and with methodological rigor. We are satisfied that a sufficiently wide range of sources of uncertainty were considered if the main biological parameters of the target or bycatch species were characterized, and known causes of variation in those parameters were included in some analytically appropriate way. Having examined the methods and data from our own expertise, and the reviews by the New Zealand stock assessment process, we can conclude that those conditions are often met. It was that context that guided our scoring throughout this assessment. If some of the stronger parts of this certification assessment

cannot meet those standards, then we conclude that the 100 Guidepost is an unattainable score for any fishery, given the realities of the variable ocean.

## Part Four Procedural Errors

In the following sections, for ease of identification, the MRAG Americas assessment team has appended specific responses to the objection text in shaded boxes. The team has identified the Objector in each case.

### WWF Comments

<b>Procedural Error #1 – Serious or Irreversible Harm</b>
<p><b>Affected PIs: 2.4.1</b></p> <p>WWF believes that MRAG has misinterpreted and misapplied the MSC definition of “Serious or Irreversible Harm” (SolH) in their assessment of the habitat component. This procedural error made a material difference to the fairness of the assessment in relation to scoring of PI 2.4.1.</p> <p><u>Misinterpretation:</u></p> <p>We assert that the CAB has interpreted MSC guidance too narrowly, as if it were intended to mean that SolH should only be inferred when one or more of the ecological impacts listed in MSC Guidance GCB3.2 (trophic cascades, local extinctions and so forth) is plainly evident. WWF contends that the list of examples of SolH given by MSC was not intended to be exhaustive, nor was it meant to be the starting point for asking whether impacts are serious or irreversible.</p> <p>WWF asserts that trawl impacts to deep sea habitats - particularly Vulnerable Marine Ecosystems (VMEs) - easily fulfill the MSC definition of serious or irreversible harm by virtue of meeting the criterion given in the second bullet point of GCB3.2: trawl impacts are “...effectively irreversible on time-scales of natural ecological processes.” Clark <i>et al.</i> (2016) estimate that recovery times for impacted megabenthos “are likely to span centuries to millennia” for many communities. Studies done in the region support the conclusion that recovery from benthic trawling is very protracted (e.g. Koslow <i>et al.</i> 2001, Clark and Rowden 2009, Althaus <i>et al.</i> 2009, Williams <i>et al.</i> 2010, Clark <i>et al.</i> 2015). To re-state this point: there is an abundance of scientific evidence to support the determination that the fishing method used by the subject fishery causes “irreversible harm” to deep sea habitats in the sense of the MSC definition. Any other conclusion would be unreasonable or arbitrary.</p> <p><u>Misapplication:</u></p> <p>The assessment team concludes that the fishery exceeds the SG80 level because there is “no more than a 30% probability that the true status of the component is within the range where there is risk of serious or irreversible harm.” The scoring rationale for PI 2.4.1 considers various lines of evidence, but the logic of their argument is framed by the notion that “high impact over a small proportion of the area is equivalent to low impact over a large proportion of the area” (FRvol2., p. 206-207). Or as one could re-phase it, “severe but small impacts are quickly diluted in a large ocean.”</p> <p>We feel that the CAB’s argument for the absence of SolH is severely flawed on a number of different levels (as outlined below). These levels are like a pyramid - one layer built atop another - making it difficult to cleanly separate one problem from the next.</p>

1) Time: MRAG did not consider trawl impacts over the history of the fishery (see Procedural Error #2). Consequently the CAB underestimates the actual amount of harm done by the fishery and overestimates the current status of habitats.

2) Space: MRAG drew a very large perimeter around habitats so as to encompass the whole Kermadec bioregion. The UoCs occupy a relatively small area (mostly FMAs within the New Zealand EEZ). Thus, selection of a large bioregion has reduced the fishery's proportional contribution to habitat impact. At the same time, assessing the 'true' status of habitat across the larger area has become more speculative and we must question whether selection of the Kermadec bioregion was an appropriate action (see Procedural Error #7). The MSC Guidance to CRv1.3 (GCB3.2, GCB3.14.2) clearly states that "local extinction" and "significant alteration of habitat cover/mosaic" should be considered, and under the broad Kermadec designation this level of detail has been glossed over.

3) Precision: MRAG presumed that the system for delineating and mapping habitats is accurate. We question this conclusion (see Scoring Error 7). We believe that uncertainty in habitat distribution was not adequately considered in the scoring process.

4) Logic: MRAG used estimates of trawled or untrawled area relative to total habitat area to derive the percentage of impacted habitat. Percentages of habitat were then assessed directly against probability levels (e.g. There is no more than a 30% probability that the true status of the component is within the range where there is risk of serious or irreversible harm). This conflates two different concepts, area and statistical probability, without presenting scientific evidence that the estimations are correct.

5) True Status: Absent from the CAB's argument is any quantitative evidence to establish the "true status" of the relevant habitats across the designated bioregion. Given our imperfect understanding of habit distributions in the deep sea (see Procedural Error 7), and what appears to be an absence of synoptic data for habitat status, it is unclear how the CAB could assign such certainty.

We believe that the misinterpretation and misapplication of SoIH by MRAG is a substantial procedural error that made a material difference to the fairness of the assessment and the scoring of PI 2.4.1.

#### References:

Althouse, F., Williams, A., Schlacher, T.A., Kloser, R.J., Green, M.A., Barker, B.A., Bax, N.J., Brodie, P. and Schlacher-Hoenlinger, M.A. (2009) Impacts of bottom trawling on deep-coral ecosystems of seamounts are long-lasting. MEPS Vol. 397: 279–294.

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. ICES Journal of Marine Science, 73: i51–i69.

Clark, M., Anderson, O., Dunkin, M., Mackay, K., Notman, P., Roux, M-J. & Tracey, D. (2015) Assessment of orange roughy and oreo trawl footprint in relation to protected coral species distribution. MSC P1 2.3.1. February 2015. NIWA Client Report No: WLG2014-56 prepared for Deepwater Group Limited. 57 p.

Clark, M.R. and Rowden, A.A. (2009) Effect of deepwater trawling on the macroinvertebrate assemblages of seamounts on the Chatham Rise, New Zealand. *Deep-Sea Research I* 56: 1540–1544.

Koslow, J.A., Gowlett-Holmes, K., Lowry, J.K., O’Hara, T., Poore, G.C.B. and Williams, A. (2001) Seamount benthic macrofauna off southern Tasmania: community structure and impacts of trawling. *Mar Ecol Prog Ser* 213:111–125.

Williams, A., Schlacher, T.A., Rowden, A.A., Althaus, F., Clark, M.R., Bowden, D.A., Stewart, R., Bax, N.J., Consalvey, M. and Kloser, R.J. (2010) Seamount megabenthic assemblages fail to recover from trawling impacts. *Marine Ecology* 31 (Suppl. 1):183–199.

### **Relevant MSC Requirements or Guidance in force at the time of the assessment**

MSC Guidance to CRv1.3

GCB3.2 General Requirements for Outcome PIs

The Outcome PI provides a measure of the status of each component. For most fisheries this single indicator will reflect the interactions of the fishery with many species and species groups within the P2 component.

For the Habitats and Ecosystem components, the concept of ‘serious or irreversible harm’ refers to change caused by the fishery that fundamentally alters the capacity of the component to maintain its function or to recover from the impact.

- This may also be interpreted as seriously reducing the ecosystem services provided by the component to the fishery, to other fisheries and human uses.
- Irreversible harm from fishing includes very slowly reversible harm that is effectively irreversible on time-scales of natural ecological processes (e.g. natural perturbation, recovery and generation times in the absence of fishing, normally one or two decades but may be shorter or longer depending on the species and ecosystem concerned).
- Examples of serious or irreversible harm include local or global extinction, serious recruitment overfishing, habitat loss on scales that have widespread detrimental consequences for the ecosystem services provided by the habitat (e.g. gross change in species composition of dependent species), and loss of resilience resulting in trophic cascades, fishery mediated regime shifts, etc. Explicit targets may not be appropriate or available for all of the components, in some cases because there is no scientific or general consensus on appropriate targets.
- While performance in relation to targets can be introduced where appropriate, the generic performance requirements relate to increasing confidence and safety margins with which serious or irreversible harm is avoided, including through the management tools, measures and strategies that are in place.

And

GCB3.14.2 Examples of serious or irreversible harm include the loss (extinction) of habitat types, depletion of key habitat forming species or associated species to the extent that they meet criteria for high risk of extinction, and significant alteration of habitat cover/mosaic that causes major change in the structure or diversity of the associated species assemblages.

Note: SolH is defined differently for retained & bycatch species vs. Habitats+Ecosystems.

MRAG Response: While the objector cites a selection of clauses within the GCR pertaining to assessing habitat outcome to support their arguments above, for the assessment team, it is essential to consider the full set of requirements (in the CR v1.3) and accompanying guidance in the GCR to come to sound and reasonable assessment decisions. Before addressing each of the objector's contentions, we provide the full excerpt from the relevant sections of the MSC CR and GCR that have had bearing upon our scoring decisions for this PI (**emphasis added**):

The MSC requirements pertaining to assessing Habitats Outcome in CR version 1.3 are as follows:

CB 3.14.1 The team shall assess the habitats component in relation to the effects of the fishery on the structure and function of the habitats impacted by the fishery

*[for which there is extensive guidance in the GCR explaining how habitat types can be defined using the “substratum, geomorphology, biota (SGB)” system. In addition, guidance is provided stating “while the productivity and regenerative ability of biogenic habitats would affect their resilience under fishing, and may be useful surrogates for consideration of status and reversibility, **it is the ecological function of the habitat and the ecosystem services that it provides that is the intent of assessment.**”]*

CB3.14.2 The team shall use these interpretations:

CB3.14.2.1 Serious harm means gross change in habitat types or abundances, and disruption of the function of the habitats.

CB3.14.2.2 Irreversibility means changes that are expected to take much longer to recover than the dynamics in un-fished situations would imply, **some sort of regime change is implied from which recovery may not automatically occur.**

*[The corresponding guidance for this clause has been quoted by WWF above (GCB3.14.2)]*

CB3.14.3 **The team shall consider the full extent of the habitats when assessing the status of habitats and the impacts of fishing, and not just the part of the habitats that overlap with the fishery.**

*[The corresponding guidance in the GCB states, “For example **if a habitat extends beyond the area fished then the full range of the habitat should be considered when evaluating the effects of the fishery. The ‘full range’ of a habitat shall include areas that may be spatially disconnected from the area affected by the fishery and may include both pristine areas and areas affected by other fisheries.**”]*

CB3.14.5 The team shall interpret the terms “unlikely”, “highly unlikely” and “evidence for” in SG60, SG80 and SG100 as in Table CB18. [Table CB18 states that those terms mean no more than a 40%, 30% and 20% probability that the true status of the component is within the range where there is a risk of serious or irreversible harm, respectively].

CB3.14.6 The team should make sure that:

CB3.14.6.1 Where the team uses qualitative analysis and/or expert judgements in scoring a fishery at the 60 and 80 SGs this should be equivalent to the quantitative probability interpretation given in Table CB18.

- a. The justification for equivalence shall be provided
- b. A range of informed viewpoints or alternative hypotheses may be used to make qualitative judgements about the probability interpretation of the SG.
- c. The team may consider using the SICA to assess these PIs as a means of obtaining a range of viewpoints and construction the probability interpretation of the SG.

WWF references GCB3.2, but takes material out of context. MRAG acknowledges the very long time scales for recovery of most deepwater corals; however, bullet 2 of GCB3.2 must be considered at the scale and intensity of the fishery. As we have demonstrated, the scale of the management area is substantially greater than the scale of the damage to habitats. This is relevant to the third bullet point of GCB3.2 and to GCB3.14.2. We conclude that the damage to habitats, while severe at the scale of the damage, does not rise close to the concepts represented by “local or global extinction, serious recruitment overfishing, habitat loss on scales that have widespread detrimental consequences for the ecosystem services provided by the habitat.” Applying bullet point 2 but not considering bullet point 3 and GCB3.14.2 distorts the intent of the MSC in PI 2.4.1.

The assessment team notes that CR v1.3 does not reference vulnerable marine ecosystems. References to VME are not relevant to this assessment.

The following are the CAB responses to the specific numbered arguments given by the objectors:

1. Time: As explained again under the response to Procedural Error #2 below, The assessment team took the decision to use the most recent 5 years of the dataset on trawl footprint in relation to assessing the likelihood of the fishery to reduce habitat structure and function to a point where there would be serious or irreversible harm, as required by PI 2.4.1. This is because the activity of this fishery in the more recent past more closely matches the current activity. This is reasonable because the outcome PI is clearly designed to assess current likelihood of the fishery to cause harm, as indicated by the use of the present tense “does” and “is” in the PI and scoring guideposts, rather than assessing the impact of the actions of the fishery up to 20 years ago, when there have been many changes in the meantime.

2. Space: The MSC requirements specifically indicate in PI 2.4.1 that habitats are to be considered on a regional or bioregional basis. In this case we are fortunate to have a relatively data-rich situation where the Kermadec bioregion is well defined and there is a good map showing the distribution of Underwater Topographical Features (UTFs) and other habitat features throughout this bioregion including the distribution of the main coral groups as well as the orange roughy habitat distribution (Roux et al, 2015; Tracey et al, 2015). With this information, together with the MSC requirement given in CB3.14.3, the assessment team determined that it is reasonable and appropriate to use the UTF habitat within the Kermadec bioregion as the basis for which to determine the impact of the Orange Roughy fishery within the Units of Assessment.

3. Precision: Although there is uncertainty when considering any information in this underwater context (see general discussion of uncertainty, above), as mentioned under 2), the habitat distribution maps of the NZ EEZ and Kermadec bioregion available to the assessment team are considerably better information on habitat type and distribution than is available in most regions of the world. Moreover, even considering that this information may not be 100% accurate given inherent uncertainties, the scale and extent of the fishery within the UoAs is small enough within the overall extent of the habitat that the conclusions of the team are reasonable even if one assumed the habitat mapping were extremely inaccurate. However, we determined the maps are reasonably accurate upon review of the methods used in creating them.

4. Logic: We understand the point of the objectors here, but made use of CB3.14.6 in this case because we did not have direct information as to the quantitative probabilities of impact to the true status of the component. Therefore we used degree of footprint overlap as a reasonable proxy of probability of impact and explained this in our rationale as required by CB3.14.6.1

5. True status: See explanation under 4), logic, again with reference to CB3.14.6.

## **Procedural Error #2 – A complete historical perspective**

### **Affected PIs: 2.4.1, 2.3.1, 2.5.1**

The MRAG assessment team took the wrong view of historic data by under-emphasizing the historical record of trawl impacts to deep sea habitats. In our comments on the PCDR, WWF challenged how the CAB had treated the time-series data for trawl footprints in the UoCs. In their rebuttal to our comments (FRvol2, p. 214), MRAG defended their decision to truncate the dataset at an arbitrary point in the recent past (five years ago) because they had inferred that MSC intends for teams to evaluate the “current state” of the fishery. However, MSC requirements in CRv1.3 are actually quite clear on this topic (CB3.2.2): The CAB shall consider outcome status (i.e. the present condition) and the resilience of historical arrangements to function adequately (i.e. what happened in the past) in order to make an inference about the likelihood that management delivers low risk going forward (i.e. likely future condition).

It is apparent from the conclusions of a recent report that was a primary source for the assessment that MRAG’s approach is contrary to scientific advice. Clark *et al.* (2015, p.34) conclude that: “The footprint has reduced considerably over time and the proportions for the last 5 years are less than for all years. However, given the slow growth rates of almost all ETP coral species, and growing evidence that, at least for UTF populations, the main coral species cannot recover rapidly, the extent of the full footprint is probably more realistic for interpreting the extent of impact. The repetitive nature of much of the trawling footprint implies that where fishing has occurred, damage to the ETP coral assemblages is likely to have been considerable.”

We believe that, if habitat outcome had been assessed according to MSC rules, the historic record would show clearly that implementation of so called “measures” for habitat protection over the past 20+ years have resulted in serious trawl damage to a substantial amount of deep sea benthic habitat in each of the UoCs. This evidence casts doubts on any assertions by the team about the effectiveness of those measures to deliver low risk to habitats under future conditions. WWF asserts that this procedural error - truncating a time series of data to emphasize the recent past - has made a material impact to scoring of the outcome PI for habitat, and possibly also to some degree affected the scoring of outcome PIs for ETP corals and ecosystems where the CAB also relied on a truncated dataset to support their conclusions.

See also Procedural Error #1.

#### References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. *ICES Journal of Marine Science*, 73: i51–i69.

Clark, M., Anderson, O., Dunkin, M., Mackay, K., Notman, P., Roux, M-J. & Tracey, D. (2015) Assessment of orange roughy and oreo trawl footprint in relation to protected coral species distribution. MSC P1 2.3.1. February 2015. NIWA Client Report No: WLG2014-56 prepared for

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

MSC Guidance to CRv1.3

CB3.2 General Requirements for Outcome PIs

CB3.2.2 The team shall consider both the current outcome status and the resilience of historical arrangements to function adequately and deliver low risk under future conditions when scoring outcome PIs.

MRAG Response: The clause from CB3.2.2 does not mean that the team must consider the past to determine the current status. “The team shall consider both the current outcome status and the resilience of historical arrangements to function adequately and deliver low risk under future conditions when scoring outcome PIs.” This clause has two parts: 1) current outcome status and 2) resilience of historical arrangements to function adequately and deliver low risk under future conditions (emphasis added). The MSC does not require considering the past to determine current outcome status, but that past success can suggest future success. The MSC Interpretations Log confirms this:

***Interpreting SA 3.2.2***

*How should the CABs interpret the old requirement: SA3.2.2 The team shall consider both the current outcome status and the resilience of historical arrangements to function adequately and deliver low risk under future conditions when scoring outcome PIs. How does this differ from what is considered in management?*

***1 Answer***

*This is a carryover from CR v1.3 which, with hindsight, should have been deleted in FCR v2.0, and could be ignored. Consistent with P1, current stock status is scored in the outcome PIs in both P1 and P2, while the prospects for the future are scored in the management component/PIs.*

The assessment team took the decision to use the most recent 5 years of the dataset on trawl footprint in relation to assessing the likelihood of the fishery to reduce habitat structure and function to a point where there would be serious or irreversible harm, as required by PI 2.4.1. In addition to the above, this is because the activity of this fishery in the more recent past more closely matches the current activity. This is reasonable because the outcome PI is clearly designed to assess current likelihood of the fishery to cause harm, as indicated by the use of the present tense “does” and “is” in the PI and scoring guideposts, rather than assessing the impact of the actions of the fishery up to 20 years ago, when there have been many changes in the meantime.

**Procedural Error #3 – Key scoring information was confidential**

**Affected PIs: 2.3.1, 2.4.1**

In assessing fishery impacts to ETP corals and habitats, MRAG’s justification for assigning high scores has been based on the argument, presented in one form or another, that the areal extent of habitat impact is smaller than might be predicted from trawl frequencies alone because the fishery tends to operate along “established tow lines.” In other words, they argue that the trawling footprint is effectively frozen (at least for UTF habitats), being restricted to habitats that are already impacted.

In our review of the PCDR we were extremely critical of this conclusion because the CAB did not substantiate their assertions with hard evidence (e.g. quantitative data, analyses, results of modeling studies). To us, it appears that that their argument was based on opinion and anecdote rather than demonstrable fact.

In response to our comments on the PCDR, it came to light that the assessment team's conclusion about the fishery following established tow lines was reached after they had viewed "confidential tow-by-tow information" (p. 186, Frvol2) – information that was not made available in the PCDR nor Final Report. This information is key in the sense that it "...is necessary for a stakeholder that is not party to this information to be able to properly review the logic used by the team in their conclusion about a particular performance indicator score" (MSC definition).

The practice of using confidential information to score a fishery lacks transparency and runs contrary to MSC rules. Further, it puts stakeholders at a significant disadvantage because we are unable to properly review the logic used by the team in their conclusions. As a major stakeholder in this assessment, WWF must insist that no confidential information is admitted as assessment evidence unless it has been handled in a manner consistent with MSC rules.

This procedural error had a material impact on the fairness of the scoring of at least two performance indicators. The CAB refers to established tow lines as part of the justification for scoring decisions in the scoring rationales for both PI 2.3.1 and PI 2.4.1.

### **Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3

24.5 Access to information

24.5.1 The CAB shall ensure that un-published key information necessary to enable a stakeholder who is not party to this information to be able to properly review the logic used by the team in their conclusion about a particular PI score is made available electronically, in printed form or otherwise for viewing by stakeholders.

24.5.1.1 The CAB shall make un-published key information available before the posting of the Public Comment Draft Report, and shall ensure that the information is available throughout the subsequent stages of the assessment process until such time as a certification decision is made.

Also see MSC requirements relating to the use of confidential information in fishery assessments (G24.4) and associated guidance:

G24.4 Stakeholders play an important role in reviewing the results of assessments through the review of assessment reports. This process allows stakeholders to review the scores determined for assessing the performance of the fishery, and the rationale supporting those scores. Access to the information upon which a fishery's performance has been assessed is crucial in ensuring stakeholders are able to properly review assessment reports.

The need to ensure that transparency is afforded around all aspects of the assessment process is essential to ensuring that the benefits of stakeholder engagement in the process are delivered.

Annex AA: MSC-MSCI Vocabulary –Normative

Key Information

Information, including concerns and knowledge, which is necessary for a stakeholder that is not party to this information to be able to properly review the logic used by the team in their conclusion about a particular performance indicator score.

MRAG Response: CR 24.3.3.3 expressly allows exclusion from public release any information that is the subject of relevant national privacy or data protection legislation in the client's country, so the assessment team kept information on individual tow lines confidential. We recognize that stakeholders might have concerns about our interpretations of the impacts of the tow lines on UTFs. To address this concern, we suggest that MPI/DWG could send the Independent Adjudicator the confidential data with the confidential tow lines with some background for interpretation for review to determine whether this information is germane to the objectors. If the IA, perhaps in consultation with a technical expert, concludes that it is not germane and that objective scientists would not likely reach a conclusion different from that of the assessment team, the IA could report that conclusion to the stakeholders and the information would remain restricted. If the IA concludes otherwise, the client would explore options for some level of viewing the information while maintaining confidentiality.

**Procedural Error #4 – Clear separation of fact from opinion**

**Affected PIs: 2.3.1**

In reviewing scoring rationales for PIs where evidence was equivocal or unavailable, it was perhaps not surprising to find that WWF and MRAG fundamentally disagreed on how to interpret the absence of evidence. We believed that our debates came down to a difference of opinion. However, we were quite surprised to see that MRAG often, it seems, also placed their own team's views in front of the opinions of leading experts. It is a curious role reversal because an assessment team is tasked with assessing the best available science - not refuting it. But this was apparently the case for PI 2.3.1 (see WWF comments on PCDR) wherein the debate was over whether or not there is potential for trawl-generated sediment plumes to have indirect impacts to ETP corals.

Table. Differing views about potential indirect effects of trawling on ETP corals (PI 2.3.1c)

Indirect effect of benthic trawling	Experts *	MRAG
Quantitative info available for shallow systems? (fact)	Yes	Yes
Quantitative info available for deep sea? (fact)	No	No
Potential for impact in the deep sea? (an opinion)	Yes	<b>No</b>

\*Experts are listed in the references below.

If MRAG had clearly separated fact from opinion in their assessment report (e.g. scoring rationale for PI 2.3.1c and elsewhere), we believe the disparity between the team's view and that of prevailing scientific opinion would have been laid bare, and it would then be incumbent upon the CAB to justify why the team reached a different viewpoint than many of the world's leading experts in the subject area.

We note that the assessment team is required to clearly and concisely separate fact from opinion in the assessment report. WWF asserts that the team did not follow this rule for at least one performance indicator. This procedural error made a material difference to our ability to properly review the logic used by the assessment team in reaching decisions about particular performance indicators. By extension, the procedural error materially affected the fairness of

the assessment.

Also see Scoring Error #4 and #5.

#### References

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. – ICES Journal of Marine Science, 73: i51–i69.

Clark, M. and Anderson, O. (2013) Information on the Structure and Function of UTF Habitats. NIWA presentation to Deepwater Group Ltd. 54 p.

Clark, M., Anderson, O., Dunkin, M., Mackay, K., Notman, P., Roux, M-J. & Tracey, D. (2015) Assessment of orange roughy and oreo trawl footprint in relation to protected coral species distribution. MSC P1 2.3.1. February 2015. NIWA Client Report No: WLG2014-56 prepared for Deepwater Group Limited. 57 p.

Consalvey, M., MacKay, K. and Tracey, D. (2006) Information review for protected deep-sea coral species in the New Zealand region. NIWA Client Report: WLG2006-85. NIWA Project: DOC06307. November 2006. 58 p.

#### Relevant MSC Requirements or Guidance in force at the time of the assessment

MSC Code of Conduct (v1.0):

MSC audit personnel will:

4.4 Separate fact from opinion clearly and concisely in their audit / assessment reports.

CRv1.3

6.1.1 CABs shall ensure that CAB lead auditors, CoC auditors, group CoC auditors, fishery team leaders and members:

6.1.1.1 Have signed the MSC's Code of Conduct (available on the MSC website) confirming that they will comply with the Code.

MRAG Response: The MRAG assessment team denies that it put personal opinion ahead of evidence for any performance indicator. We stated in the justification to PI 2.3.1 c “Regarding corals, studies as reported in MPI (2015) show the possibility of indirect trawl impacts on corals created from the trawl ‘sediment plume,’ particularly over soft substrates.” Therefore, in the third row of the WWF table above, the **No** under MRAG should be **Yes**. Clarke *et al.* (2015) state that “*The effects will be less on UTFs with coral assemblages than on the slope, as UTF substrate is typically rocky, with only small patches of interspersed soft sediment.*” We point out in PI 2.3.1 c that “*heavily fished UTFs contain diverse assemblages of corals and other epibenthic fauna and no difference in species numbers or community structures in coral-dominated UTFs within or outside of protected areas (coral dominance indicated no or only light fishing) has been observed (Consalvey, 2006; Clark et al., 2015b).*” This could not happen if sediment plumes had unacceptable impacts. Similarly, we note that suitable habitat for corals in areas of soft sediment will tend to be restricted to patches of hard substrate within the larger area of soft sediment. The density of corals in soft substrate areas will be lower than in hard

substrate areas. Thus, the highest densities of corals in fished areas will be found in hard substrate (i.e. typically UTF) areas, and corals at risk of impacts from sediment plumes will be at lower densities and thus any impacts at a population level will be relatively smaller. The scale, spatial extent and specific localities of each fishery are important when compared to the spatial extent of the habitat type that supports coral. The area of overlap being relatively small, potential impacts of disturbed sediment on coral at a population level will also be small. Together these statements provide justification that “Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.”

**Procedural Error #5 – Default tree: clarification changes intent at SG100**

**Affected PIs: 2.4.2c**

Although the subject fishery has only a few weak measures in place for managing impacts to habitats, MRAG scored the fishery as attaining the SG100 level of PI 2.4.2c. WWF commented on this during PCDR review. We asserted that a partial strategy cannot be said to meet the SG100 level because the scoring guidepost clearly stipulates that “there must be clear evidence that the strategy is being implemented.”

In the CAB’s rebuttal (FRvol2, p. 204), they explained that “Regarding scoring issue (c), the assessment team received clarification from MSC (and this has also been reflected in the language of this scoring issue in v2.0 of the standard), that we are to evaluate evidence of effectiveness of the partial strategy or strategy.” MRAG seems to be referring to the default tree published in FCR2.0, wherein MSC lowered the bar for evidence needed to demonstrate an effective strategy. In FCR2.0, scoring issue c of PI 2.4.2 says (SG100): “There is some quantitative evidence that the measures/ partial strategy is being implemented successfully.”

MRAG has repeatedly stated in the assessment report that this fishery was assessed against the default tree using CRv1.3, and hence the new fishery requirements and default tree (FCR2.0) do not apply to this fishery. As such, we would argue that it is inconsistent of the CAB to use the SG100 guidepost from the new standard (or use a “clarification” that has the same effect). Furthermore, WWF believes that this action does not follow MSC rules. CABs are not allowed to swap trees after the start of the assessment (27.8) - certainly not at this late stage in the process. We assert that this unfair action made a material difference to the scoring of PI 2.4.2.

With respect to the possibility that MSC has given MRAG direction on their intent in applying the default tree, there is no published variation request which has been approved by MSC. We are unaware of any “clarification” mechanism which would enable a CAB to selectively choose pieces from the new standard. If selective clarification of the default tree is a real possibility (and we seriously doubt that it is), then WWF chooses to use MSC’s recent clarifications for “Serious or Irreversible Harm” and “VMEs” from FCR2.0.

Note1: At the start of the assessment, WWF suggested modifying the default tree to the suit the specific characteristics of the NZ orange roughy fishery (July 17, 2014), but MRAG assured us that “...changes to the assessment tree...will not improve the results of the assessment.” On July 21, 2014, MRAG confirmed that they would use the MSC Certification Requirements v1.3 and the default assessment tree.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3, Default assessment tree

PI 2.4.2c

There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types.

SG80 There is some evidence that the partial strategy is being implemented successfully.

SG100 There is clear evidence that the strategy is being implemented successfully.

FCR2.0, Default assessment tree

SG100 There is some quantitative evidence that the measures/ partial strategy is being implemented successfully.

27.8 Confirming the assessment tree to be used

27.8.2 CABs shall use the structure and the default set of PISGs in the default tree as set out in Annex CB in all assessments unless:

27.8.2.1 The CAB submits a variation request to the MSC by following the procedure set out in Part A, clause 4.12, and;

27.8.2.2 The MSC accepts the variation request

27.8.3 The team shall review all available data from the pre-assessment and application, and the default tree contained in Annex CAB, and shall confirm whether or not the default tree will meet the specific characteristics of the fishery under assessment or it needs amendment.

Note: It is unclear how to us how MSC could have provided “clarification” to the CAB about which tree version they should use in the fishery assessment. The standard setter does not engage directly in fishery assessments and no such mechanism is described in CRv1.3. We acknowledge that MSC rules (e.g. 27.8.3.1) do allow CABs to modify the default tree through a defined variation approval process (27.8.3.1) but there is no indication that MRAG pursued this pathway.

MRAG Response: The wording in the assessment tree v1.3 differentiates the SG 60, 80, and 100 for Scoring Issue A by requiring “measures,” a “partial strategy,” or a “strategy,” respectively, that is expected to achieve the habitat outcome 80 level of performance or above. These terms are well defined in the MSC glossary. The name of Scoring Issue A is “management strategy in place,” therefore it makes sense to differentiate the different scoring levels with different degrees of management strategies. The other three scoring issues go on to measure the likelihood that the management measures or strategy will work (scoring issue B), whether the measures/strategy is implemented (scoring issue C) and finally whether there is evidence of success (scoring issue D). We noticed when evaluating this fishery and other fisheries against this PI and all other 2.2.x PIs within the tree, that scoring issues B-D are written such that they are co-dependent with Scoring Issue A. In other words, if one were to take the wording completely literally, it would be impossible to score a 100 on scoring issues B-D unless the fishery also scored 100 on scoring issue A. Because we have significant experience with, and exposure to, the development of the MSC standards and scoring requirements, we know that the MSC intends to avoid codependent scoring issues. So we sought clarification from MSC on this point, asking if they intended for a 100 score to be impossible for scoring issues B-D when there was only a partial strategy rather than a full strategy. They clarified that this was never intended, and, in fact, they fixed the problem in v2.0 of the tree. The MSC Interpretations Log addresses this issue (From March, 2015):

**Considering measures/partial strategy/strategy in other scoring issues**

*Why are measures / partial strategy / strategy not perfectly overlapping in P2 management PIs (i.e. why does SI b not have measures/partial strategy/strategy as possibilities for scoring)?*

**Answer**

*In scoring issues b & c (in PI 2.1.2, 2.2.2, 2.3.2), we use the terms measures/partial strategy at SG80 and partial strategy/strategy at SG100 so that in cases where there may only be 'measures' in scoring issue (a), that the fishery could still meet the SG80 level in the scoring issue on management strategy evaluation. However, we did not consider the reverse case – e.g. where there is a partial strategy in scoring issue (a) but the evaluation scoring issue only meets the SG60 level. This will need to be considered in the next review of the standard. In the meantime, the MSC considers that the SG60 level of management strategy evaluation should apply to either measures or a partial strategy.*

The assessment team considers that the highlighted clause also applies to partial strategy in scoring issue (a) such that the fishery could meet SG100 level for management.

This seemed so obvious to the assessment team under the circumstances that we did not consider it necessary following confirmation of our interpretation from MSC to request any variation or post a public announcement. We contend that our decisions and interpretations were reasonable in this instance, and do not agree that this action constitutes a procedural error that materially affects the fairness of the assessment.

We also note that the objector does not seem to take issue with our judgement that there is a partial strategy in place (scoring issue A), nor do they question our determination that there is clear evidence of this (scoring issue C), rather the issue raised is one of semantics.

#### **Procedural Error #6 – Forest for the trees: biogenic structure**

##### **Affected PIs: 2.4.1, UTF habitat and Slope habitat**

In the scoring rationale for PI 2.4.1, MRAG did not give explicit consideration to how trawling may impact upon the structure of deep water habitats. We believe this materially affected the fairness of the assessment and led to unreasonable scoring of the habitat outcome PI.

Deep water corals are habitat engineers. They build biogenic structures which contribute to the height, complexity and three-dimensional relief of deep sea benthic communities. In this respect corals are much like trees, and their cumulative growth over centuries can create impressive underwater 'forests'. Structure is important in ecology and structure is part of the MSC definition of habitat. So despite the fact that MRAG scored corals under the ETP component, it is still necessary for the CAB to consider impacts to biogenic structures under the habitat PI. We must not lose sight of the forest for the trees.

Biogenic habitat-forming species are extremely vulnerable to physical impacts. Deep-sea corals are fragile, sessile, slow growing, long-lived, have a low natural mortality rate, may have limited larval dispersal, and are restricted to certain habitats (e.g. seamounts) which are the focus of commercial fisheries. These attributes make it prudent to take a conservative approach in protecting them from undue losses. Andrews et al. (2002) cited a number of authors in saying that "many species of deep-sea corals provide high relief habitat for a number of ecologically important species of invertebrates and fishes" and made the recommendation that biogenic habitats be better studied.

Cold-water coral reef structures often have high diversity or abundance of fish species (Costello et al., 2005; Auster, 2007) and may provide nursery ground, spawning, and protective habitat (Review by Clark et al., 2016).

The CAB asserts that corals remain established in trawled habitats. But the scoring rationale

does not give any insight into the spatiotemporal nature of trawl impacts to biogenic structures. Nor is there adequate consideration of the potential loss of function that may accompany destruction of topologically complex deep water habitats. There is increasing evidence that deep water (aphotic) corals are important fish habitat, a repository of data on ocean climate and productivity, and are hotspots of increased biodiversity, including undescribed species (Ross 2006). Do fishery operations compromise these functions?

WWF commented early in the assessment process about the importance of assessing fishing impacts to habitat structure and function. We even suggested modifying the default tree to clearly delineate between the two ecological roles of habitat engineer species. However, the CAB assured us that structure and function would be fully evaluated according to the default tree. It wasn't.

### Relevant MSC Requirements or Guidance in force at the time of the assessment

CRv1.3, Annex AA: MSC-MSCI Vocabulary -Normative  
Habitat

The chemical and bio-physical environment including biogenic structures where fishing takes place.

PI 2.4.1 The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function.

MRAG Response:

The assessment team is required to specifically assess ETP species in the ETP species component of Principle 2, and we have done so in this case. However, this does not mean that we assessed habitat impact under the habitats component as though the habitat were absent biogenic structures. We certainly took into account the structure of the habitats when determining the habitat scoring elements as well as in scoring the impacts.

MSC Guidance (GCB3.12 and sub sections) states the following with respect to assessing benthic habitat impact:

*If benthic habitat is being assessed, the team may consider the following points:*

- *Substratum—sediment type (e.g. hard substrate)*
- *Geomorphology—seafloor topography (e.g. flat rocky terrace)*
- *Biota—dominant floral and/or faunal group(s) (e.g. kelp forest and mixed epifauna, respectively)*

Further down in the section, MSC goes on to state the following (emphasis added):

*Examples of serious or irreversible harm include the loss (extinction) of habitat types, depletion of key habitat forming species or associated species to the extent that they meet criteria for high risk of extinction, and significant alteration of habitat cover/mosaic **that causes major change to the structure or diversity of the associated species assemblages.***

*For example if a habitat extends beyond the area fished then the full range of the habitat should be considered when evaluating the effects of the fishery. **The 'full range' of a habitat shall include areas that may be spatially disconnected from the area affected by the fishery and may include both pristine areas and areas affected by other fisheries.***

PI 2.4.1 requires an evaluation of whether the fishery causes serious or irreversible harm to habitat structure, **considered on a regional or bioregional basis**, and function.

On the basis of the above, MRAG Americas has determined that there are two primary habitat types to be considered in this assessment: Areas of flat seabed on the continental slope, and Underwater Topographical Features (UTFs). This is a sensible set of scoring elements for habitats based on the SGB benthic habitat definition laid out by MSC.

We concluded that these UTFs could be considered as one habitat type across this area because they contain similar faunal compositions in terms of benthic epifauna and associated fish and other species (Roux *et al.* 2015).

We contend that our habitat classification is reasonable and appropriately considers impacts to habitat structure, explicitly taking into consideration biogenic epifauna, and refer also to our response to alleged procedural error #1.

#### **Procedural Error #7 – Kermadec: the appropriate bioregion?**

##### **Affected PIs: 2.3.1, 2.4.1, 2.4.3**

MRAG has adopted the Kermadec bioregion as the relevant area across which to assess fishery impacts to habitats. This represents an area vastly larger than the New Zealand EEZ (see Fig. 24 in FRvol1), which encompasses numerous UTFs. However, recent studies show that deep sea community composition varies at far smaller spatial scales (on the order of 100s of kms) and also varies significantly by depth. The habitat characteristics on seamounts are far more diverse than the assessment team’s approach acknowledges. Clark et al. (2010) state that: “Benthic community composition on seamounts is depth stratified, reflecting environmental gradients that correlate with depth, such as temperature, oxygen concentration, food availability, and pressure (see section 3). Longhurst’s (1998) observation that there is as much marine faunal change over 1000 m vertically as over 1000 km horizontally is likely to also apply to seamounts.” Furthermore, the relevant habitat for orange roughy is in depth range 180 - 1809 m (Fishbase.org), so the part of UTFs in this range should be considered.

By including large areas that extend beyond the normal operating range of the orange roughy fishery in calculations of the impact of the fishery, the CAB distorted or minimized the proportion of the bioregion that appears to be impacted by the fishery and thereby erroneously 'credited' the fishery for not impacting habitat areas and types that are beyond fishable depths. Accordingly, WWF argues that the fishery does not meet the SG100 level of PI2.4.3a.

##### References:

Clark et al. (2010). The Ecology of Seamounts: Structure, Function, and Human Impacts. *Annu. Rev. Mar. Sci.* 2:253–78.

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. *ICES Journal of Marine Science*, 73: i51–i69.

#### **Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3

PI 2.4.3 SG100 The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types.

MRAG Response: Concerning UTF habitats and the requirements of MSC to assess the impacts of the fishery on a regional or bioregional basis, the assessment team considered the information provided by Roux *et al.* (2015) pertaining to the distribution of UTFs across the orange roughly distribution range within the Kermadec Bioregion and NZ EEZ, as well as the number of fished UTFs within this subgroup, the number of fished UTFs within the geographic areas of the Units of Assessment, and the overlap between the orange roughly trawl footprint with UTF habitats at scales from the UoC area all the way up to the bioregional level. We also considered the information presented in Clark *et al.* (2015) pertaining to the observed and predicted distribution of the main coral groups found on these UTFs on the same scales (noting that the depth range and distribution of the UTF habitat element does not depend on the depth distribution of orange roughly, or any other fish species). All of this information led us to the conclusion that UTFs as a whole irrespective of the depth distribution of orange roughly could be considered as one habitat type, even given that there is likely to be some heterogeneity in habitat composition among UTFs as described in Tracey *et al.* (2012).

To reiterate, this is the relevant MSC requirement that we followed (**emphasis added**):

CB3.14.3 The team shall consider the full extent of the habitats when assessing the status of habitats and the impacts of fishing, and **not just the part of the habitats that overlap with the fishery.**

*[The corresponding guidance in the GCB states, “For example if a habitat extends beyond the area fished then the full range of the habitat should be considered when evaluating the effects of the fishery. The ‘full range’ of a habitat shall include areas that may be spatially disconnected from the area affected by the fishery and may include both pristine areas and areas affected by other fisheries.”]*

As laid out in detail above under our response to Procedural Error #1, we followed the MSC requirements very closely in determining the overall distribution of the habitat as well as that of the Units of Certification. This is not artificially giving the fishery ‘credit’ or diluting their impacts, as alleged by the objector; it is simply using the facts and information available and evaluating them according to the MSC requirements. It does not have to be by design that much of the coral-dominated UTF habitat is outside the fishable range for orange roughly within these Units of Assessment in order for it to be a fact that limits the impact of this fishery on these habitats.

This is not counter to the statement cited by WWF from Clark *et al.* because we are not suggesting that trawling does not have an impact where it takes place. Instead we have concluded that the spatial scale of orange roughly fishing within the UoAs compared with the overall UTF habitat distribution in the NZ EEZ and bioregion is sufficiently small to ensure the impacts will not reduce habitat structure and function to a point where there would be serious or irreversible harm.

#### **Procedural Concern #8 –Ecosystem services?**

**Affected PIs: 2.5.1, 2.5.2**

The assessment team gave no serious consideration to the question of how the fishery impacts the capacity of the ecosystem to deliver ecosystem services to the component fishery,

to other fisheries, and to human uses. The team assigned a score of 100 to PI 2.5.1 (Ecosystem Outcome) but the scoring rationale does not identify any ecosystem services whatsoever. MRAG only cites examples of the constituent elements of the ecosystem. Similarly, MRAG assigns a score of 90 to PI 2.5.2 (Ecosystem Management) without any explicit consideration of how management strategies identify and ensure delivery of ecosystem services. We assert that this approach does not follow MSC rules. As a consequence of the error, the team has ignored a growing body of scientific literature that highlights the value of ecosystem services provided by deep sea ecosystems despite our limited understanding of the subject area (Armstrong et al. 2012, Thurber et al. 2014). We believe that this scoring error materially affected the objectivity and fairness of scoring of PI 2.5.1 and 2.5.2, leading to unreasonably high scores being assigned to both PIs.

References:

Armstrong, C. W., Foley, N. S., Tinch, R., and S. van den Hove (2012) Services from the deep: Steps towards valuation of deep sea goods and services. *Ecosystem Services* 2 (2012) 2–13.

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. *ICES Journal of Marine Science*, 73: i51–i69.

Thurber, A.R., Sweetman, A. K., Narayanaswamy B. E., Jones, D. O. B., Ingels, J., and R. L. Hansman (2014) Ecosystem function and services provided by the deep sea. *Biogeosciences*, 11: 3941–3963.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3

CB3.17.2 The team should interpret serious or irreversible harm in relation to the capacity of the ecosystem to deliver ecosystem services.

MSC Guidance to CRv1.3 says:

"For the Habitats and Ecosystem components, the concept of 'serious or irreversible harm' refers to change caused by the fishery that fundamentally alters the capacity of the component to maintain its function or to recover from the impact.

- This may also be interpreted as seriously reducing the ecosystem services provided by the component to the fishery, to other fisheries and human uses." (GCB3.2, page GC81 of GCRv1.3)

MRAG Response: Once again, the objector has cited only a subset of the relevant requirements and guidance for the PI in question, whereas the assessment team must look at all requirements and guidance in making our determinations. The full text of GCB3.17.2, corresponding to the requirement clause cited by the objector above, is as follows:

*Serious or irreversible harm in relation to the capacity of the ecosystem to deliver ecosystem services could include:*

- *Trophic cascade*
- *Depletion of top predators and trophic cascade through lower trophic levels caused by depletion of key prey species in a 'wasp-waist' food web*
- *Severely truncated size composition of the ecological community (e.g. greatly elevated intercept and steepened gradient in the community size spectrum) to the extent that*

recovery would be very slow due to the increased predation of intermediate-sized predators;

- Gross changes in the species biodiversity of the ecological community (e.g. loss of species, major changes in species evenness and dominance) caused by direct or indirect effects of fishing;
- Change in genetic diversity of species caused by selective fishing and resulting in genetically determined change in demographic parameters (e.g. growth, reproductive output)

Relatively few fisheries would have the information needed to address ecosystem issues quantitatively, and usually they will be assessed using surrogates, analogy, general observations, qualitative assessment, and expert judgement. Harm to ecosystem structure is normally inferred from impacts on populations, species, and functional groups, which can often be measured directly. Harm to ecosystem functions is normally inferred from impacts on ecosystem processes and properties such as trophic relationships, community resilience etc. and often have to be inferred from conceptual or analytical models or analyses.

Also relevant here is GCR section GCB3.17.1 (**emphasis** added):

*The ecosystem component does not repeat the status assessment of these elements individually but rather considers the wider system structure and function—**although if all these components scored highly it might be expected that the Ecosystem component would also score highly.** The Ecosystem component addresses system-wide issues, primarily impacted indirectly by the fishery **including ecosystem structure, trophic relationships and biodiversity.***

As stated in the rationale for PI 2.5.1., there is a body of research on trophic interactions for orange roughy fisheries generally and trophic models have been developed that include orange roughy, and there is no evidence of loss of functional components or species in the ecosystem or significant changes in the composition of orange roughy prey, predators, or competitors based on catch composition in research trawls, fishery-dependent data, and stomach analyses (Dunn 2013). In addition, monitoring of mesopelagic biomass on the Chatham Rise has suggested no significant change between 2001 and 2010 (O'Driscoll et al., 2011). Although this survey is predominantly at depths shallower than orange roughy, it is likely that the mesopelagic resources overlap with the orange roughy distribution depth range.

The assessment team considers it reasonable to regard the ecosystem in question as that over which orange roughy is distributed, which is far larger than the footprint of the fishery within the UoA areas, for the reasons and data provided under the habitats outcome response. Therefore, due to the disparity between the scale of the fishery within the UoAs and the totality of the ecosystem, we have determined that this fishery alone is sufficiently small as to preclude the possibility of unacceptable impacts at the ecosystem level. In addition, and as noted above under responses to comments on the ETP indicators, we have considered information pertaining to the heterogeneity of UTFs and the uncertainty about the ability of corals and other habitat forming organisms to recruit over larger spatial scales, and this has been reflected in the scoring of the ETP component of the assessment.

Therefore our determinations for scores on PIs 2.5.1 and 2.5.2 are reasonable, and there was no procedural error with regard to consideration of ecosystem services that has a material bearing on the fairness of the assessment.

**Procedural Error #9 – Change to unit of certification**

**Affected PIs: all PIs under 2.3 and 2.4, but for only one UoC (ESCR)**

It appears that during the fishery assessment the CAB changed the unit of certification (UoC)\* boundary for ORH3B ESCR. On May 22nd 2014, DWG wrote a certificate sharing letter to MRAG Americas (published on the MSC website). It stated that “The New Zealand Orange Roughy Fisheries (ORH3B Northwest Chatham Rise, ORH3B East and South Chatham Rise & ORH7A) are undergoing assessment against the Marine Stewardship Council (MSC) Fisheries Standard.” The letter did not indicate that ESCR was to be divided in half.

In a stakeholder submission to MRAG dated 30 July 2014, WWF noted that the proposed UoCs in DWG’s certificate sharing letter were different from those evaluated during pre-assessment (p. 18 in FRvol2). WWF asked for clarification on UoC structure because of concerns of the potential for re-drawing boundaries to match expectations (i.e. ‘Gerrymandering’ - a colorful euphemism for the practice used in US electoral politics). The CB did not provide WWF with clarification on the UoCs.

After reviewing the PCDR, WWF commented that the area of one unit of certification (ORH3B ESCR, 179 degrees 30 minutes west) was substantially reduced in size from what was assumed to be the original UoC covering the entire ESCR (p.216, FRvol2). WWF suggested that in the interest of transparency the team should explicitly address how exclusion of the western half of ESCR affects the assessment of benthic habitat impacts. MRAG’s response to this question (FRvol.2, p. 216) was evasive, providing no insight into the rationale for dividing ORH3B ESCR in half.

Available evidence implies that the CAB changed the ESCR UoC during the assessment - an action which does not follow MSC rules (27.4.3). This procedural error may have materially affected the fairness of the assessment, although the extent of impact is difficult to discern without further information.

\* The MRAG Final Report makes erroneous reference to the “unit of assessment” or UoA - a term that was not introduced by MSC until release of FCR2.0 and is therefore not applicable to this assessment.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3

Unit of Certification

27.4.3 The CAB shall note that once defined, the unit of certification cannot be changed during the assessment unless:

27.4.3.1 The CAB submits a variation request to this requirement to MSC by following the procedure set out in Part A clause 4.12, and

27.4.3.2 The MSC accepts the variation request.

MRAG Response: MRAG did not change the unit of assessment/unit of certification during this assessment. In August 2014 following the site visit for the orange roughy assessment, we had conversations with the clients that led to some clarification in the unit of certification. In the western part of ORH 3B ESCR, fishing targets oreo and catches little (but some) orange roughy. Having to deal with large catches of oreo with little orange roughy distorted the catch composition of the orange roughy fishery. The client had proposed to deal with this by limiting the certification to hauls that had orange roughy catches; however, we informed the clients that they cannot do after-the-fact determinations of whether a haul is in or out of the UoC. We

resolved the issue by the client drawing a line west of which was out of the UoC. The intent of the ORH 3B ESCR orange roughy UoC was to deal with the orange roughy fishery. We did not realize until later that the orange roughy fishery did not extend throughout the entire ESCR region. Our public announcement did not describe the UoAs/UoCs in detail so did not give the specifics of the ORH 3B ESCR, nor are any specific unit definitions on any of the MSC pages or other public documents (the first time we specified in public is in the PCDR where the above described clarification of the line was included; the DWG certificate sharing letter does mention ESCR). We did, however, inform stakeholders with an email on 17 September 2014 alerting them to the issue and need to clarify the details of the UoC, and with a second email on 15 October 2014 notifying of the definition of the final UoCs. Drawing the line that better defined the fishery did not change the UoC, because the orange roughy fishery did not extend into the western area and the line is thus a technical clarification. The MSC confirmed this interpretation in an email of 30 June 2016 that stated:

*“We agree that the UoC amendments were clarifications to how the UoCs were defined rather than actual changes, therefore not at odds with the MSC’s requirements on UoC changes.”*

*“CR v1.3 defines UoCs as (and v2.0 is the same):*

*27.4.2.1 The target stock (s),*

*27.4.2.2 The fishing method or gear, and*

*27.4.2.3 Practice (including vessels) pursuing that stock*

*“None of which was changed in the UoC/UoA descriptions, and the scope of the assessment was also unchanged.”*

#### **Procedural Error #10 – Key information: Description of fishing gear and method**

##### **Affected PIs: ETP corals, Habitat**

The PCDR and Final Report do not give a description of the fishing gear and practice used by the fishing operation. MRAG says little more than the method of capture is ‘demersal trawl’ (p.6, FRvol1). Without more detail about the fishing method(s) currently in use (e.g. trawl design, trawl doors, towing configurations, ground gear, etc; see Ministry of Fisheries 2008), it is not possible for stakeholders to see how the CAB has reached a determination that the fishery meets the MSC Principles and Criteria for Sustainable Fishing, specifically B3: *“The fishing operations shall implement appropriate fishing methods designed to minimize adverse impacts on habitat.”* WWF believes that description of fishing gear and practice is key information which is necessary to include for stakeholders to properly review the logic used by the team in their conclusion about scores for fishery impacts on ETP corals and habitats. Consequently, we argue that omission of this key information may have made a material difference to the fairness of the assessment.

See also Procedural Error #3

##### References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. ICES Journal of Marine Science, 73: i51–i69.

Ministry of Fisheries (2008) Bottom Fishery Impact Assessment: Bottom Fishing Activities by New Zealand Vessels Fishing in the High Seas in the SPRFMO Area during 2008 and 2009. Draft 1.0, December 2008. 105 p.

## Relevant MSC Requirements or Guidance in force at the time of the assessment

MSC Principles and Criteria for Sustainable Fishing, v1.1

### B. Operational Criteria

Fishing operation shall:

13. implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;

### CRv1.3

#### 24.5 Access to information

24.5.1 The CAB shall ensure that un-published key information necessary to enable a stakeholder who is not party to this information to be able to properly review the logic used by the team in their conclusion about a particular PI score is made available electronically, in printed form or otherwise for viewing by stakeholders.

24.5.1.1 The CAB shall make un-published key information available before the posting of the Public Comment Draft Report, and shall ensure that the information is available throughout the subsequent stages of the assessment process until such time as a certification decision is made.

MRAG Response: MRAG acknowledges that the description of fishing gear was limited, and assumed general understanding of demersal trawl gear. The lack of detailed description did not seem to hinder WWF in its comments on the impacts of trawl gear on the habitat and coral. The assessment team will gladly add a section to the PCR; however, this has no material bearing on the outcome of the assessment.

## DSCC Comments

MRAG Response: DSCC states that they incorporated the WWF comments by reference. However, we note that DSCC included an additional procedural error: **Apparent Bias and Predetermination**. The MRAG response above to WWF incorporates responses to the DSCC comments, except for the additional procedural error that we address under the **IA Request for Clarification** section below.

## Part Five Objection Pursuant to Paragraph ACD2.7.2.1

**In the following sections, for ease of identification, the MRAG Americas assessment team has appended specific responses to the objection text in shaded boxes.**

MRAG Overview:

We have provided here the requirements for objections dealing with Conditions (Part Five):

The Objection Procedures require that Objectors:

- a) identify the reason(s) you or your organisation believe that the condition assigned to the performance indicator within the Final Report cannot be justified because it fundamentally cannot be fulfilled, and
- b) ensure you include rationale for why you believe the condition setting decision was arbitrary or unreasonable, as described in ACD2.7.2.1 of the Certification Requirements.

We note that many of the Objectors' comments alleging scoring errors are strongly overlapping with the comments on Procedural Errors and Conditions Errors, and therefore, our responses also overlap, resulting in repetition. In many cases, we submit that the Objectors' comments do not deal directly with the instructions for Conditions (cannot be fulfilled; arbitrary or unreasonable) but rather seem more to address their disagreements with the MSC Standard.

### WWF Comments

<b>Error of Condition Setting #1 – More coral data is not more coral protection</b>
<b>Condition 2</b>
<b>Relevant PIs: 2.3.1, NWCR and ESCR UoCs</b>
<p>Condition 2 does not specify milestones that set out measurable improvements in terms of a direct demonstration that the fishery implements requirements for the protection and rebuilding of ETP corals by reducing coral mortality.</p> <p>In our review of the PCDR, WWF commented that both the condition set by the CAB and the corresponding action plan specified by the client fishery are unreasonably vague and provide little certainty that the condition will result in measurable improvements that minimize the impact of the fishery on ETP corals as required by PI 2.3.1. Specifically, under the MSC certification requirements the CAB is required to draft conditions to specify milestones that spell out the measurable improvements and outcomes (using quantitative metrics) expected each year (27.11.1.4). The MSC requirements for setting conditions also require that "if a condition or milestone relates to reducing uncertainty or improving processes, the CAB shall include in its report narrative about the ultimate ecological or management outcome that the condition aims to achieve over the longer term" (27.11.7). We remain convinced that the milestones and client action plan for Condition 2 fail to meet MSC requirements.</p> <p>MRAG responded to our comments (FRvol2 p. 212) by citing CR v1.3 Section 27.11.1.2 which states that "The CAB should draft conditions to follow the narrative or metric form of the PISGs used in the final tree [...]," and that "In this particular case, reducing uncertainty is what is needed to achieve the 80 level, there is more than one way to reduce uncertainty, and reduction of uncertainty does not necessarily mean reducing impacts." However, by focusing solely on the need to reduce uncertainty (i.e. the 'likelihood' aspect of scoring issue b), the CAB did not adequately consider the actionable side of CB3.11.3.1 which requires a direct demonstration that requirements for protection and rebuilding are being achieved.</p> <p>After assessing the outcome status of ETP corals, MRAG clearly states in their scoring rationale that "National legislation does not set numerical limits on coral, but does require minimizing impacts." Thus, for scoring issue (b), the "unacceptable impact" preventing the fishery from attaining the SG80 level is its failure to minimize interactions with ETP corals - not the lack of certainty thereof. According to MSC rules, the CAB must formulate Condition 2 to specify "demonstration that requirements for protection and rebuilding are being achieved."</p>

In the opinion of WWF, by focusing only on the uncertainty aspect of the PISG narrative and structuring the condition accordingly, the CAB has ignored the actionable side of the MSC rule which would require the fishery to not create unacceptable impacts to ETP corals. As written, the client action plan does not describe how the client will address the actual extent of impact. For this reason, we conclude that the condition setting decision for Condition 3 was unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it (sensu ACD2.7.2.1).

Also see Error of Condition Setting #2.

### **Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3

PI 2.3.1b Direct effects

Direct effects are highly unlikely to create unacceptable impacts to ETP species.

CB3.11.3.1 The team shall interpret “unacceptable impacts” as:

At SG80, where it is highly likely that the fishery meets the requirements, there would be direct demonstration that requirements for protection and rebuilding are being achieved.

MRAG Response: The objector is correct in stating that the definition for “unacceptable impacts” to ETP species in circumstances where there is national and/or international protection afforded is as follows:

*CB3.11.3.1. The team shall interpret “unacceptable impacts” as: [...] b. At SG80, where it is highly likely that the fishery meets the requirements [of protection or rebuilding], there would be direct demonstration that requirements for protection and rebuilding are being achieved.*

As explained in our report, the three ETP coral groups are protected under the NZ Wildlife Act 1953. However, the only management measures in place related to this protection are prohibitions to bottom trawling in MPAs and other designated closed areas such as marine reserves or sanctuaries. Therefore the assessment team determined that it is indeed highly likely that requirements for protection of ETP coral species are being achieved.

However, taking a conservative approach, we decided, in the absence of more active management requirements pertaining to protected corals within the national legislation, to interpret “unacceptable impact” for this PI as it is defined in CB3.11.4.1:

*CB3.11.4.1: The team shall interpret “unacceptable impact” as impacts which hinder recovery or rebuilding of ETP species/stocks, using the following: [...] b. At SG80, known direct effects of the fishery are highly unlikely to hinder recovery or rebuilding of ETP species/stocks.*

We judged this PI to meet the SG60 level, but not the SG80 for the two Chatham Rise UoAs, as explained in detail in the justifications for 2.3.1 in the assessment report, and thus raised the condition as quoted above, requiring that the SG80 level is met by the end of the certification period—i.e. that known direct effects of the fishery are highly unlikely to hinder recovery or rebuilding of ETP coral species. The logic of the condition setting and action plan sequence as laid out then clearly follows on from this, and we have explained this in our response to WWF’s comments in the PCDR.

Overall, not only have our processes for decision making in this context been reasonable, they have also been demonstrably conservative relative to the letter of the MSC requirements for this Performance Indicator.

**Error of Condition Setting #2 – Threat to ETP species: sufficient information**

**Condition 3**

**Relevant PIs: 2.3.3, NWCR and ESCR UoCs**

WWF believes that MRAG accepted a corrective action plan from DWG that falls substantially short of MSC requirements (27.11.2.4-5). Condition 3 specifies that “by the end of the certification period information must be sufficient to determine whether the fishery may be a threat to protection and recovery of ETP coral species.” However the client action plan says that in the first year, the client will “...Present a plan to reduce uncertainty regarding the threat of ORH fishing to the two UoAs on ETP coral groups.” The proposed plan does not address sufficiency of information, only improved certainty.

We are further concerned that the formulation of the condition itself might imply that the fishery client will attain the SG80 level of performance if they complete the suggested analyses. In the rationale for Condition 3 (FRvol1, p.204-205), MRAG describes the current DWG information base as including “...a series of studies resulting in data that have yet to be fully analysed.” The CAB goes on to say that such raw data must be analyzed before it can be informative, and that... “Only after the analyses can the data inform the conclusion. While DWG supplied the best information available at the time of the assessment, it was insufficient to draw the conclusion on status to reach SG80.” Although not explicit, it is strongly implied in this description that MRAG has determined a priori that such an analysis of DWG’s existing raw data sets will be sufficient to determine whether or not the fishery is a threat to the protection and recovery of ETP corals. WWF asserts that any determination about sufficiency of information should be made only after an objective and independent appraisal of the facts.

For this reason, we conclude that the condition setting decision for Condition 3 was unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it (sensu ACD2.7.2.1).

Also see Error of Condition Setting#2.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3

27.11.2 The CAB shall require the client to prepare a “client action plan” that includes:

27.11.2.1 How the conditions and milestones will be addressed.

27.11.2.4 How the action(s) is expected to improve the performance of the fishery.

27.11.2.5 How the CAB will assess outcomes and milestones in each subsequent surveillance or assessment.

PI 2.3.3, scoring issue b

SG80 Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species.

MRAG Response: We agree with the objector that an assessment of the sufficiency of information to achieve the 80 level for scoring issue B for the Chatham Rise UoAs should be made after an objective and independent appraisal of the facts. This is in fact what the

assessment team does and will do in this case, as part of annual surveillance audits, where a primary task is to assess progress against conditions.

The objector is also correct that there is a possibility that the provision of new analysis and improved information could be sufficient for the team to judge that the impact of the fishery on ETP coral groups is highly likely to be acceptable. In this case, no further mitigation of impact would be necessary. However, if the improved information reveals the opposite, or is not sufficiently conclusive, the action plan specifies that the client will take appropriate action.

The objector puzzlingly asserts above that “The proposed plan does not address sufficiency of information, only improved certainty.” At issue in this case is the sufficiency of information to determine whether the fishery may be a threat to protection and recovery of the ETP coral species. Because we determined, as explained again above, that the fishery did not meet the SG80 requirement for “highly unlikely to create unacceptable impacts” to ETP corals in PI 2.3.1, we could not conclude that information as available to us was sufficient to make the determination required by the SG80 guidepost in Scoring Issue B of PI 2.3.3. This is simple logic, and in this way the PIs for outcome and information are interrelated. Therefore the sufficiency of information is directly related to the level of uncertainty. Information must be sufficient to reduce uncertainty. Therefore the stepwise approach to this condition is appropriate.

The condition and action plan are reasonable, logically consistent, and designed to increase the score for this PI to 80 within the required timeframe.

### DSCC Comments

<i>Performance Indicator</i>	1.1.1b
<i>Condition</i>	By the end of the certification period, provide evidence that the ESCR stock is at or fluctuating around its target reference point.
<i>a) Reason</i>	The East and South Chatham Rise (ESCR) stock is estimated to be below the lower bound of the target management range in 2014. This condition means that a fishery which has been depleted by fishing would be certified as sustainable. It is entirely unreasonable. Fishing should stop until sound stock assessments show the fishery is shown to be above scientifically derived target reference points.
<i>b) Rationale</i>	Such a condition means that a clearly overfished fishery below what are already unsound reference points would be certified. This would be unreasonable and bring MSC into disrepute.

MRAG Response: The ORH3B ESCR stock is estimated to be just  $(0.004B_0)$  below the lower limit of the management target range (**Error! Reference source not found.; Error! Reference source not found. and Error! Reference source not found.** ; Section 4.3.5). The ESCR stock is above PRI with a high degree of certainty. Therefore, it is not overfished under the MSC definition. MRAG concluded that the stock is not highly likely to be at or fluctuate around the target reference point (in this case the target range), so does not score SG80 and received a condition. As an accredited CAB, MRAG Americas cannot score fisheries in a manner inconsistent with the MSC certification requirements. We cannot increase or decrease scores

without evidence to support the score. Current biomass trajectories show increasing biomass near the bottom of the target range, and modeling predicts that the stock will rebuild to above the lower end of the target range within a year or so. The objector did not provide evidence that the condition assigned to the performance indicator within the Final Report cannot be justified because it fundamentally cannot be fulfilled, and we have demonstrated that the science-based assessment has clearly provided the status of the stock relative to the target biomass range. Therefore, there is no merit in claiming the condition setting was arbitrary or unreasonable.

<i>Performance Indicator</i>	2.3.1 SI b
<i>Condition</i>	By the end of the certification period, the direct effects of ORH fishing must be highly unlikely to create unacceptable impacts to ETP coral species.
<i>a) Reason</i>	This condition will allow damage to coral species to continue until the end of the certification period.
<i>b) Rationale</i>	The condition decision is unreasonable as it will allow damage to continue. As is recognised in the assessment, bottom trawling damages coral. There is ample scientific evidence, shown in this objection and elsewhere, that the damage is serious and in many cases may be irreversible. It fundamentally cannot be fulfilled without stopping bottom trawling which impacts the coral.

MRAG Response: DSCC seems to agree that the assessment and scoring of the coral scoring element is appropriate, but takes issue with the language of the associated condition. In response to a similar objection to WWF, above, we replied the following:

As explained in our report, the three ETP coral groups are protected under the NZ Wildlife Act 1953. However, the only management measures in place related to this protection are prohibitions to bottom trawling in MPAs and other designated closed areas such as marine reserves or sanctuaries. Therefore the assessment team determined that it is indeed highly likely that requirements for protection of ETP coral species are being achieved.

However, taking a conservative approach, we decided, in the absence of more active management requirements pertaining to protected corals within the national legislation, to interpret “unacceptable impact” for this PI as it is defined in CB3.11.4.1:

CB3.11.4.1: The team shall interpret “unacceptable impact” as impacts which hinder recovery or rebuilding of ETP species/stocks, using the following: [...] b. At SG80, known direct effects of the fishery are highly unlikely to hinder recovery or rebuilding of ETP species/stocks.

We judged this PI to meet the SG60 level, but not the SG80 for the two Chatham Rise UoAs, as explained in detail in the justifications for 2.3.1 in the assessment report, and thus raised the condition as quoted above, requiring that the SG80 level is met by the end of the certification period—i.e. that known direct effects of the fishery are highly unlikely to hinder recovery or rebuilding of ETP coral species. The logic of the condition setting and action plan sequence as laid out then clearly follows on from this, and we have explained this in our response to WWF’s comments in the PCDR.

Overall, not only have our processes for decision making in this context been reasonable, they have also been demonstrably conservative relative to the letter of the MSC requirements for this Performance Indicator.

In addition, we reiterate our response to stakeholder comments on the PCDR pertaining to this issue:

In this case, the scoring issue for ETP corals that falls short of the 80 Scoring Guidepost is scoring issue b, which states (SG80) “Direct effects are highly unlikely to create unacceptable impacts to ETP species,” therefore, the condition is written specifically to follow the narrative of this scoring issue as required by MSC. It is, by design, not prescriptive as the MSC prohibits prescriptive conditions. In this particular case, reducing uncertainty is what is needed to achieve the 80 level, there is more than one way to reduce uncertainty, and reduction of uncertainty does not necessarily mean reducing impacts. The current milestones are written such that it will be clear following the year one milestone how the client expects to need to focus its effort to reduce the uncertainty to a level where the fishery can achieve the SG80 level on this scoring issue. In this case, the ‘ultimate ecological outcome that the condition aims to achieve over the longer term’ is that the orange roughy fishery in these two UoAs is highly unlikely to create unacceptable impacts to ETP coral species, and that is what we have written here.

The interrelationship between the information and outcome PIs in this case means that the initial action required to improve the available information will contribute to progress against both conditions. The assessment team determined that there was enough evidence to support the conclusion that the direct impacts of the fishery in these two areas was at least unlikely to create unacceptable impacts to ETP coral species, but not enough to deem them to be highly unlikely. Therefore a condition was also placed on the information PI (Scoring Issue b) which requires that information is sufficient to determine whether the fishery may be a threat to the protection and recovery of the ETP species. Since we did not determine that the 80SG was met for outcome (related to level of uncertainty), it stood to follow that the information available was also not sufficient to meet the 80SG.

<i>Performance Indicator</i>	2.3.3 SI b
<i>Condition</i>	By the end of the certification period, information must be sufficient to determine whether the fishery may be a threat to protection and recovery of ETP coral species.
<i>a) Reason</i>	This condition would allow fisheries causing damage to the environment – including damage to coral species – to continue until information is deemed sufficient to determine whether the fishery may be a threat to the protection (and recovery, if that ever occurred) of ETP coral species. It is contrary to the precautionary approach.
<i>b) Rationale</i>	The condition is unreasonable, contrary to the precautionary approach and would allow environmental damage to continue.

MRAG Response: The interrelationship between the information and outcome PIs in this case means that the initial action required to improve the available information will contribute to progress against both conditions. The assessment team determined that there was enough evidence to support the conclusion that the direct impacts of the fishery in these two areas was at least unlikely to create unacceptable impacts to ETP coral species, but not enough to deem them to be highly unlikely. Therefore a condition was also placed on the information PI (Scoring Issue b) which requires that information is sufficient to determine whether the fishery may be a threat to the protection and recovery of the ETP species. Since we did not

determine that the 80SG was met for outcome (related to level of uncertainty), it stood to follow that the information available was also not sufficient to meet the 80SG.

See also our response to WWF under their objections to conditions 2 and 3, above.

<i>Performance Indicator</i>	3.2.5b
<i>Condition</i>	By the third annual surveillance the fishery-specific [sic] management system must undergo occasional external review.
<i>a) Reason</i>	This condition will allow fishing to continue without any external review for 3 years. Worse, it does not require independent external review.
<i>b) Rationale</i>	The condition is unreasonable, as it will allow fishing to continue for 3 years without any external review, and does not require independent external review.

MRAG Response: PI 3.2.5b requires “*The fishery-specific management system is subject to regular internal and occasional external review.*” The term independent is not part of the PI requirement, and the MSC provides examples of appropriate external review. Under the MSC requirements, clients have up to the end of the certification period to close out conditions with a score of at least SG80. This condition requires completion in a shorter timeframe than the period of certification, i.e., within three years. This comment by DSCC demonstrates lack of understanding of the MSC requirements. The fishery has a client action plan in place that should lead to a revised score of at least 80 within the timeline for the milestones.

## Part Six Objection Pursuant to Paragraph CD2.7.2.2

In the following sections, for ease of identification, the MRAG Americas assessment team has appended specific responses to the objection text in shaded boxes. Once again, there is likely to be significant repetition as many of the objections under this section are substantively the same as the “Procedural Irregularities” objections.

### WWF Comments

<b>Scoring Error #1 – NWCR stock is depleted and must be scored under 1.1.3</b>
<b>Affected PIs: 1.1.1, 1.1.3</b>
<p>Justification:            The NWCR stock has not yet rebuilt to a safe stock level and should have been scored below 80 under 1.1.1. A condition should be set to ensure that stock rebuilding will be successful and closely monitored. We base our justification on the latest MPI stock assessments report (2015) (<a href="http://fs.fish.govt.nz/Doc/23850/47_ORH3B_2015_FINAL.pdf.ashx">http://fs.fish.govt.nz/Doc/23850/47_ORH3B_2015_FINAL.pdf.ashx</a>). Figure 1 is copied from the MPI 2015 report and displays the relevant management targets and probability levels.</p>

**Northwest Chatham Rise**

<b>Stock Status</b>	
Year of Most Recent Assessment	2014
Assessment Runs Presented	Base model only
Reference Points	Management Target: Biomass range 30–40% $B_0$ Soft Limit: 20% $B_0$ Hard Limit: 10% $B_0$ Overfishing threshold: Fishing intensity range $U_{20\%B_0}$ – $U_{40\%B_0}$
Status in relation to Target	$B_{2014}$ was estimated at 37% $B_0$ . Likely (> 60%) to be at or above the lower end of the management target range
Status in relation to Limits	$B_{2014}$ is Very Unlikely (< 10%) to be below the Soft Limit $B_{2014}$ is Exceptionally Unlikely (< 1%) to be below the Hard Limit
Status in relation to Overfishing	Fishing intensity in 2014 was estimated at $U_{30\%B_0}$ Overfishing is Exceptionally Unlikely (< 1%) to be occurring

Fig. 1 MPI 2015

In the final report (PI 1.1.1), the CAB contends that there is a high degree of certainty that the stock is above the point where recruitment would be impaired, with the justification that for the "NWCR: < 1% probability of being below the limit reference point; Table 8 (achieves SG100)". See Fig. 2 and 3.

Limit reference point	20% $B_0$	NWCR	13.2	<1% likelihood below LRP
		ESCR	64.0	
		ORH7A	17.6	

Fig. 2 Final report p. 121

**Table 8 Summary of stock status of each UoA relative to the hard limit and the management target range (MPI, 2014b, c; Cordue, 2014d)**

	ORH3B NWCR	ORH3B ESCR	ORH7A
Below Hard Limit	Exceptionally unlikely	Very unlikely	Exceptionally unlikely
Below Soft Limit	Very unlikely	Unlikely	Very unlikely
At or above Management Target	Likely above lower limit	As likely as not above lower limit	Considered fully rebuilt
Overfishing	Exceptionally unlikely	Very unlikely	Very unlikely
$P(B_{2014} < 0.2B_0)$	< 0.01	< 0.01	<0.01
$P(B_{2014} < 0.3B_0)$	0.04	0.57	<0.01

Exceptionally unlikely (<1%); Very unlikely (< 10%); Unlikely (<40%), As Likely as Not (40-60%), Very Likely (> 90%)

Fig 3. Final report, Table 8

However, based on the 2015 assessment report and Table 8 in the MSC final report, the probability is one order of magnitude higher (<10%) that the stock status is below the limit reference point.

According to the CAB the stock is at or fluctuating around its target reference point. "NWCR: < 5% probability of being below the lower limit of the target range; Table 7 and Table 8 (achieves SG 80)". In contrast, the 2015 assessment report states that it is only likely (>60% probability) that the stock is at or above the lower end of the target range (management target range (30-50% of  $B_0$ , see P.1.1.2). Additionally, a target reference point is not the same as the lower end of a target range. The lower and higher limits of the target range were extracted from two different models and the mid-point of this range balances the low estimate of BMSY from the Beverton-Holt stock-recruitment relationship with the higher estimate based on the Ricker stock-recruitment relationship. The midpoint

would therefore be an appropriate target reference point (40% Bo). The actual stock biomass is below that value (37% Bo).

Taking into account that the stock was severely reduced and overfished, that monitoring of the stock biomass is difficult to achieve and that orange roughly have a very slow growth/low mortality life strategy, it becomes evident that a more precautionary approach must be taken. This is especially evident when considering that the applied stock model utilizes a spawner-recruit relationship that uses the less precautionary average of the BMSY and that the baseline data includes large uncertainties due to limited data input from time series of abundance indices and due to the uncertainties of extrapolating abundances from the acoustic surveys.

Table 8 in the final report (Fig.3) states that overfishing is exceptionally unlikely (<1%). According to the MPI 2015 assessment report, the risk is higher: "at current catch limit (750 t) <10%".

We also note that the sub-area catch limit was increased to 1,250 t for the 2014-15 fishing year.

Projections and Prognosis	
Stock Projections or Prognosis	Biomass is expected to increase or stay steady over the next 5 years at annual catches of up to 1400 t.
Probability of Current Catch or TACC causing Biomass to remain below or to decline below Limits	At both current catch (110 t) or current catch limit (750 t): Soft Limit: Very Unlikely (< 10%) Hard Limit: Exceptionally Unlikely (< 1%)
Probability of Current Catch or TACC causing Overfishing to continue or to commence	At current catch: Exceptionally Unlikely (< 1%) At current catch limit: Very Unlikely (< 10%)

Fig. 4 MPI 2015

WWF is also concerned that such high fishing mortalities might hinder the ability of the stock to rebuild within the timeframe specified for the stock under PI 1.1.3b. The precautionary stock model predicts a rebuilding stop when fishing pressure increases (see Fig.5).

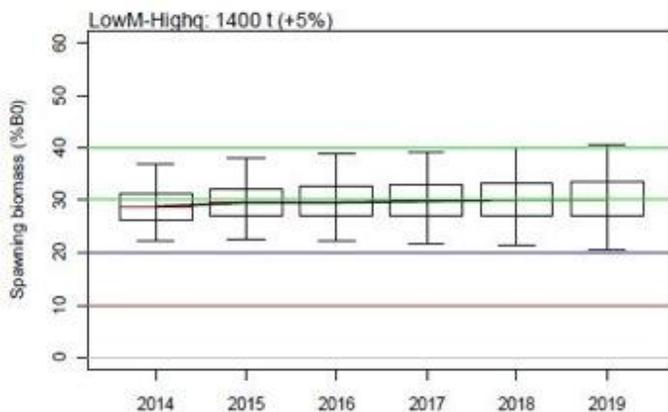


Fig. 5 MPI 2015.

## Relevant MSC Requirements or Guidance in force at the time of the assessment

PI 1.1.1 The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing (scoring issue a and b)

CB2.2.1 The team shall note that in P1 the terms “likely”, “highly likely” and “high degree of certainty” are used to allow for qualitative and quantitative evaluation. In a probabilistic context:

CB2.2.1.1 Likely means greater than or equal to the 70th percentile of a distribution (i.e. there shall be at least a 70% probability that the true status of the stock is higher than the point at which there is an appreciable risk of recruitment being impaired).

CB2.2.1.2 Highly likely means greater than or equal to the 80th percentile.

CB2.2.1.3 High degree of certainty means greater than or equal to the 95th percentile.

CB2.2.2 The team shall consider the biology of the species and the scale and intensity of both the fishery and management system and other relevant issues in determining relevant time periods over which to judge fluctuations.

CB2.2.2.1 At SG80, there shall be evidence that the stock is at the target reference point now or has fluctuated around the target reference point for the past few years.

PI 1.1.3 Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe (scoring issue a, b, c)

MRAG Response: WWF contends that the ORH 3B NWCR stock has not rebuilt to a level of meeting the high degree of confidence for exceeding the PRI. The difference in the probabilities of being below the LRP is due to two separate determinations of this value in the New Zealand System: 1) the stock assessment and 2) the summary of the stock assessment in the Plenary Report. The Plenary reports fixed percentages and percentage ranges for stocks in relation to reference points. The options are given in the Guidelines for Status of the Stocks Summary Tables on p 38 of the 2015 Plenary and are >99%, >90%, >60%, 40-60%, <40%, <10% and <1%. These options are an interpretation (opinion) of the Working Group (WG) from the stock assessment and other information and are intended to inform managers in a formulaic way for all stocks; they do not align with the critical MSC percentages of 70% and 80%. The WG considered that they were not comfortable to state that there was a <1% probability of being below the LRP and so chose the next reporting number available that was <10%. The probabilities presented in Table 8 are taken from Cordue and are the outputs from the Bayesian base case stock assessment model which reports the stock status as <1% probability of being below the LRP. Whether one chooses to accept the outputs of the stock assessment (<1%), which is usual in MSC assessments, or the more precautionary value determined by the Working Group of <10%, the outcome is the same: there is a very high probability, somewhere between 90% and 100%, that the stock is above the LRP. The probabilities provided by WWF do not represent the more accurate representation of stock status given in the stock assessment.

WWF further suggests a target reference point of 40%  $B_0$ . The assessment team notes that New Zealand chose the target reference range based on scientific stock assessment analyses and MSE, and it is not WWF's place to choose the value.

WWF contends that the harvest strategy should have a higher level of precaution than that used because of prior over-exploitation and reduced biomass and because of uncertainties in spawner-recruit relationship and in baseline data. The assessment team notes that the harvest strategy and level of precaution are not considered in PI 1.1.1. However, we note that the MSE explored the implications of these uncertainties and that the harvest control rule takes them into account. The assessment team is confident that the overall harvest strategy is precautionary and that the assessment and MSE has dealt with a sufficiently broad range of uncertainties to justify a scientifically sound assessment in a realistically data-rich condition, as discussed in our section "General Points on Uncertainty" at the start of this response. The HCR is far more precautionary than any management approach aimed at developing a sustainable fishery previously or currently applied to this species anywhere in the world.

WWF expressed concern that the fishing mortality is too high to allow rebuilding. The assessment team notes that ORH 3B NWCR is not depleted and does not require rebuilding. The figure presented by WWF represents the worst case scenario for the stock, using 1,400 t harvest allowed under the HCR rather than the 750 TACC set for the fishery, plus the most pessimistic biological case (HighM-Lowq). All other scenarios show consistent abundance increases. The assessment team concludes that WWF has misrepresented the best scientific information in this case. Given that the current catch limit, and thus fishing mortality, is below that specified by the HCR as a precautionary management measure, projections show that the stock will continue to increase. Recent fishing mortality on this stock (2012, 2013 and 2014) has been the lowest on record apart from that at the very beginning of the fishery in the late 1970s (Figure 7 of Assessment Report).

**Conclusions:**

The MRAG assessment team has shown that the best available science demonstrates that the stock is above the PRI with a high degree of certainty, and that WWF drew a different conclusion only by not considering the source of the calculations (the stock assessment document) and relying on a document (the plenary report) that does not report in sufficient detail to determine the MSC cutoffs for the SG60 and SG80. The assessment team has shown that the harvest strategy is precautionary and that the fishing mortality does allow further abundance increases. Any reasonable CAB reviewing the information presented in the assessment report could have drawn the same conclusion as that of the MRAG assessment team.

**Scoring Error #2 – LRP and TRP are not sufficiently precautionary**

**Affected PIs: 1.1.2a**

The score given to PI 1.1.2a cannot be justified because the scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it. Specifically, WWF asserts that limit and target reference points have not been shown to be appropriate for the stock and therefore do not meet the SG80 scoring level. We argue that reference points should be more precautionary for a long-lived species like orange roughy (FRvol2, p. 15-30). Current TRP and LRP for orange roughy do not follow best practice and the selection of RPs cannot be rationalized by

directly comparing to the limits used to manage other similarly long-lived stocks (see WWF stakeholder submission, FRvol2, p. 15-30).

In our comments on the PCDR, we expressed our skepticism about whether the limits are shown to be appropriate over the long term. The assessment team explained that MSE considered a very long time period (16,000 yrs), and that the harvest rate is variable under the HCR. Despite simulation testing, however, there is little empirical evidence to demonstrate that these limits are appropriate over the long term. We believe the limit and target reference points do not adequately address risks associated with orange roughy life history and other as yet unquantified uncertainties.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

PI 1.1.2, Limit and target reference points are appropriate for the stock

Scoring issue a

SG60 Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.

SG80 Reference points are appropriate for the stock and can be estimated.

MRAG Response: WWF has provided ‘concerns’ but no evidence that the fishery does not meet the requirements for target and limit reference points appropriate for the stocks. The stock assessment document, the stock assessment plenary, MPI, DWG, and the assessment team recognize that orange roughy is a long-lived species with a need for conservative exploitation. The decisions for the target reference range were based on world class stock assessment and MSE analyses and reviewed for the team by one of the foremost stock assessment scientists in the field. MPI and DWG have demonstrated recognition for conservative management to assure sustainability of the orange roughy stocks. There is no question that the reference range was developed using best available science in an environment of conservative management.

WWF presents support for its position only by referencing target reference points of other fisheries, fisheries with combination of biology and management different from that of NZ orange roughy. The MSE demonstrates that the target range (30% to 50%  $B_0$ ) combined with the HCR will tend to move the abundance to 40%  $B_0$  by decreasing harvest rate as biomass decreases below 40%  $B_0$  and increasing harvest rate as biomass increases above 40%  $B_0$ . This is more conservative than a fixed target reference point of 40%  $B_0$  without a requirement for decreasing harvest rate with decreasing biomass.

Conclusions:

The assessment report summarizes the rationale for the reference range and its relationship to the HCR. Together, they demonstrate that the target reference range and the limit reference point derived from it are appropriate for the stock and can be estimated, and that the reference points derived from the best available science. On this basis, any reasonable CAB could reach the same conclusion.

**Scoring Error #3 – Is hoping the fishery footprint won’t expand a strategy?**

**Affected PIs: 2.3.2, 2.4.2**

The SG80 scoring guidepost for PI 2.3.2a requires “that there is a strategy for managing the fishery’s impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP

species.” The NZ Fisheries Act of 1996 requires that the fishery minimize impacts on protected and endangered species, including ETP corals. Similarly, PI 2.4.2a at SG80 requires a “partial strategy” that is expected to achieve at least the SG80 Habitat Outcome level or above (i.e. highly unlikely to cause serious or irreversible harm).

The CAB's scoring of PIs 2.3.2 and 2.4.2 is based on the contention that the system of closures and MPAs in combination with monitoring vessel positions serves as a partial strategy to protect ETP corals and critical benthic habitats and are designed to meet the SG80 requirements for the outcome PIs. Logically, the effectiveness of this strategy is dependent on the implementation of these spatial protection measures in areas that protect ETP corals and sensitive coral habitats and the exclusion of fishing from these areas. Penney and Guinotte (2013) state that the approach of restricting bottom fishing to areas that have already been fished and focusing spatial protection measures on high diversity areas that have not been impacted by fishing (i.e. 'freezing the footprint') underpins the current system of spatial closures in the New Zealand SPRFMO Area footprint. The additional information added to the final report by the CAB clearly documents that the Conservation and Management Measure for the Management of Bottom Fishing in the SPRFMO Convention Area (CMM2.03) includes strict provisions to limit fishing by Members or Cooperating Non-Contracting Parties (CNCs) to the historical footprint of the fishery. The 'bottom fishing footprint' is defined as a map of the extent and distribution of historical bottom fishing in the Convention Area of all vessels flagged to a particular Member or CNC over a particular time period. The CMM provides a provision for a Member or CNC to apply for permission to fish outside the historical footprint subject to consideration by the Scientific Committee and taking into account the results of public consultation.

WWF contends that the SPRFMO CMM provides a clear example of a strategy to manage impacts on ETP corals and benthic habitats. New Zealand's membership in the SPRFMO and the CAB's addition of the CMM management measures in the Habitats section of the final report (p. 82-83) show its relevance here. However as WWF and other stakeholders have repeatedly noted throughout the assessment process, the current management system for the OR fishery contains no provisions for limiting the impact of the fishery to the historical footprint. The CAB continues to portray the tendency of vessels to fish in previous trawl paths and a perceived low likelihood that the footprint will expand as a 'measure' that comprises a part of a partial strategy for managing habitat impacts and risk to ETP corals. This is based only on consideration of recent (2008/09-2012/13) trends in the trawl footprint and does not take into account the full data set (1989/90-2012/13) analyzed for comparison by NIWA (2015). Truncating the trawl dataset also tends to exaggerate the effects of a recent decrease in fishing effort that was itself driven by reductions in TAC - not a measure to reduce impacts on ETP corals or habitats. As a part of this approach, the CAB is relying on the ability of the assessment team to detect any expansion of the fishery footprint during surveillance audits (i.e. after they occur).

The bottom line is that the CAB bases scoring on an unenforced “practice of using the same tow paths” to minimize the damage from bottom trawling on ETP corals and the habitats of which they form an integral part (i.e. to effectively freeze the trawl footprint). This is in clear contrast to the SPRFMO regulations that *actually* freeze the trawl footprint within the convention area subject to management approval of any expansion in the trawled area.

WWF contends that the example of the SPRFMO CMM cited by the CAB in the final report clearly illustrates that, lacking clear provisions to limit the trawl footprint to the historical extent unless there is scientific evaluation and stakeholder consultation in advance of any approved

expansion of the trawl footprint, an effective management strategy is not in place.

WWF contends that a strategy that relies in large part on unenforced or unlegislated behavior by the fishery does not meet this requirement (see Procedural Error 1 above). We believe that this error has therefore made a material difference in the fairness of the scoring of the ORH fishery for ETP corals and habitat PIs.

References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. *ICES Journal of Marine Science*, 73: i51–i69.

Penney, A. J., and Guinotte, J. M. (2013) Evaluation of New Zealand’s high-seas bottom trawl closures using predictive habitat models and quantitative risk assessment. *PLoS ONE*, 8: 1–18.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3

PI 2.3.2a

SG60 There are measures in place that minimise mortality of ETP species, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.

SG80 There is a strategy in place for managing the fishery’s impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.

PI2.4.2a

SG60 There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.

SG80 There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.

MRAG Response: The objector raised these very same issues in their comments to the Public Comment Draft Report. This resulted in some additions to the justifications, and a lowering of one scoring issue score on 2.3.2 for the corals scoring element from 100 to 80 on the basis that the evidence that the partial strategy is being implemented successfully might not be considered ‘clear’ as required in the SG100. Although ‘clear’ in this context is not defined anywhere, we considered the evidence for clear successful implementation in relation to strategies in place for the other ETP scoring elements (see response to WWF’s comment on PI 2.3.2 in the FRD).

As we have responded to this exact contention from the objector previously, much of our response here is a reiteration of our response to the PCDR comments; however, we wish to make it clear that the scores arrived at for PIs 2.3.2 and 2.4.2 do not rely on the assumption that the orange roughy trawl footprint is effectively frozen. We have not come to the determination that the fishery merits unconditional passes on these PIs based on a “hope” that the trawl footprint will not expand.

We have clearly laid out in the scoring rationale for these PIs that we have deemed there is an effective partial strategy to manage impacts to ETP species and habitats, that the partial strategy will work/is working, and that there is evidence to support this. This is what is required by the MSC. Freezing the trawl footprint is an example of a measure that could form part of a strategy to achieve this, but it is not a requirement.

There is an objective basis for confidence that BPAs as a strategy to limit fisheries interactions with these habitats will work, as effectively enforced closed areas to trawling as a means of protecting sensitive habitat is widely known to be an effective strategy. The practice of using the same tow paths on previously fished parts of UTFs reduces the scale of the damage from tows. Maintenance of this practice will keep the fishery impacts within current acceptable bounds. The assessment team is confident that this practice will be maintained, even though it is not legislated (note MSC does not require operational management measures to be legislated) for the following reasons:

1. The requirement of the Harvest Control Rule to restrict the size of the fishery in terms of allowable removals and thus fishing effort constitutes a 'measure' that forms part of the partial strategy. We recognize that this restriction is relative to the size of the stock; however, prior to the adoption of the current HCRs in these areas, there was no such restriction on effort. Under the current target species management arrangements, it will not be possible for the fishery to expand to anything close to historically high levels, even with high stock abundances. Given the recent lower catch limits, the fishers have incentives to make best use of their time and resources by fishing on fish plumes, many of which (ESCR, ORH7A) are in areas that have experienced relatively high fishing intensity on the slope. This provides further evidence that the likelihood of rapidly expanding trawl footprint under the current management system is low.
2. Although the New Zealand MPA policy containing the habitat protection standard is under redevelopment and thus not ready for implementation, there is evidence of a continual evaluation of a variety of different impacts, including those from fishing, on important habitats, and ongoing designation of MPAs as a result of these evaluations. This allows the assessment team to be confident that this is an active area of work within the NZ management system and therefore adds to the evidence that the partial strategy described within the scoring rationale is being implemented successfully. Evidence of continued review and implementation of requirements that benefit habitat is provided by the current process underway to re-designate the large BPA around the Kermadec Islands as a fully protected Marine Reserve where all fishing and other extractive activities will be prohibited.

As the assessment team laid out in the rationale for PI 2.4.2, there are a number of key elements that comprise the approach to managing fisheries impacts to habitats within NZ legislation including the following:

- The closing of about one third of the New Zealand EEZ to bottom fishing through the designation of Benthic Protection areas (BPAs).
- The designation of a variety of Marine Protected Areas (MPAs; seamount closures; i.e., areas closed to bottom trawling).
- The designation of Marine Reserves.
- Monitoring vessel positions (e.g., using VMS).

The rationale given by the assessment team under PI 2.4.2 includes an evaluation of the above-listed measures (together taken to comprise a partial strategy), and evidence of their successfulness, to conclude that this strategy is working and is being implemented successfully.

These have been reasonable determinations by the assessment teams based on the available evidence.

**Scoring Error #4 – Indirect effects: sediment plumes and ETP corals**

**Affected PIs: 2.3.1c, all UoCs, scoring element: ETP corals**

The score given to PI 2.3.1c cannot be justified because the scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.

Specifically, we assert that the fishery has not been shown to meet the SG80 level of scoring issue c which requires that “indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.” The CAB gave inadequate consideration to the potential for sediment plumes generated by benthic trawling to negatively impact ETP corals. At present, little quantitative information exists to assess the risk (“there are no known studies specifically examining sediment mobilization by fishing gear in deep-sea fisheries and its effects...” FRvol1, p.158). The assessment team’s rationale relied on anecdotal or confidential evidence (i.e. fishery following established tow lines; see Procedural Error 3), which does not provide evidence for the fishery meeting SG80. Similar to our concerns noted under Procedural Error #4, it appears that the team may have again given greater weight to their own opinion than to the views of the some of the world’s leading experts on the subject matter without justification ((e.g. Clark et al. 2015, Puig et al. 2013). We believe that the CAB’s inadequate consideration of indirect effects on ETP corals made a material difference in the fairness of scoring ETP corals for PI 2.3.1.

Also see Procedural Error #3 and #4.  
Also see Scoring Error #5.

References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. ICES Journal of Marine Science, 73: i51–i69.

Puig, et al. (2012). Ploughing the deep sea floor. Nature 489: 286-289.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

CRv1.3

PI 2.3.1, scoring issue c

SG80 Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.

MRAG Response: The rationale given to justify the SG80 score for this PI pertaining to corals is as follows:

UTFs considered to be heavily fished still contain diverse assemblages of corals and other epibenthic fauna and no difference in species numbers or community structures in coral-dominated UTFs within or outside of protected areas (coral dominance indicated no or only light fishing) has been observed (Consalvey, 2006; Clark et al., 2015b). This suggests that coral diversity continues to be maintained on fished UTFs, as most UTFs are fished only on established tow lines, leaving areas of many UTFs unfished because the seabed is too rough

or steep to trawl, or where orange roughy do not aggregate. Recent information from trawl surveys supports a conclusion that coral will remain well established on fished UTFs, although not at the average density prior to trawling.

However, as there are no known studies specifically examining sediment mobilization by fishing gear in deep-sea fisheries and its effects, there is not a high degree of confidence that there are no significant detrimental indirect effects of the fisheries on ETP species in the UoCs.

Therefore, as the objector points out, there is little direct information about the impact of sediment mobilization by fishing gear in deep sea fisheries and this is what prevented us from giving a 100 score for this PI. In the absence of direct information, we considered (as required by the SG80) this potential effect in light of the information we do have—namely that coral diversity persists on fished UTFs; that deep sea corals require hard substrate, therefore if they are proximate to trawling activity there is a low likelihood of significant sediment mobilization (because there is a low likelihood of soft sediment in coral habitat areas); and that VMS data pertaining to fishing locations provide sufficient confidence that it is the prevailing practice to fish on established tow lines.

Based on this information, we came to the reasonable conclusion that indirect effects have been considered and are thought to be unlikely to create unacceptable impacts to corals in UTF habitat areas.

**Scoring Error #5 – Indirect effects: sediment plumes and habitats**

**Affected PIs: 2.4.1, all UoCs, scoring elements: UTF habitat and slope habitat**

The score given to PI 2.4.1 cannot be justified because the scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.

MRAG made an error in scoring habitat impacts (PI 2.4.1) because they failed to adequately consider the indirect effects of trawling on habitats. In the scoring rationale, they say “Damage [from trawling] will, however, be restricted to areas trawled so that, the extent of any damage will be proportional to the footprint of the fishery.” The areal extent of the fishery footprint is an important part of the logic used by MRAG to assign a score to the probability of habitat impact (they assigned a score of 90 to both UTF habitat and slope habitat for this PI). Their approach fails to consider that indirect impacts may extend beyond the boundary of the trawl footprint. Sediment plumes generated by trawling may impact upon corals as well as other suspension feeding organisms within the deep sea benthic community (Clark et al. 2015, Puig et al. 2013). Consequently, the team has used a minimum estimate of the magnitude of habitat impact.

WWF argues that for this reason the fishery has not been shown to attain the SG80 level (no more than 30% probability of reducing habitat structure and function to the point where there would be serious or irreversible harm). Doing so made a material difference to the fairness and objectivity of the scoring of PI 2.4.1.

Also see Procedural Error #4.

Also see Scoring Error #4.

References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A.

(2016) The impacts of deep-sea fisheries on benthic communities: a review. ICES Journal of Marine Science, 73: i51–i69.

Puig, et al. (2012). Ploughing the deep sea floor. Nature 489: 286-289.

### Relevant MSC Requirements or Guidance in force at the time of the assessment

PI 2.4.1

Outcome status:

Scoring issue a: Habitat status

The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function.

SG60 The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm. [ $< 40\%$  probability of SolH]

SG80 The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm. [ $< 30\%$  probability of SolH]

SG100 There is evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.  
[ $< 20\%$  probability of SolH]

MRAG Response: The response to alleged scoring error #3 also applies here. In addition, it may be true that the physical trawl footprint overlap is smaller than the area that is affected by trawling, and this is why we have taken every opportunity to take precaution and assume the maximum extent of impact possible, even when there is evidence of less impact. For instance, the estimation of the footprint of fishing was made using the door-to-door measurement; it is clear that not all of the gear between the doors will be on the sea bed all of the time, at times it will just be the net footrope (about 20% of the door to door measurement), at other times it will be the footrope plus a proportion of the bridals and sweeps. In addition, it follows that the size of the footprint estimated using the door-width swept area is more accurate than estimates based on presence (or intensity) of fishing in statistical rectangles, and will have less associated uncertainty as a result (Penney, 2013; Black *et al.* 2013).

The methodologies used to calculate trawl footprint is detailed in “*Monitoring New Zealand’s trawl footprint for deepwater fisheries*” (Black *et al.* 2013, and on DWG’s website [here](#)). The authors conclude that: “*The assumed trawl widths are very conservative, probably leading to an overestimate of the total trawl footprint. In heavily trawled areas both over- and under-estimates are irrelevant as the entire area is predicted to have been affected (Black & Wood, in press). We conclude that the uncertainty arising from the combination of over- and under-estimates is likely to be small, of the order of a few percent of the total footprint area*” (page 12).

Black *et al.* 2013 drew this conclusion based on:

- The locations of the start and end positions of bottom trawls are recorded to precision of  $\pm 1$  nm of the vessel’s position at the times the trawl comes in contact and ceases to be in contact with the seabed.
- On the scales under consideration for this assessment against the MSC FCR (i.e. Unit of Assessment, Unit of Management and Bioregion) this level of precision is more than

accurate to provide estimates of the proportions of these areas that have been fished and not-fished for orange roughy during the time period under consideration.

- Most of the tows for orange roughy in recent years are of very short duration (often <1 nm) and are in a straight line compared to tows targeting other species, such as squid and hoki (which may be of several hours duration, may extend for several nautical miles from start to finish, and may follow contours or turns).
- The footprint analysis used a random offset or 'jitter' to approximate a realistic pattern of start and end positions (i.e. to provide for concerns that the start and end positions default to a 1 X 1 nm grid). This is likely to have limited value in short tows for orange roughy. The authors report that this jittering, depending on the average and SD of the offset, will likely lead to an over-estimation because, where fishing is carried out on defined towline or from known marks (e.g. on UTFs and other features of limited geographical extent) *"there could be a genuine clustering of trawl start/end locations and possibly very short tows ... in these locations, the application of offsets may make the estimated footprint area larger than it really is,"* and that on a national scale this *"is unlikely to be significant,"*
- The trawl footprint analysis assumes a towpath width for orange roughy of 150 m (i.e. assumes full contact with the seabed by the trawl gear between the doors based on the maximum assumed door-to-door spread). These assumptions will not always be achieved and are seldom achieved when trawling down steep slopes, such as on UTFs. In addition, at times (particularly when trawling on UTFs) the doors, sweeps and bridles are not in contact with the seabed, meaning that the tow-path width will be much narrower than the assumed 150 m and that this analysis will over-estimate the area contacted and therefore, potentially be impacted.
- In the Trawl Catch Effort and Processing Returns (TCEPR) database used in the footprint analysis, the mean recorded wingtip-to-wingtip spread of orange roughy trawl gear is 46 m. On this basis, the trawl footprint is based on an assumed trawl path that is 326% wider than the assumed door-to-door spread.
- The footprint analyses uses only TCEPRs as the Catch Effort Landing Returns (CELR) do not record tow start and end positions. There is potential that this might lead to a small underestimate of the trawl footprint. However, for orange roughy tows in the three fisheries under assessment, most of the tows on CELRs will be at the same locations (and likely along identical tow paths) as those recorded on TCEPRs. Therefore, it is unlikely that the exclusion of catches reported on CELRs will have led to any material under-estimation of the areas covered by orange roughy bottom trawls. In addition, during the period under consideration (2005-06 to 2010-11) annually only ~2% of the tows for orange roughy in these three fisheries was recorded on CELRs, between 97% and 100% of tows were recorded on TCEPRs.
- A number of tows recorded on TCEPRs were excluded from the footprint analyses due to errors in recording the start and/or finish locations or due to other inadequacies in these catch reports. The report notes that only a few tows were excluded. Over all of the deepwater fisheries, 4% of the total number of tows analysed were excluded. Most of these were noted as lying inside of the estimated trawl footprint area and, therefore it was assessed they are *"unlikely to be important for the estimation of the trawl footprint."*

These comments from Black *et al.* (2013) refer to the deepwater trawl footprint for all species, including for orange roughy in the three UoA and outside of these. The uncertainty and imprecision for orange roughy trawls within the three UoA will be much less than for the deepwater trawl footprint overall for the reasons outlined above. The scale of the footprint thus substantially overstates the real area of fishing impact and does so specifically to provide a measure of precaution to address the inherent uncertainties such as the possibility that mobilization of sediment adversely impacts areas outside the trawl footprint.

Notwithstanding all of the above, it still remains true that the impact footprint of the UoAs under assessment is a very small fraction of the overall habitat area (see again response to alleged procedural errors 1 and 2); so much so that even if the area of footprint impact were substantially underestimated (and we have explained above how the estimate likely overestimates the actual footprint), the fishery would still meet the 80 scoring issue for this PI concerning likelihood of unacceptable impact.

This is a reasonable judgement by the assessment team based on the evidence provided.

Penney, A. (2013). Spatial analysis of Australian and New Zealand historical bottom trawl fishing effort in the Convention Area of the SPRFMO. SPRFMO SC-01-20. 34pp.

Black, J., R. Wood, T. Berthelsen and R. Tilney. 2013. Monitoring New Zealand's trawl footprint for deepwater fisheries: 1989–90 to 2009–10. New Zealand Aquatic Environment and Biodiversity Report No. 110.

### **Scoring Error #6 – Measures to protect ETP corals**

#### **Affected PIs: 2.3.2**

The score given to PI 2.3.2 cannot be justified because the scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.

MRAG argues that the fishery has in place a precautionary management strategy to protect ETP corals. They score the fishery as meeting the SG80 level of scoring issue because the strategy includes “measures to minimise mortality.” With respect to ETP corals, we first contend that there is really only one “measure” in place: area closures or Benthic Protected Areas (BPAs). WWF recognizes that area closures are an essential tool for protecting corals when they are sited appropriately (see discussion in Penney and Guinotte 2013 and Rieser et al. 2013) and our organization is a strong supporter of MPAs. But the issue here is not whether BPAs are effective in New Zealand waters. We accept that the current strategy of area closures may justify a score of SG60. However, we disagree with the CAB that the measures currently in place constitute a strategy designed to “minimize mortality of ETP corals” as required by New Zealand law and that is sufficiently precautionary to justify awarding the SG80 scoring level.

MRAG does not identify in their scoring rationale the numerous other types of measures that may be enacted to reduce the mortality of benthic fauna in deep water trawl fisheries. Such measures include modifications to gears or fishing methods, establishing seasonal or annual ‘take’ limits, formulating move-on rules, and freezing the trawl footprint. MRAG’s omission is unusual because they also recognize that the SPRFMO has, in addition to establishing BPAs, enacted measures to protect VMEs and deep sea habitats by restricting bottom fishing to the bottom fishing footprint of that SPRFMO member (p.81-83, FRvol1; also see Scoring Error #3). However these measures are not implemented in the New Zealand EEZ.

WWF contends that existing measures to minimize mortality of ETP corals are not sufficiently precautionary and therefore the score assigned by the CAB to PI 2.3.2 is not justified.

References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. ICES Journal of Marine Science, 73: i51–i69.

Penney, A. J., and Guinotte, J. M. (2013) Evaluation of New Zealand’s high-seas bottom trawl closures using predictive habitat models and quantitative risk assessment. PLoS ONE, 8: 1–18.

Rieser, A., Watling, L., and Guinotte, J. (2013) Trawl fisheries, catch shares and the protection of benthic marine ecosystems: Has ownership generated incentives for seafloor stewardship? Marine Policy 40(2013): 75-83.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

PI 2.3.2

SG60 There are measures in place that minimise mortality of ETP species, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.

SG80 There is a strategy in place for managing the fishery’s impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.

MRAG Response: The MSC requirement for PI 2.3.2 scoring issue A is as follows:

“There is a strategy in place for managing the fishery’s impact on ETP species, including measures to minimize mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.”

The assessment team determined that establishing Benthic Protected Areas, marine reserves and sanctuaries and other designated areas closed to bottom fishing (and in some cases, all fishing and other extractive activities) does meet the above requirement for a strategy to manage the fishery’s impact on ETP corals, especially given the overall scale (>30% of the EEZ) and the considered spatial distribution of those areas. Spatial management of impact through instituting closed areas is an established precautionary best practice approach for minimizing impact of fisheries on sensitive benthos, by setting aside significant areas where they remain untouched, and qualifies as a strategy under the MSC definition because these areas are designated for the expressed purpose of protecting sensitive and important biogenic habitats. The team has determined that the requirement for ‘measures to minimize mortality’ is fulfilled through this strategy. The term ‘to minimize’ in this context must be reasonably interpreted, because taken to its literal extreme, one cannot minimize impact without stopping fishing all together. However, the team determined that preventing fishing within a network of BPAs, marine reserves and areas within the bioregion is a reasonable interpretation of ‘to minimize’ in this context.

**Scoring Error #7 – An inadequate habitat classification system**

**Affected PIs: 2.4.1, 2.4.2, 2.4.3**

In scoring PI 2.4.1, MRAG did not adequately consider the system of habitat classification in order to predict impacts. Only two large-scale bathymetric features (UTFs and slope areas) were scored as habitats while small-scale diagnostic habitat features like different substrates

or biota (GCB3.14) were not used for habitat classification. Various studies (e.g. Howell et al., 2010; Lundsten et al., 2009; O'Hara, 2007; Bowden et al., 2016) concluded that simple categorisation of benthic communities on the basis of topographically defined habitat types is unlikely to be sufficient in itself for addressing the needs of management in the deep sea. A more detailed habitat and fishing overlap analysis is prerequisite to justify that habitat components are not within the range where there is risk of serious or irreversible harm. Assessed habitat components should include vulnerable structured habitats like coral reefs, coral gardens, sponge grounds.

We wish to point out that the element approach to scoring habitat PIs was correctly applied in other MSC assessments of demersal trawlers that included different scores for different VME habitat types (e.g. Norway North East Arctic cod and haddock 2016, Greenland cod, haddock and saithe trawl fishery in the Barents Sea 2015, Euronor and Compagnie des Pêches 2012).

References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. *ICES Journal of Marine Science*, 73: i51–i69.

Bowden, David A., et al. "Deep-sea seabed habitats: Do they support distinct mega-epifaunal communities that have different vulnerabilities to anthropogenic disturbance?." *Deep Sea Research Part I: Oceanographic Research Papers* 107 (2016): 31-47.

Lundsten, L., Barry, J.P., Cailliet, G.M., Clague, D.A., DeVogelaere, A.P., Geller, J.B., 2009. Benthic invertebrate communities on three seamounts off southern and central California. *Mar. Ecol. Prog. Ser.* 374, 23–32.

Howell, K.L., Mowles, S.L., Foggo, A., 2010. Mounting evidence: near-slope seamounts are faunally indistinct from adjacent bank. *Mar. Ecol.* 31, 52–62.

O'Hara, T.D., 2007. Seamounts: centres of endemism or species richness for Ophiuroids? *Glob. Ecol. Biogeogr.* 16(6), 720–732.

**Relevant MSC Requirements or Guidance in force at the time of the assessment**

CB3.14 Habitats Outcome PI (PI 2.4.1)

CB3.14.1 The team shall assess the habitats component in relation to the effects of the fishery on the structure and role function<sup>169</sup> of the habitats impacted by the fishery

GCB3.14 Habitats Outcome PI: If benthic habitat is being assessed, the team may consider the following points:

Substratum—sediment type (e.g. hard substrate)

Geomorphology—seafloor topography (e.g. flat rocky terrace)

Biota—dominant floral and/or faunal group(s) (e.g. kelp forest and mixed epifauna, respectively)

MRAG Response: We certainly took into account the structure of the habitats when determining the habitat scoring elements as well as in scoring the impacts.

MSC Guidance (GCB3.12 and sub sections) states the following with respect to assessing benthic habitat impact:

*If benthic habitat is being assessed, the team may consider the following points:*

- *Substratum—sediment type (e.g. hard substrate)*
- *Geomorphology—seafloor topography (e.g. flat rocky terrace)*
- *Biota—dominant floral and/or faunal group(s) (e.g. kelp forest and mixed epifauna, respectively)*

On the basis of the above, MRAG Americas has determined that there are two primary habitat types to be considered in this assessment: Areas of flat seabed on the continental slope, and Underwater Topographical Features (UTFs). This is a sensible set of scoring elements for habitats based on the SGB benthic habitat definition laid out by MSC.

We concluded that these UTFs could be considered as one habitat type across this area because they contain similar faunal compositions in terms of benthic epifauna and associated fish and other species (Roux *et al.* 2015).

Note also that we take into consideration the studies of Tracey et al (2011) pertaining to spatial heterogeneity and local recruitment of coral species in the ETP component of this assessment.

We contend that our habitat classification is reasonable and appropriately considers impacts to habitat structure, explicitly taking into consideration biogenic epifauna, and refer also to our response to alleged procedural error #1.

#### **Scoring Error #8 – Status of benthic ecosystem was not assessed**

##### **Affected PIs: 2.5.1, 2.5.3**

In scoring PI 2.5.1, MRAG did not assess the outcome status of the deep sea benthic ecosystem, and the scoring rationale for PI 2.5.3 overstates our knowledge of the main impacts of trawling the deep sea benthos. As with the habitat component, the CAB found it reasonable to consider the orange roughy ecosystem as the area over which orange roughy is distributed within the Kermadec bioregion. Based on arguments similar to the ones that the CAB used for scoring habitat outcome status (see Procedural Error #1), MRAG concluded that the fishery meets the SG100 level because: 1) there are BPAs in place, and 2) the footprint of the orange roughy fishery in the three UoCs is small relative to the orange roughy distribution area within the bioregion, with “benthic impact that may damage ecosystem structure and function ...restricted to < 20% of the fishery management areas.”

We assert that the benthic ecosystem represents a ‘key’ ecosystem element (CB3.17.3) and must be considered as such. MRAG did not assess the ‘true status’ of the benthic ecosystem in a way that would justify their conclusion about the likelihood of not approaching a point of serious or irreversible harm. Their argument is constructed almost exclusively around the notion that a severe but small impact is rapidly diluted in a large ocean (see Procedural Error #1). Although the CAB cites the review by Dunn (2013), they seem to ignore his warning that “Benthic biodiversity surveys have shown that trawls remove exposed fauna such as corals and sponges. The implications of this, however, remain poorly known.” WWF believes it is important to recognize and address these unknowns as they arise in the assessment. Furthermore, under PI 2.5.3b at SG100, the CAB argues that the main impacts of the fishery on the ecosystem can be inferred from “specific research related to trawl impacts on habitat

structure and function." However in the scoring rational for PI 2.4.2 the CAB states that "According to Black at al. (2013), there have been no studies investigating whether current trawling frequencies have had adverse effects on the structure and function of benthic communities, or on the productivity of the associated fisheries." These statements by the CAB are difficult to reconcile.

The CAB's approach postulates that any portion(s) of the benthic ecosystem which is not directly impacted by the fishery under assessment is intact and functioning properly (i.e. unimpacted). This assumption does not account for either the previous damage from the early Orange Roughy fishery or the activities of other fisheries. Nor does it consider possible impacts of non-fishery related drivers such as global warming, ocean acidification and pollution - any of which may contribute to declines or shifts in deep sea community structure (e.g. Ramirez-Llodra et al. 2011). The scores that MRAG assigned to PI 2.5.1 and 2.5.3 imply we have a very good understanding of the outcome status of the benthic ecosystem across the Kermadec bioregion when in reality the opposite seems to be true. Therefore we feel the score assigned by the CAB to PI 2.5.1 and PI 2.5.3 is not justified.

#### References:

Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2016) The impacts of deep-sea fisheries on benthic communities: a review. *ICES Journal of Marine Science*, 73: i51–i69.

Dunn, M. (2013) *Ecosystem Impacts of Orange Roughy Fisheries*. School of Biological Sciences Victoria, University of Wellington, New Zealand. 17 p.

Ramirez-Llodra E, Tyler PA, Baker MC, Bergstad OA, Clark MR, et al. (2011) Man and the Last Great Wilderness: Human Impact on the Deep Sea. *PLoS ONE* 6(7): e22588. doi:10.1371/journal.pone.0022588

### **Relevant MSC Requirements or Guidance in force at the time of the assessment**

#### CRv1.3

CB3.17.3 The team should note that "key" ecosystem elements are the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics, and are considered relative to the scale and intensity of the fishery. They are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity.

#### PI 2.5.1

The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function

##### a. Ecosystem status

SG60 The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.

[no more than a 40% probability that the true status of the component is within the range where there is risk of serious or irreversible harm]

SG80 The fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.

[no more than a 30% probability that the true status of the component is within the range

where there is risk of serious or irreversible harm]

SG100 There is evidence that the fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.

[no more than a 20% probability that the true status of the component is within the range where there is risk of serious or irreversible harm]

PI 2.5.3

There is adequate knowledge of the impacts of the fishery on the ecosystem.

b. Investigation of fishery impacts

SG100 Main interactions between the fishery and these ecosystem elements can be inferred from existing information, and have been investigated in detail.

MRAG Response

MSC requires under the ecosystem component of Principle 2 for outcome that the fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function. The objector claims that the team made an error in scoring because we did not assess the true status of the ecosystem. We quoted the MSC requirement above because we wish to note that the team is not required to assess the true status of the ecosystem---we are required to assess the likelihood of the fishery disrupting the key elements underlying ecosystem structure and function to the point where there would be serious or irreversible harm. This is different from the outcome PI in P1, and those in 2.1 and 2.2, where the actual status of the element (stock) relative to established limits is evaluated. Here we are asked to judge the risk of serious or irreversible harm.

The ecosystem we chose to score impacts against, based on the available information is the area within the Kermadec bioregion and NZ EEZ within which orange roughy are distributed. The objectors are correct in pointing out that the team should note that “*key ecosystem elements are the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics, and are considered relative to the scale and intensity of the fishery. They are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity*” (**emphasis added**).

Orange roughy occur in deepwater habitats on the upper continental shelf. Dunn (2013) and Clark and Anderson (2013) have reviewed and summarized the ecosystem that orange roughy inhabit. Although orange roughy are often considered to be demersal species, as they are caught on/near the seabed in demersal trawls, their diet indicates that they forage into the benthopelagic and, as a species without a swim bladder, they would appear to be well adapted to live in a benthopelagic habitat. Acoustic marks interpreted as orange roughy are often found up to several hundreds of metres above the seabed.

Juvenile orange roughy occur most frequently on gently sloping areas of the upper continental slope at depths of 850-900 m (Dunn et al., 2009 a, b). Adults are found at depths of 850-1,500 m at least. Larger orange roughy may aggregate around UTFs, such as ridges, hills, knolls, and seamounts as well as canyons for spawning and feeding (Branch, 2001; Dunn & Devine, 2010).

From Black et al (2015) we have good maps detailing the orange roughy distribution area together with the trawl closure areas and fishing areas within the UoCs.

We are required by MSC to avoid “double scoring” in the sense that we can only assess each element under one component. For example, impacts to protected corals are assessed specifically under ETP, so they are not separately assessed under habitats or ecosystems. Similarly, the nature of trawl impacts to habitats and management thereof is assessed under the habitats component, and should not be assessed again here. For the ecosystem component, we have concentrated our assessment on impacts to ecosystem structure and function as defined by MSC.

The response to this alleged scoring error follows a similar logic to the response under PI 2.4.1 given similar requirements and definitions within the MSC requirements and guidance, which explain that serious or irreversible harm should be interpreted in relation to the capacity of the ecosystem to deliver ecosystem services. The associated guidance (GCB3.17.2) goes on to give the following examples of what ‘serious or irreversible harm’ could include:

- Trophic cascade
- Depletion of top predators
- Severely truncated size composition of the ecological community to the extent that recovery would be very slow due to the increased predation of intermediate-sized predators
- Gross changes in the species biodiversity of the ecological community
- Change in genetic diversity of species caused by selective fishing and resulting in genetically determined change in demographic parameters.

The GCR (section GCB3.17.1) also explains that the ecosystem component does not repeat the status assessment of these elements individually but rather considers the wider system structure and function—although if all these components scored highly it might be expected that the Ecosystem component would also score highly. The Ecosystem component addresses system-wide issues, primarily impacted indirectly by the fishery including ecosystem structure, trophic relationships and biodiversity.

The objector is correct in their assessment of the overriding logical argument that underpins the scores given for this component—however this was not done in error. Although the same guidance that exists for habitats doesn’t exist in the MSC requirements for ecosystems in terms of defining the spatial extent of what is to be assessed, in the expert judgement of the assessment team it was deemed reasonable to regard the ecosystem in question as that over which orange roughy is distributed, which is far larger than the footprint of the fishery within the UoA areas, for the reasons and data provided under the habitats outcome response. Therefore, due to the disparity between the scale of the fishery within the UoAs and the totality of the ecosystem, we have determined that this fishery alone is sufficiently small as to preclude the possibility of unacceptable impacts at the ecosystem level. In addition, and as noted above under responses to comments on the ETP indicators, we have considered information pertaining to the heterogeneity of UTFs and the uncertainty about the ability of corals and other habitat forming organisms to recruit over larger spatial scales, and this has been reflected in the scoring of the ETP component of the assessment.

This judgement is not in contradiction to the studies on ecological impacts of trawling cited by the objectors in their PCDR comments (e.g. Dunn 2013; Clark et al, 2012), because, as stated previously, there is evidence suggesting that where trawling does occur, there is a chance of adverse effects to ecosystem structure and function and this has been acknowledged and

reported in the assessment. However, this does not change the fact that the fishing taking place within the UoAs of this assessment is on a very small scale relative to the overall ecosystem.

### DSCC Comments

<p><i>Performance Indicator</i></p>	<p><b>P1 1.1.1 The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing</b>  <b>ORH3B Northwest Chatham Rise (NWCR): 90</b>  Should be: below 60  <b>ORH3B East and South Chatham Rise (ESCR): 70</b>  Should be: below 60  <b>Challenger Plateau ORH7A: 90</b>  Should be: below 60</p>
<p><i>Reason</i></p>	<p><b>ORH3B NWCR</b>  PI 1.1.1 Outcome requires for a score of SG80 that <i>“the stock is at or fluctuating around its target reference point.”</i>  <i>“CB2.2.2.1 At SG80, there shall be evidence that the stock is at the target reference point now or has fluctuated around the target reference point for the past few years. “</i></p> <p>The NWCR Stock was below the target reference point and Figure 6 on page 25 shows that it was not at the target reference points nor has it been fluctuating around the target reference point for the past few years. The most the Determination could state that is that “The ORH3B NWCR and ORH7A stocks are above the lower bound of the management target and hence are within the target reference range, thereby meeting the SG80.” (page 129)</p> <p>These are compounded by the uncertainties, and the fact that the stocks were as low as 10% in 2005.</p> <p>The following observations are applicable to all stocks. In practice, use of the ‘bounds’ means that the lower 30% bound becomes the target reference point. The target reference range starting at 30% is inappropriate, given the long life, slow reproduction and past overfishing of orange roughy. It is not precautionary. For SG 60, it is necessary that “Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.” They are not. Moreover for SG 80, it is required that “Reference points are appropriate for the stock and can be estimated. The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.” Given the past history of overfishing, there is far more than an appreciable risk.</p> <p>The “soft limit” at 20% is not above the level at which there is an appreciable risk of impairing reproductive capacity in orange roughy stocks. There is significant uncertainty arising from the relatively short time that such long lived stocks have been fished, uncertainty</p>

	<p>about the stock-recruit relationship and these are compounded by the history of overfishing.</p> <p>Stocks plummeted to 20-30% of un-fished biomass from 2000 to 2015 and have not recovered above that. Uncertainties in this assessment include how much of spawning biomass the acoustic survey covers, whether a spawning plume (“Rekohu”) is new or longstanding, and patterns in year class strength as only 2 years of age composition data was used. The uncertainties about the so-called Rekohu spawning plume means that it is quite possible that the stock has been fished down to below the point where recruitment would be impaired, and the stock would not meet the SG 60 level.</p> <p>On most of the South Rise and east features, catch rates have tended to decline rapidly and then flatten out with little recovery. The fishery on the South Rise moved east over time “which was described as a serial depletion of orange roughy from the hills” (Clark 1997, MPI 2015). “The non-spawning fishery has therefore largely contracted to the hill complexes in the southeast corner of the Rise.” (MPI 2015). There has also been a “spatial contraction of the fishery during the spawning period” (MPI 2015). Again, the target reference points are too high and the stock is not at that point.</p> <p><b>ORH7A</b></p> <p>The fishery was fished down to 10% of biomass in the 1980s, and only reached anywhere near 30% of biomass during the last 6 years. The stock was assessed in 2013 and estimated to be 20 or 24% <math>B_0</math>. As such, it is close to the soft limit (which itself is uncertain) and would not meet the SG 60 level.</p> <p>Uncertainties in this assessment include how much of spawning biomass the acoustic and trawl survey covers and patterns in year class strength. While the assessment model shows increasing biomass, the acoustic and trawl surveys have been declining since 2009 – the 2013 survey was 54% of the 2009 result.</p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i> The CAB made mistakes as to the existing status of the stocks.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i> The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>Considering the history of overfishing, often down to 10% of virgin</p>

biomass, the serial depletion of the stocks and the known longevity and slow reproduction of orange roughy, and the many uncertainties involved, no reasonable CAB could have reached a decision to score any stocks at 60%.  
The errors are material as they go to the heart of sustainability.

MRAG Response: This PI does not deal with the harvest strategy or the justification for reference points. The objector does not present any evidence that the stock is currently below the PRI (all UoC) or currently below the target range (for ORH3B NWCR and ORH 7A). For NWCR and 7A, the stocks are well above the lower end of the target range and still increasing. Figure 6 shows the current biomass of the ORH3B NWCR stock is well above the lower end of the target range. The figure clearly demonstrates recovery of this stock from lower levels. Previous low levels do not preclude certification.

For PI 1.1.1, the MSC requires evaluation of current status. The MSC has two criteria for current status: 1) at or above target reference point or 2) fluctuating around target reference point. This second criterion allows temporary declines below the target level. ORH 3B NWCR and ORH 7A stocks are well within the target reference range, and ORH 3B ESCR is well above PRI. The stocks meet the first criterion of being at or above the target reference point (or reference range in this case). The MSC requirements do not require that we base the current status on abundance observed in the past. Therefore, the observation by DSCC of low biomass in the past does not apply to biomass as currently estimated.

The assessment team addressed the uncertainties raised by the objector in the report, who does not provide evidence that the team did not deal with the uncertainty. As discussed in General Points on Uncertainty (Section 3.1), it is impractical to deal with every conceivable uncertainty; the assessment team has addressed the key uncertainties as required. As necessary, we have further dealt with comments on uncertainty where appropriate for each stock.

DSCC makes several general statements concerning reference range (“bounds”), reference points based on justifiable and reasonable practices, and the suitability of the limit reference point. The team notes that these concerns do not apply to PI 1.1.1, as they deal with reference points and harvest strategy. Regarding the reference range, the HCR requires a decreasing harvest rate as the stock approaches the lower end of the TRP range, and allows an increasing harvest rate as the stock approaches the upper end of the range. 30% will not become a de facto target if the HCR is applied. The justifications for reference points are well documented in the stock assessment and MSE documents and well summarized in the assessment report. DSCC provides no evidence to the counter, other than the observation of low biomass in the past. The current harvest strategy and harvest control rule did not exist during the period of depletion, so that period is not relevant to the current situation.

ORH 3B NWCR: Figure 6 shows the current biomass well above the lower end and near the middle of the target range. The figure clearly demonstrates recovery of the stock from lower levels. Previous low levels do not preclude certification.

ORH 3B ESCR: The stock never fell below the LRP, and has begun recovery, with biomass just below the bottom of the TRP range (Figure 8). Uncertainties in the assessment of the Rekohu plume were extensively dealt with in the stock assessment and summarized in the assessment report (p. 25). While uncertainty exists, it was dealt with quantitatively and probabilistically to the extent practicable. The stock assessment report provides a solid

rationale for the way the Rekohu plume is addressed in the assessment. Regarding the South Rise and east features, the stock assessment covers the entire stock and reflects the changes in exploitation pattern. The stock assessment did not rely on catch rates. Therefore, the reference points reflect a rigorous evaluation of the best available information.

ORH 7A: The stock is well above the LRP, and has experienced increasing abundance since the early 2000s (Figure 10). The stock is clearly above LRP and well within the target range with high certainty. The fit of the models to the available data (in particular the estimates of abundance) was considered in scoring the fishery, and we responded to this comment in the responses to DSCC in the Final Report. The decline in estimates of abundance from 2009 to 2011 and 2012 is barely statistically significant (Fig. 30 of the assessment report) and the model is able to pass through the confidence intervals. Overall, the fit the model is quite adequate by assessment standards (lower right panel of Fig 30 of the assessment report). The issue raised by DSCC regarding over-optimistic assessments was explicitly noted in the report. Previous assessments are no longer relevant given the recent improvements made to the assessment and harvest strategy. The evaluation of the fishery specifically considered the trends in the data when evaluating the status of the populations and the reliability of the assessment.

Conclusions:

- a) The Assessment Team has demonstrated that it did not make a mistake in material fact. The stock status information came from the Stock Assessment Report (MPI, 2014a,b,c; Cordue 2014b) and was reported accurately.
- b) DSCC did not specify which material it put forward that the Assessment Team did not consider. The Assessment Team responded to DSCC *et al.* in great detail in the Final Report, and demonstrated conformance with the MSC requirements.
- c) The previous stock status, exploitation patterns, and life history were explicitly considered in the stock assessment report, and the results clearly summarized in the assessment report. Any reasonable CAB would follow the MSC requirements and would have reached similar conclusions.

<p><i>Performance Indicator</i></p>	<p><i>PI 1.1.3 Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe: 90 Should be: below 60 (page C154; Page 130)</i></p>
<p><i>Reason</i></p>	<p>PI 1.1.3 All stocks are below target levels, and so are depleted. Rebuilding strategies must be implemented in a manner consistent with the MSC standard. Plans must include rebuilding timeframes which are based on the time it would take a stock to rebuild to target levels without any fishing (<math>T_{min}</math>) and the standard allows rebuilding to take up to twice this duration (<math>2 \cdot T_{min}</math>). Rebuilding of all stocks to target levels must occur within the <i>shorter</i> of 30 years or 3 times its generation time to achieve SG60: but orange roughy reach reproductive maturity at ages of approximately 30 years,</p> <p>There are enormous uncertainties left in orange roughy stock assessments, and these uncertainties are validated in the serial depletions that have occurred to date.</p>

<p>Rationale</p>	<p>a. <i>The CAB made a mistake as to a material fact.</i>  The CAB made mistakes as to whether there is a reasonable expectation of success.</p> <p>b. <i>The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i>  The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p>c. <i>The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i>  No reasonable CAB could have reached a decision that there is a reasonable expectation of success.  The CAB should have applied PI 1.1.3 for each area individually, since each stock has a different status. It cannot be said for orange roughly as a whole that “stocks” have a reasonable expectation of success; and the rebuilding timeframe must be for each stock. Instead, the CAB looked only at the ORH3B ESCR stock (page 131). That stock is estimated to be at only 24% <math>B_0</math>, having plummeted from 2000 to 2015 to 20-30%, and have not recovered above that. Historical catch rates have declined rapidly and flattened out with little recovery. In no way can a reasonable CAB conclude that there is a “reasonable expectation of success” of rebuilding. The errors are material as they go to the heart of sustainability.</p>
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MRAG Response: This demonstrably false statement illustrates that the objector does not understand the MSC requirements. We have clearly demonstrated that all areas are above PRI, and the NWCR and 7A stocks are well within the target range so do not require rebuilding. For ORH 3B ESCR the team concluded that the rebuilding time frame is implicit, given the commitment to rebuild quickly (harvest below guidelines from HCR) and the evident rebuilding since ~2010. It may be that the objector has referred in error to the biomass estimate from the MPD base case model, which did give 24% for the ESCR stock. MPD models are only used in New Zealand to define the model structure and not to provide management advice. The Bayesian MCMC models, as reported in Cordue 2014b and in the various MPI Plenary documents, are those used to develop management advice and also form the basis for the MRAG assessment, and gives stock status as 29.6% $B_0$  i.e. 0.4% below the lower bound of the management target range.

Conclusions:

a) The Assessment Team has demonstrated that it did not make a mistake in material fact. The rebuilding information came from the Stock Assessment Report (Cordue 2014b) and was reported accurately, and the management strategy was confirmed with DWG and MPI.

b) DSCC did not specify which material it put forward that the Assessment Team did not consider. The Assessment Team responded to DSCC *et al.* in great detail in the Final Report, and demonstrated conformance with the MSC requirements.

c) Any reasonable CAB would have reached a similar conclusion. The MSC certification requirements do not allow a CAB to consider a stock as depleted if it scores greater than or equal to SG80 for PI 1.1.1. The stock assessments for the stocks clearly show them greater than or equal to SG80 for NWCR and 7A.

<i>Performance Indicator</i>	<p><i>PI 1.2.3 There is a robust and precautionary harvest strategy in place</i>  <i>ORH3B NWCR 85</i>  <i>ORH3B ESCR 85</i>  <i>ORH7A 85</i>  <i>Should be: below 60 (page C156; Page 133)</i></p>
<i>Reason</i>	<p>For a score of 60, the harvest strategy must be “likely to work based on prior experience or plausible argument.”</p> <p>Prior experience shows the opposite.</p> <p>As noted by the CAB, the harvest strategy is merely an agreement between industry and MPI. Therefore there can be no certainty that the MPI will set catch limits for the three stocks using the agreed HCR. The statement that “the fisheries have had previous conservative management that has led to abundance increases” is both wrong (management has not been conservative) and misleading (the vast majority of stocks have crashed to well below MSY). The statement is also at contrast with what is stated lower (“the harvest strategy is an improvement on how management advice was provided in the past.” The heavy reliance on Cordue (2014) is misplaced.</p>
<i>Rationale</i>	<p><i>a. The CAB made a mistake as to a material fact.</i>  The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i>  The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i>  No reasonable CAB could have reached this decision.  The errors are material as they go to the heart of sustainability.</p>
<p><i>MRAG Response:</i> MRAG notes that Harvest Strategy is PI 1.2.1, not 1.2.3 (Information). Therefore, we have responded to Harvest Strategy, not Information. The objector relies on past overharvest (that has been rectified) as a rationale for current uncertainty. MPI and DWG have learned the results of overharvest, and have taken on conservative management to avoid future problems through the harvest strategy described in the assessment report. There was no formal harvest strategy during the period of depletion. The objector has confused management during the period of declining biomass with the management that led to the recovery of all stocks. The level of scientific research and analysis applied to the fisheries gets fully incorporated in the harvest strategy. The work by Cordue is first rate and suitable for basing management advice.</p> <p>The analyses referenced in the assessment report demonstrate that the harvest strategy is likely to work in theory as demonstrated in the models, and in practice given the consistent increases in biomass following a change to more conservative management. This is consistent with GCB2.5: “Harvest Strategy PIs are expressed in relation to achieving outcomes, in particular the harvest strategy shall be appropriate to achieving the management objectives</p>	

expressed in the target and limit reference points.” The agreement on the harvest strategy is a firm commitment by both parties. MPI has assured MRAG Americas of this.

Conclusions:

- a) The Assessment Team has demonstrated that it did not make a mistake in material fact. The rebuilding information came from the Stock Assessment Report (Cordue 2014b) and was reported accurately, and the management strategy was confirmed with DWG and MPI.
- b) DSCC did not specify which material it put forward that the Assessment Team did not consider. The Assessment Team responded to DSCC *et al.* in great detail in the Final Report, and demonstrated conformance with the MSC requirements.
- c) Any reasonable CAB would have reached a similar conclusion. The assessment report and the response to submission clearly describes a well-constructed harvest strategy. The management system recognizes the past overexploitation of the resource, and has taken action through the stock assessment and HCR (see PIs 1.2.4 and 1.2.2) to assure that the current management will lead to more sustainable harvest levels. The Harvest Strategy includes the setting of catch limits to provide for sustainable levels of fishing mortality (with 2014 exploitation rates between 0.5% and about 3% for the UoCs), reflecting a conservative and robust management approach. Further, the harvest control rule has been set to reduce the exploitation rate when the stock is below (and in fact within) the management target range for precautionary reasons. The robustness of the harvest control rule was evaluated relative to four main uncertainties: (a) the form of the stock-recruitment relationship (Ricker or Beverton-Holt); (b) whether fishing is restricted to spawning fish or independent of maturity status; (c) the extent of variation and temporal correlation in recruitment about the assumed stock-recruitment relationship; and (d) bias in the estimates of stock status and vulnerable biomass as well as a higher level of error in the estimates on which the HCR is based.

<i>Performance Indicator</i>	<p><i>PI 1.2.2 There are well defined and effective harvest control rules in place</i>  <i>ORH3B NWCR 90</i>  <i>ORH3B ESCR 90</i>  <i>ORH7A 90</i>  <i>Should be: below 60 (page C156; Page 136)</i></p>
<i>Reason</i>	<p>For a score of 60, it is required that “Generally understood harvest control rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.”</p> <p>The rules are not in place: see above. They are simply an agreement between industry and MPI.</p> <p>The Management Strategy Evaluation (MSE) did not explicitly account for the impact of spawning on recruitment success, as is noted (pages 135-136). The evaluation did not account for the impacts of climate change, and did not cover a very wide spectrum of uncertainties – and stock structure was not accounted for.</p> <p>Nor does the evaluation take account of ocean acidification. As Williams et al (2010)<sup>i</sup> found “Resilience of seamount ecosystems dominated by corals is low compared to most other marine systems</p>

	<p>subject to disturbance by bottom trawling because there are no alternative habitats of the same value for supporting associated species, and because trawling typically removes coral habitat from large areas of individual seamounts. Management to conserve seamount ecosystems needs to account for changing oceanographic conditions (ocean acidification), as well as the direct impacts of human activities such as bottom trawling.”</p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i> The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i> The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i> No reasonable CAB could have reached this decision. The errors are material as they go to the heart of sustainability.</p>
<p><i>MRAG Response:</i> The rules are in place used for managing the fishery. Voluntary management is accepted by the MSC standard. The voluntary compliance with the HCR by DWG occurred prior to the opportunity for MPI to officially implement them. MPI has committed to implement the HCR. The devolution of some management aspects from MPI to DWG provides for industry to implement actions supported by MPI. MPI monitors actions to assure compliance.</p> <p>Given the nature of the fishery, it is not possible to directly measure the impact of spawning on recruitment (if it exists) and consequently it is not modelled explicitly in the MSE. The MSE section of the report gives extensive rationale for minimal, if any, impacts of trawling on recruitment success. The steepness parameter, which represents the increasing limb of the stock-recruitment relationship, was based on the response of the MEC stock to fishing. There is far more consideration of this issue for orange roughy than for most species in this situation.</p> <p>The text was updated in the Final Report to specifically mention climate change. It should be noted that very few MSEs for fish stocks attempt to address the impacts of climate change. The continuous updating of stock assessments and MSC surveillance will capture the effect of climate change on the stocks if and when it occurs.</p> <p>Note: the reference to coral is irrelevant to the harvest control rule, and will be discussed in PIs 2.3.x.</p> <p>Conclusions:</p> <p>a) The Assessment Team has demonstrated that it did not make a mistake in material fact. The HCR was used for management with the support of MPI, even though the implementation was voluntary until official implementation.</p> <p>b) DSCC did not specify which material it put forward that the Assessment Team did not consider. The Assessment Team responded to DSCC <i>et al.</i> in great detail in the Final Report, and demonstrated conformance with the MSC requirements.</p>	
<p>c) Any reasonable CAB would use the information available from the stock assessment and MSE, and the implementation if the HCR by DWG with support of MPI to conclude that the</p>	

HCR is in place. The HCR was built on results of MSE that considered a wide range of uncertainties.

<p><i>Performance Indicator</i></p>	<p><i>PI 2.2.1 The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups. (page 152; page C177)</i>  <i>Scores: ORH3B ESCR – 75</i>  <i>OrH3B NWCR – 75</i>  <i>ORH7A – 95</i>  <i>(Page 164)</i>  <i>Should be: Below 60</i></p>
<p><i>Reason</i></p>	<p>A score of 60 requires that “Main bycatch species are likely to be within biologically based limits.”</p> <p>The orange roughy fishery is still lacking key information on at least some of the main by-catch species. NZ MPI has stated that if catch levels are deemed to be impacting on the sustainability of a by-catch population then by-catch species may be considered for possible introduction into the QMS, or other management measures may be implemented, such as catch limits, gear restrictions or closed fishing areas (MPI, 2010a; Page 45). Yet without stock assessments for affected by-catch, the fishing managers will not know. MPI has also observed that orange roughy fishing is also known to interact with several species of sharks, many reported using generic codes for ‘other sharks and dogfish’ and ‘deepwater dogfish’, that are vulnerable to overfishing.</p> <p>By-catch is a significant issue. In the ORH3B Northwest Chatham Rise, Baxter’s lantern dogfish are considered a main by-catch species because they have low productivity and high vulnerability, and reach the 1% threshold set for shark species, and in the RH3B East and South Chatham Rise, catches from the ORH3B ESCR UoA average about 100 t per year of Baxter’s lantern dogfish and about 180 t of combined dogfish.</p> <p>The shovelnose spiny dogfish, <i>Deania calcea</i>, is caught in fairly large numbers by the orange roughy fishery yet there are no stock assessments and no management of the species under the New Zealand quota management system. (Punt et al. 2013). Other species of concern include the pale ghost shark, <i>Hydrolagus bemisi</i>, dark ghost shark, <i>H. novaezealandiae</i>, and the smooth skate, <i>Dipturus innominatus</i>.</p> <p>It is simply not possible to state that species of deepwater dogfish are likely to be within their biologically based limits, given the lack of data and their poor reproductive output. There have been no stock</p>

	<p>assessments.</p> <p>These arguments and concerns also apply to PI 2.2.2 (there is no QMS for these – see page 154), so it cannot be said there is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations, and to PI 2.2.3 (PI2.2.3 Bycatch species information / monitoring PISGs) which requires for a score of 60 that information is adequate.</p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i> The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i> The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i> No reasonable CAB could have reached this decision. The errors are material as they go to the heart of sustainability: excessive bycatch is not sustainable.</p>
<p>MRAG Response: GCB3.2.2 recognizes that “<i>Direct observations and quantitative analysis are often limited in P2 components and so there may be a greater reliance on qualitative interpretations. Achieving an 80 score through qualitative assessment would typically require the risk to be very low and for there to be ongoing monitoring in place to provide measurement of continued performance. A long history of stability or continuity in the fishery when monitored and managed on the basis of qualitative assessments or expert judgements can provide good evidence for sustainability of the fishery.</i>”</p> <p>The assessment team notes that, based on vulnerability and exceeding a 1% bycatch threshold, only Baxter’s lantern dogfish were defined as ‘main’ species for the ESCR and NWCR UoAs, and the ORH 7A UoA had no ‘main’ bycatch species.</p> <p>The assessment team demonstrated that the main dogfish species are monitored during trawl surveys. The surveys demonstrate that abundance has been stable over the years of the surveys, 1992-2014. At a minimum this suggests that the fisheries are not hindering the stocks. Support for a conclusion that the stocks are above PRI comes from the observation that recruits and mature individuals occur in the size distribution: if no recruits occurred, one could surmise that the fishery may have hindered recruits; if no mature fish occur, one could surmise that the fishery had reduced them with possible future recruitment issues. However, having both stable abundance and well-distributed length frequency covering the full range of sizes strongly suggests minimal depletion from unfished abundance.</p> <p>Conclusions:</p> <p>a) The Assessment Team has demonstrated that it did not make a mistake in material fact. The HCR was used for management with the support of MPI, even though the implementation was voluntary until official implementation.</p>	
<p>b) DSCC did not specify which material it put forward that the Assessment Team did not consider. The Assessment Team responded to DSCC <i>et al.</i> in great detail in the Final Report, and demonstrated conformance with the MSC requirements.</p>	

c) Any reasonable CAB would use the information available from the surveys to draw a conclusion that a stable biomass and well-distributed length frequency suggests that the main elasmobranch species are within biological limits.

<i>Performance Indicator</i>	<i>PI 2.3.1 The fishery meets national and international requirements for the protection of ETP species. (ETP=Endangered, Threatened or Protected Species)</i>
<i>Reason</i>	<p>The following considerations apply to all Principle 2 considerations.</p> <p>As Williams et al found in 2010, “There is ample and robust evidence that benthic communities of seamounts in the Australian and New Zealand region have been impacted by bottom trawling.”</p> <p>At the scale of individual seamounts, impact includes the destruction and removal of extensive areas of ‘reefs’ or ‘thickets’ of stony coral matrix which forms complex biogenic habitat (Koslow et al. 2001; Althaus et al. 2009. Clark &amp; Rowden 2009)<sup>iii</sup></p> <p>Bottom trawling causes physical disturbance and removal of 3D biogenic structures on margins and seamounts. Widespread interference with seeps is likely, affecting habitat provision, trophic subsidies and connectivity.(Levin et al 2016).<sup>iii</sup></p> <p>Deep-sea trawling and oil, gas and mineral exploration and extraction now take place at the depths occupied by the assemblage. The impact of these activities on what are likely to be very slow-growing individuals is potentially profound and long lasting. Our observations suggest that an assumption that biota at these depths is sparse and hence that biological impacts of resource exploitation is likely to be slight is not warranted.”<sup>iv</sup></p> <p>“The trawl fisheries for orange roughy, oreos, and cardinalfish take place to a large extent on seamounts or other features (Clark &amp; O’Driscoll 2003, O’Driscoll &amp; Clark 2005). These features are often geographically small and, in common with other, localised habitats like vents, seeps, and sponge beds, do not appear on broad-scale habitat maps (e.g., at EEZ scale) and cannot realistically be predicted by broadscale environmental classifications.” (MPI 2014).</p> <p>Most of orange roughy catch comes from seamounts (including hills and ridges). O’Driscoll and Clark (2003) reported that 59.5% of effort and 62.4% of catch targeted on orange roughy comes from seamounts.</p> <p>The impact of bottom trawling on corals is likely to be significant with high sensitivity to trawling and long recovery times in the order of decades if not centuries.</p> <p>A large number of researchers have noted a high degree of</p>

endemism associated with seamounts. De Forges et al (2000) noted that:

*“Seamounts comprise a unique deep-sea environment, characterized by substantially enhanced currents and a fauna that is dominated by suspension feeders, such as corals.”*

*“Low species overlap between seamounts in different portions of the region indicates that the seamounts in clusters or along ridge systems function as 'island groups' or 'chains,' leading to highly localized species distributions and apparent speciation between groups or ridge systems that is exceptional for the deep sea. These results have substantial implications for the conservation of this fauna, which is threatened by fishing activity.”*

This endemism is likely to mean that the classification system devised by Rowden et al (2005) will under-estimate the biodiversity on seamounts. For example, fish species diversity on some seamounts has also been reviewed by NIWA scientists (Tracey et al 2004). Tracey et al (2004) found there was clearly different fish fauna on seamounts north and south of 41oS and that in 10 seamount complexes there was different species richness. Even within a seamount complex they found different species dominating different seamounts.

Tracey et al (2011) analysed the distribution of nine groups of protected corals based on bycatch records from observed trawl effort from 2007–08 to 2009–10, primarily from 800–1000 m depth. For the orange roughy target fishery, about 10% of observed tows in FMAs 4 and 6 included coral bycatch, but a higher proportion of tows in northern waters included coral (28% in FMA 1, 53% in FMA 9). (MPI 2014)

Tracey et al (2012) noted in a study of a seamount complex on the North Chatham Rise which had been targeted for orange roughy – “The study showed that fish assemblages on seamounts can vary over very small spatial scales, in the order of several km. However, patterns of species similarity and abundance were inconsistent across the seamounts examined, and these results add to a growing literature suggesting that faunal communities on seamounts may be populated from a broad regional species pool, yet show considerable variation on individual seamounts.”

The impacts of trawling on seamounts and the potential recovery time of the diversity that is there could take centuries to recovery from just one trawl. As Clark et al (2015) observed: “many deep-sea invertebrates are exceptionally long-lived and grow extremely slowly: these biological attributes mean that the recovery capacity of the benthos is highly limited and prolonged, predicted to take

decades to centuries after fishing has ceased.”

Protected deep sea corals are amongst those long-lived invertebrates. (Tracey et al 2003). Corals collections from trawl nets have been aged at 300-500 years old for bubblegum coral (*Paragorgia arborea*), at least 300-500 years for bamboo corals (*Keratoisis* sp.) and deep-sea stony corals have reported ages of 50 to 640 years (*Enallopsammia rostrata*).

### **Impacts on Habitats, and Vulnerable Marine Ecosystems**

Bottom trawls in the New Zealand orange roughy fishery target seamounts on which vulnerable marine ecosystems have formed over thousands of years. Bottom trawlers destroy coral, sponges and other species and vulnerable marine ecosystems. These impacts are a central concern for the Submitters, and are an insurmountable problem for the applicants. Coral bycatch from the orange roughy fisheries on the Chatham Rise includes black corals, stony branching and cup corals, and dead coral rubble, with relatively smaller catches of bubblegum coral, precious coral, other gorgonians (such as primnioids and plexaurids) and hydrocoral. (page 65) The overlap of coral distribution and the fishing activities, combined with corals low productivity long recovery period, makes deep-sea coral populations especially vulnerable to damage by fishing gear. (page 66)

Some misconceptions need to be addressed. Firstly, it is sometimes claimed that the footprint of the trawl fishery is small. This is both wrong in fact and completely misleading. The fact is that a significant area of each type of habitat has been impacted by bottom trawlers, which target seamounts. Cumulative impacts and connectivity between ecosystems means that this claim can be given no credibility. For instance, the assessment claims that “[o]f the 1.1% of the SPRFMO Convention Area that is shallower than 2,000 m, about 0.5% is deeper than 1,500 m and thus deeper than orange roughy fisheries normally operate, has never been fished and is not within any footprint declared to SPFRMO. This means that >99% of the SPRFMO Convention Area is not within any bottom fishing footprint declared to SPRFMO and is closed to bottom trawling.” (Page 77) This logic fails: the issue are the VMEs that are damaged and destroyed by orange roughy fishing, not the areas that are not.

The CAB should have considered a report published in 2012 on the extent of the spatial impact of the NZ bottom trawl fisheries both inside the NZ EEZ and in the SPRFMO area.<sup>v</sup>

The report estimates a cumulative area of 16,000 km<sup>2</sup> of seabed impacted by the NZ high seas bottom trawl fishery in the SPRFMO area between 2002-2006. The report also goes into some detail on

information provided by the NZ Ministry of the Environment that fishing by New Zealand vessels in 2008, most of which occurred within the New Zealand EEZ, operating in waters deeper than 200 m, conducted 38,648 trawls with a cumulative impact of 85,222 km<sup>2</sup> on the seabed. The actual area impacted will certainly be less given that many tows will occur over areas previously towed but the figures nonetheless point to the potentially large areas of the seabed impacted in relatively short periods within the overall timeframe of the deepwater bottom trawl fisheries. An excerpt from the report follows:

*“Case study: Impact of New Zealand’s bottom trawl fisheries (South Pacific)”*

According to information submitted by the New Zealand Ministry of Fisheries to the South Pacific RFMO negotiating process, 40 New Zealand flagged vessels engaged in high seas bottom trawl fishing in the South Pacific during the period 2002-2006 (New Zealand Ministry of Fisheries 2009). The main target species were orange roughy (75% of the reported catch), deep-sea cardinal fish, oreos, and alfonsinos.

The fleet conducted altogether 11,145 tows during this period with most of the fishing activity concentrated in the months of April-August. An average of 18 vessels participated in the fishery per year. A previous submission by New Zealand to the South Pacific RFMO negotiating process indicated that the high seas bottom trawl fleet fished a total of 4,379 days in the period 2002-2006. The total reported catch for the five year period was 12,352 t of “retained” catch, representing approximately 1.1 t per tow. The average number of tows per day would have been approximately 2.5 tows per day. Each vessel would have fished, on average, slightly less than 50 days per year.

Below we provide a number of ‘worst case’ estimates of the impact of bottom fisheries, calculated by multiplying the fished area per tow with the number of tows per fishing vessel per year. It is possible that areas are fished more than once, in which case the total impacted area is smaller.

To estimate the cumulative impact of New Zealand’s trawl fishery in the South Pacific in the period 2002- 2006 we used the following data (see also Table 3). The average distance per tow was 5.8 nautical miles or 10.8 kilometers, with an average towing time of 2.2 hours. According to the New Zealand Ministry of Fisheries, the optimum spread of the trawl doors or otter boards during towing is 120-150 m (with maximum spread at app. 200 m). Using 135 m as the mean optimal spread, the average area of seabed impacted by the gear would have been approximately 1.46 km<sup>2</sup> per trawl tow. Thus, assuming a bottom trawl vessel targeting orange roughy averaged 2.5 tows per day, the vessel would have impacted approximately 3.65 km<sup>2</sup> of seabed per day of fishing. The cumulative area of impact on the seabed of the high seas bottom fleet for the five year period would have been approximately 16,000

square kilometers or 3,200 km<sup>2</sup> per year. Each vessel would have averaged a cumulative impact of approximately 180 km<sup>2</sup> of seabed for 1.5-2 months of bottom trawl fishing per year (see Table 3).

More generally, the New Zealand Ministry of the Environment estimated the seabed impact of large-scale bottom trawl fishing by New Zealand vessels in 2008, most if not all of which occurred within the New Zealand EEZ. A fleet of 68 large fishing vessels, primarily vessels longer than 28 m operating in waters deeper than 200 m, conducted 38,648 trawls with a cumulative impact of 85,222 km<sup>2</sup> on the seabed. Each tow would have impacted an average of 2.2 km<sup>2</sup> of the seabed with each of the 68 vessels making an average of 568 tows in 2008. Many of these vessels would have been targeting deep-sea species such as hoki *Macruronus novaezelandiae*, oreos, and orange roughy with at least some of the fishing targeting aggregations of fish associated with seamounts (or hills, knolls, or rises) where the tows are often shorter (in terms of length and time in contact with seabed) than in continental slope areas (Ministry of Environment New Zealand 2010).

The calculation of the average area impacted per trawl or tow by bottom trawlers based on the information provided by the New Zealand Ministry of the Environment results in a higher figure than the figure derived from using the information submitted by the New Zealand Ministry of Fisheries for the high seas bottom trawl fisheries in the South Pacific. However, this may be due to a relatively larger proportion of tows within New Zealand's EEZ occurring along continental slope areas or large plateaus and rises as opposed to trawling on seamounts (which tend to involve shorter tow times)." (Pages 51-52)

Secondly, it is sometimes claimed that impacts are restricted to the trawl footprint. However, sediment clouds affect surrounding areas.

Thirdly, it is sometimes claimed that trawls follow established tow lines. Yet there is no evidence that this is the case and that trawls do not in fact impact new areas, and evidence of corals and sponges being caught in nets underline that the reverse is the case. This is itself a problem. There are no prior assessments of areas before they are trawled, and without that, there can be no confidence that new vulnerable marine ecosystems (VMEs) are being destroyed or damage. As MRAG notes, "Recent information from trawl surveys supports a conclusion that coral will remain well established on fished UTFs (Underwater Topographic Feature), although not at the density prior to trawling." (pages 77-78). In other words, coral has been destroyed.

Another ecosystem issue is that of removal of orange roughy biomass on the ecosystem, its biodiversity and related groups or species.

	<p>In summary, there is no basis for awarding SG60, far less SG80, based on the damage to coral. The draft assessment that SG80 level is not met for NWCR and ESCR with regard to ETP coral species due to unacceptable impacts is supported by the submitters, but this conclusion should also have been reached for ORH7A.</p> <p>As with much of the assessment, the CAB minimises damage and dismisses it without objectively analyzing the data. In PI 2.3.1, the CAB states that “National legislation does not set numerical limits on coral interactions, but does require minimizing impacts; the orange roughly fisheries tend to fish in previously fished areas on UTFs, which minimizes new damage.</p> <p>New Zealand does not set quantitative limits on the interactions of the orange roughly fisheries, but has strong policies and strategies for minimizing interactions with marine mammals and seabirds. The policies also apply to corals, and measures such as closed areas and limited trawl lines apply to the fisheries. Therefore, the fisheries high degree of certainty to be within limits of national and international requirements for all ETP elements” (page 160)</p> <p>The premises, stated as half truths, in no way justify the stated conclusion that “Therefore, the fisheries high degree of certainty to be within limits of national and international requirements for all ETP elements.”</p> <p>The required outcome for (a) for 60 is “Known effects of the fishery are likely to be within limits of national and international requirements for protection of ETP species.” It is clear that the reviewers wished to attain 100, so posited the “high degree of certainty” outcome above. They could not be more wrong. In fact they are not even “likely” to be within the limits of international requirements.</p> <p>The UNGA has laid down very specific guidelines to protect both deep sea stocks and vulnerable marine ecosystems. It is shocking that the reviewers made the finding about international requirements without investigating those international requirements.</p> <p>In 2006, after intensive negotiations and discussions, the United Nations General Assembly adopted resolution 61/105 which called on high seas fishing States individually and through RFMOs to take a series of specific actions to manage bottom fisheries on the high seas as a matter of priority. These measures were intended to protect the long-term sustainability of deep-sea fish stocks, and to “prevent significant adverse impacts” (SAIs) on “vulnerable marine ecosystems” (VMEs) by bottom fisheries, or else ensure that such fisheries are “not authorized to proceed”.<sup>vi</sup> The specific actions were outlined in paragraph 83 of resolution 61/105 and included the following:</p>
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- conduct impact assessments to determine whether bottom fishing activities would have significant adverse impacts on VMEs or on the long-term sustainability of deep sea fish stocks;
- close areas of the high seas to bottom fishing where VMEs are known or likely to occur and “ensure that such activities do not proceed” unless the bottom fishing in such areas can be managed in a way that prevents significant adverse impacts on vulnerable marine ecosystems;
- require RMFO members to ensure that vessels flying their flag cease bottom fishing activities in areas where, in the course of fishing operations, VMEs are encountered.

Following the adoption of resolution 61/105, a number of States believed that, in order to facilitate its implementation, it was necessary to establish a common agreement on the operational definition of key terms. In March 2007, it was therefore agreed at the 27<sup>th</sup> Session of the FAO Committee on Fisheries that States would negotiate, under the auspices of FAO, an international set of guidelines for the implementation of resolution 61/105 which would, inter alia, establish an agreed set of operational criteria for conducting impact assessments of deep-sea fisheries, identifying VMEs, and defining “significant adverse impacts”. FAO subsequently held an Expert Consultation on deep-sea fisheries to draft the guidelines in September 2007, followed by two rounds of intergovernmental negotiations (referred to as FAO “Technical Consultations”) to formally negotiate and adopt the International Guidelines for the Management of Deep Sea Fisheries in the High Seas in 2008.

In 2009, the UNGA again reviewed the actions taken by States and RFMOs to implement the bottom fisheries provisions of the previous UNGA resolution, in this case resolution 61/105. Based on the review, the UNGA adopted resolution 64/72, which reaffirmed and strengthened the commitments contained in resolution 61/105. and endorsed the new FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas (hereafter referred to as the FAO Guidelines). In paragraph 119, resolution 64/72 further committed States individually and through RFMOs to take urgent actions, inter alia, to “ensure that vessels do not engage in bottom fishing” until impact assessments have been carried out consistent with the criteria established in the FAO Guidelines, and to “ensure the long-term sustainability of deep sea fish stocks and non-target species and the rebuilding of depleted stocks”. A key paragraph, Paragraph 120, specifically calls on States and RFMOs “not to authorize bottom fishing activities” until the measures agreed to in paragraph 119 and resolution 61/105 have been adopted and implemented.

Once again, following the UNGA workshop on bottom trawling in

2011, at which it was clear that the resolutions were not being fully implemented and that some environmental impact assessments were not being made public, the UNGA review of actions taken since the adoption of previous resolutions revealed major shortcomings in their implementation, and emphasized “the need for full implementation by all States and relevant regional fisheries management organizations and arrangements of their commitments ... on an urgent basis”.<sup>vii</sup>

Resolution 66/68, adopted in 2011, emphasised the importance of assessments, and called for further actions by States and RFMOs to:

- strengthen procedures for both carrying out impact assessments to take into account individual, collective and cumulative impacts, and for making these assessments publicly available;
- establish and improve procedures to ensure that assessments are updated when new conditions or information so require;
- establish and improve procedures for evaluating, reviewing and revising, on a regular basis, assessments based on best available science and management measures;
- establish mechanisms to promote and enhance compliance with the applicable measures related to the protection of VMEs in accordance with international law.

In the South Pacific, CMM 2.03 for the regulation of bottom fishing was adopted by the South Pacific Regional Fisheries Management Organization (SPRFMO) at the second meeting of the Commission in 2014, to replace the interim measures for bottom fisheries adopted in 2007 and 2009. At the fourth Commission meeting in 2016, the measure was slightly amended to become CMM 4.03.<sup>viii</sup> The current measure, CMM 4.03, largely incorporates the measures agreed on an interim basis in 2007 by establishing a historic existing fishing footprint area, an impact assessment requirement, a catch limitation, a move-on rule in some areas within the footprint<sup>ix</sup>, and provisions for fishing outside the footprint on the basis of a prior impact assessment.<sup>x</sup>

SPRFMO provided a draft ‘Revised Draft Bottom Fishery Impact Assessment Standard’ (BFIAS) in 2009.<sup>xi</sup> The draft however, failed to make it clear that fishing should not be allowed in areas where VMEs are known or likely to occur unless SAIs on VMEs can be prevented; nor did it establish adequate threshold quantities of VME indicator species for the move-on rule or explicitly require an assessment of the impact on non-target and most bycatch fish species, including ‘low productivity’, rare or endemic species. New Zealand<sup>xii</sup> stated that it intended to review its impact assessment in 2010, when it planned to review its implementation of the interim measures more fully;<sup>xiii</sup> this has not yet been done. Cumulative

impacts are still not being assessed.

New Zealand's management regime involves a mixture of open, closed and 'move-on' blocks.<sup>xiv</sup> New Zealand closed a substantial portion of its footprint to bottom fishing, including some areas where VMEs are known or likely to occur, by closing all previously "lightly trawled" areas within its footprint and approximately 15% of the "moderately" and "heavily" trawled areas within its footprint. The effect of these measures has been to eliminate bottom trawling in 41% of the total 217,463 km<sup>2</sup> that fall within the New Zealand bottom trawl footprint surface area; a further 30% (the moderately trawled areas) of the area was made subject to a move-on rule, and the remaining 29% (the heavily trawled areas) left open to bottom trawling with no constraints.<sup>xv</sup>

In its 2009 comments on the New Zealand approach to managing bottom fisheries, the US expressed serious concerns that the 20 minute blocks allow the incorporation of large swaths of "new" areas that would not otherwise have been included in the SPRFMO bottom fishing footprint if a smaller block area was used. It also asserted that the size of the 20 minute blocks allows bottom fishing in "new" or previously unfished areas, even in "heavily trawled blocks". The US expressed additional concerns regarding the lack of information on the specific impacts of fishing gear types on the seabed, and on the impacts of bottom fishing on target species other than orange roughy, as well as on bycatch species.<sup>xvi</sup>

New Zealand replied that it is not actually feasible for vessels to accurately trawl exactly the same track as trawled previously, notwithstanding the substantial improvements in navigational equipment over the past decade. New Zealand cited an analysis conducted by O'Driscoll & Clark (2005)<sup>xvii</sup> which shows that vessels do not repeat their trawl tracks when fishing seamount features typically targeted in the deep-water trawl fisheries, and that although there are some directional preferences on certain seamounts related to the topography of the seamount concerned, in other instances vessels may conduct radial trawls on seamounts from almost any direction.<sup>xviii</sup> Thus even on heavily trawled seamounts, areas of the seamount which have not been previously fished may still be vulnerable to the impact of continued bottom fishing. New Zealand also reported that most of the bottom trawling over the past several years has taken place in the heavily trawled blocks (where no restrictions are in place) given industry reluctance to operate in areas where a move-on rule is in place, but that within the heavily trawled blocks there were reports that new, previously unfished, features were being fished.<sup>xix</sup>

It was also pointed out by New Zealand that the areas where their vessels are authorized to bottom fish represent only 0.13% of the entire SPRFMO Area. However, it is important to note that Parker *et al* estimate that the footprint areas where New Zealand vessels are authorized to fish actually comprise approximately 16% of the

	<p>SPRFMO area seabed shallower than 2000 meters, and thus accessible to fishing.<sup>xx</sup> Moreover, in 2009, Penny <i>et al</i> in provided a more precise breakdown of the size of New Zealand's bottom fisheries footprint, and the areas open to bottom trawl fishing within the footprint, in relation to the overall area of seabed at various depths located within the SPRFMO Convention Area.</p> <p>In a 2013 review of the Australian and New Zealand footprints in the SPRFMO area, Penny noted that “estimates of the ‘fished area’ generated using any mapping resolution other than actual trawl tracks substantially exaggerate the areas within the footprints that have been impacted, with inclusion of substantial unfished areas within these ‘fished footprint’ maps” and concluded that some 95% to 96% of a footprint mapped using 20-minute blocks, as SPRFMO has done, would not have been previously fished. He went on to state that predictive habitat modelling studies indicated that there would be a “high probability of occurrence of vulnerable scleractinian corals and octocorals in unfished areas contained within the ‘fished footprint’” and that under UNGA resolutions, the expectation would be that vulnerable marine ecosystems (VMEs) occurring within ‘previously fished’ areas will be protected from significant adverse impacts, necessitating measures to protect these VMEs “irrespective of whether they occur within or outside ‘previously fished areas’.”<sup>xxi</sup></p> <p>New Zealand reports that VMEs are likely to occur in most high seas areas of the South Pacific where bottom fishing occurs (e.g. seamounts, rises, ridge systems). Despite this, the government has chosen to close only a portion of its footprint to bottom fishing. To implement the UNGA resolutions and SPRFMO interim measures, the New Zealand government engaged in consultations with the high seas fishing industry, environmental non-governmental organizations and government departments concerned with environmental conservation, and attempted to strike a balance between competing objectives: on the one hand the protection of all features known or likely to support VMEs from any SAIs from bottom fishing operations, and, on the other hand, to provide access to adequate and suitable target areas to provide for a viable and sustainable deep-water high seas trawl fishery. Thus, rather than closing all areas where VMEs are known or likely to occur unless fisheries are assessed for their impacts and can be managed to prevent SAIs on VMEs (as is called for in the UNGA resolutions), New Zealand has chosen to attempt to provide ‘adequate and representative protection’ from trawling impacts by closing approximately 40% of its bottom fisheries footprint and allow continued bottom fishing in the remaining areas with limited (a move-on rule in some areas) or no measures in place to prevent SAIs on VMEs.<sup>xxii</sup></p> <p>New Zealand announced changes to some areas within its bottom trawl footprint in 2015: two blocks (nos. 1 and 2) previously open to bottom trawl fishing (subject to a move-on rule) have been closed,</p>
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and one block previously within the footprint but closed to bottom trawl fishing (block #18) has been opened.<sup>xxiii</sup> New Zealand stated that it closed the two blocks because of the substantial bycatch of many species indicative of the presence of VMEs. It is not clear whether the move-on rule was ever triggered by trawling in these blocks, but New Zealand requires the reporting of any amount of bycatch of VME indicator species, not only amounts exceeding the level that triggers the move-on rule.<sup>xxiv</sup> New Zealand also intends to carry out exploratory bottom longlining<sup>xxv</sup> for toothfish in the SPRFMO area close to the boundary of the CCAMLR area in the mid-Pacific Ocean.

New Zealand has made some progress in predicting the distribution of VMEs within the SPRFMO area. Information on the distribution of VMEs in the SPRFMO area is very sparse however,<sup>xxvi</sup> and thus predicting where VMEs are relies on predictive models, which have been shown to be inaccurate to date.

A move-on rule has been adopted by New Zealand, but the rule is only applicable to 30% of the high seas areas where New Zealand vessels are currently permitted to bottom trawl fish. Bottom fishing in the 'heavily fished' blocks of the New Zealand footprint is not covered by the rule.

CMM 2.03 provides<sup>xxvii</sup> that Contracting Parties should undertake stock assessments of principal deep-sea fishery resources targeted, and, to the extent possible, taken as bycatch and caught incidentally in these fisheries, including straddling resources. This has not been done.<sup>xxviii</sup>

Furthermore, although the Scientific Committee was requested to undertake these stock assessments by 2015, this was not done either. Therefore the industry is fishing on stocks without stock assessments, with minimal information. The SPRFMO Scientific committee noted the scarce data that was available for stock assessment. Biomass indices in the SPRFMO area are almost entirely restricted to CPUE low information modeling and thus subject to large variables in outcome.<sup>xxix</sup> New Zealand described the stock assessment methods as "low-information" stock assessment methods.

In conclusion, it cannot be said that "the fisheries [sic] high degree of certainty to be within limits of national and international requirements for all ETP elements. The reviewers completely ignored international requirements in their analysis.

The Determination rightly notes that trawling damages vulnerable deep-sea coral communities which have low productivity and long recovery periods, (page 70) and that trawling creates a substantial sediment plume which disperses slowly, over large distances, smothering individuals and preventing juveniles from settling. However the Determination then proceeds to minimise the effects, claiming that because there is some coral on UTFs (underwater

	<p>topographical features, which “supports a conclusion that coral will remain well established on fished UTFs, although not at the density prior to trawling.” (page 82). This kind of unscientific and unquantified statement is not befitting a MSC certifier.</p> <p>Similarly, the Determination discussed the <i>Tangaroa</i> survey on page 83-84. The conclusion cited is that the study</p> <p>“While not fully analysed, this study clearly shows from the distribution of the various taxa, the continued existence of a variety of trawl-sensitive benthic biota (including VME indicator taxa) on seamounts that have documented levels of fishing from light (&lt;200 tows) to heavy (&gt;2000 tows). This information demonstrates that:</p> <ul style="list-style-type: none"> <li>(i) coral and fishing can co-exist on UTFs, even when fishing is considered to have been heavy; and,</li> <li>(ii) the distributions of coral indicator taxa do not appear to be altered by substantially different levels of fishing effort. “</li> </ul> <p>Again, this demonstrates clear bias. This is the only conclusion from the <i>Tangaroa</i> cruise. It is farcical. Of course the corals on the seamount summits, where the bulk of the fishing will occur, or on the very edge of the top of the seamount, will be different from those on the sides. Of the top of the seamount has its own species, and all the fishing is on the top of the seamount, then those seamount top species will be severely impacted, possibly to the point of not being able to recover. Other species, who live mostly on the sides, may be unaffected, if they are not affected by plume, so while the seamount will still have some corals and other VME indicators, some species will may be eradicated.</p> <p>A similar spurious argument made by the Determination is that only a small portion of the ocean is fishable: e.g. page 82: “The vast majority of the SPRFMO Convention Area (&gt;98%) is not fishable, being deeper than 2,000m (Table 3.1.1.1. Williams et al., 2011). Of the 1.1% of the SPRFMO Convention Area that is shallower than 2,000 m, about 0.5% is deeper than 1,500 m and thus deeper than orange roughy fisheries normally operate, has never been fished and is not within any footprint declared to SPFRMO. This means that &gt;99% of the SPRFMO Convention Area is not within any bottom fishing footprint declared to SPRFMO and is closed to bottom trawling.”</p> <p>What matters is what proportion of the 1% is trawled. There are species that have their distributions restricted to that small area, and if a significant percentage of that small area is impacted, then those species may suffer significant adverse impacts. In addition, these</p>
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distinct, if relatively small, areas are isolated from each other, rather like islands surrounded by inhospitable deep sea. If bottom trawling removes a significant percentage e.g 50% of the population of one of these species, they can be pushed to the brink of an Allee effect, where the population is not large enough to sustain itself. That is likely because the larvae for maintaining the population are being produced locally, with only a small percentage coming from another seamount.

Yet another spurious argument made relates to protected areas on page 87. A lengthy list of marine reserves is listed, and the Determination states that “All of these measures contribute to protect the marine environment generally and to mitigate and [sic] adverse effects from bottom trawling.” (page 88). Yet the vast majority of marine reserves listed are irrelevant to bottom trawling. How can it possibly be said that “all” of the measures contribute to mitigate adverse effects from bottom trawling? A similar misleading statement on page 88 is that “the area of the high seas seabed that surrounds New Zealand is largely closed to bottom trawling.” In fact the bottom trawling measure defines a footprint, which is subject to being expanded under paragraphs 16-21 of CMM 4.03. Exactly this was done under [CMM 4.14](#) (2016) which granted an application by the New Zealand deep water fishing industry for exploratory toothfish fishing.

This error is perpetuated on page 91, where the Determination states that “From the selected CMM paragraphs, it is clear that bottom fishing can only be conducted by members or CNCPs in areas defined to the Commission as a member or CNCP bottom fishing footprint areas based on fishing activity between the years 2002 and 2006 and that also have submitted an acceptable Bottom Fishing Impact Assessment (BFIA). To date only Australia and New Zealand have both declared footprint and accepted BFIA’s. Thus, the vast majority of the SPRFMO Convention Area is currently closed to bottom fishing.” CMM 4.14 alone shows this is incorrect, and was incorrect at the time of the Determination.

The analysis of the SPRFMO management framework is either factually wrong or highly misleading. On page 92 the Determination states that “it is clear that SPRFMO, its members and CNCPs have tried to set up a management framework that fully addresses the UNGA resolutions...”

Whether SPRFMO tried to do so, it did not: the CMM 2.03 (now 4.03) states at paragraph 8(h) that a Member or CNCP may exclude part of its bottom fishing footprint from the application of sub-paragraph (g) by dividing its footprint into areas open to bottom

	<p>fishing and areas to which sub-paragraph (g) would apply.” This is an exception built in to cater to New Zealand’s own non-complying implementation which allows fishing free from the strictures of paragraph (g).</p> <p>Paragraph (g), which is excluded from the quotation on paragraph 89 of the Determination, reads:  “(g) require vessels flying their flag to cease bottom fishing activities within five (5) nautical miles of any site in the Convention Area where evidence of a VME is encountered above threshold levels established under sub-paragraph (f) in the course of fishing operations, and to report the encounter to the Secretariat of the Commission in accordance with the guidelines at Annex 1, so that appropriate action can be taken in respect of the relevant site;”</p> <p>In other words, New Zealand is excluded from the application of the move-on rule laid down in UNGA resolution 61/105 (2009) paragraph 83(d): “To require members of the regional fisheries management organizations or arrangements to require vessels flying their flag to cease bottom fishing activities in areas where, in the course of fishing operations, vulnerable marine ecosystems are encountered, and to report the encounter so that appropriate measures can be adopted in respect of the relevant site; “</p> <p>In addition, the statement that “the vast majority of the SPRFMO Convention Area is currently closed to bottom fishing” is meaningless. The Determination could equally well have stated that the vast majority of the entire world’s ocean is closed to bottom fishing. The issue is simply the damage that is being caused by the fishing in the area being fished. The requirement of UNGA resolution 61/105, and subsequent resolutions 64/72 and 66/68, is to prevent significant adverse impacts on vulnerable marine ecosystems. Such statements read as advocacy for the applicant, rather than dispassionate and objective evaluation.</p> <p>The required outcome for (b) for 60 is that the CAB must find that “known direct effects are unlikely to create unacceptable impacts to ETP species.” In fact, they are certain to.</p> <p>The reviewers canvass some of the risks of harm to ETP coral species, but go on to state that “the vast majority of the SPRFMO Convention Area (&gt;98%) is not fishable, being deeper than 2,000 m”. What possible relevance has that statement to the effects that trawling has on the ETP coral that it impacts? It has no more relevance than stating that the bottom trawlers do not target the moon and therefore moon landscapes are not affected. The issue is where the bottom trawlers are fishing, not where they are not fishing. The issue at hand is the serious or irreversible harm that ETP species suffer from bottom trawling. Such frankly ludicrous statements simply demonstrate bias by the reviewers. The</p>
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reviewers continue to argue that “). Of the 1.1% of the SPRFMO Convention Area that is shallower than 2,000 m, about 0.5% is deeper than 1,500 m and thus deeper than orange roughy fisheries normally operate, has never been fished and is not within any footprint declared to SPFRMO. This means that >99% of the SPRFMO Convention Area is either outside of the combined Australian and NZ footprint and therefore formally closed to bottom fishing by the binding bottom fishing CMM implemented by SPRFMO, or effectively inaccessible to bottom fishing due to depth.” (Page 162.) Again, this is utterly irrelevant. The reviewers do allow that “the trawl fishery does expand to new areas (albeit at a very slow and continually reduced rate.)” (page 162) Obviously, expanding to new areas puts new areas of coral at risk.

Nevertheless, the review team concluded for the NWCR and ESCR that it cannot be concluded that “Therefore it cannot be said, for NWCR and ESCR, that direct effects of orange roughy fishing are highly unlikely to create unacceptable impacts to ETP species. MSC requires for the SG80 to be met, that “known direct effects of the fishery are highly unlikely [sic] to hinder recovery or rebuilding of ETP species/stocks.”

However, firstly, this conclusion is equally applicable to the other stocks, and secondly, there is no discussion of whether the “Known direct effects are unlikely to create unacceptable impacts to ETP species.” (to reach the 60 threshold). The reviewers simply did not turn their minds to it. Given their findings about the effects of fishing on UTFs, including sediment plumes, they should have not even reached 60.

On page 166, the CAB concluded that “Overall, policy frameworks and their implementation through a series of measures explicitly designed to manage the impact of fisheries on ETP species comprise a strategy in place for managing the fishery’s impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.”

Here again, the CAB reaches a conclusion which is not based on the required premises: there is no discussion before that conclusion of international requirements. There is no critical discussion of impacts on ETP species, and no dispassionate analysis. There is merely a recital of applicable legislation. There is also the extraordinary statement that “Cold water corals are fully protected under the Wildlife Act 1953”. Taken at face value, that statement implies that no cold water corals are impacted at all. Yet we know that is not true.

On the next page, the CAB states that:

“Regarding protected corals, there is an objective basis for confidence that BPAs as a strategy to limit fisheries interactions with these habitats [sic] will work, as effectively enforced closed areas to trawling as a means of protecting sensitive habitat is widely known to be an effective strategy. The practice of using the same tow paths on previously fished parts of UTFs reduces the scale of the damage from towing. Maintenance of this practice will keep the fishery impacts within current acceptable [sic] bounds.”

	<p>The statement that “effectively enforced closed areas to trawling as a means of protecting sensitive habitat is widely known to be an effective strategy” would only be accurate if other trawling did not impact sensitive habitat. But we know that it does. And the statement that “The practice of using the same tow paths on previously fished parts of UTFs reduces the scale of the damage from towing. Maintenance of this practice will keep the fishery impacts within current acceptable [sic] bounds” is obviously false as trawls are not always kept to the same tow paths: the CAB notes on page 82 that “the fishery has moved into new areas each year”, and that “However, UTFs considered to be heavily fished still contain diverse assemblages of corals and other epibenthic fauna”.</p> <p>The New Zealand government has said that it not actually feasible for vessels to accurately trawl exactly the same track as trawled previously, notwithstanding the substantial improvements in navigational equipment over the past decade. New Zealand cited an analysis conducted by O’Driscoll &amp; Clark (2005)<sup>xxxii</sup> which shows that vessels do not repeat their trawl tracks when fishing seamount features typically targeted in the deep-water trawl fisheries, and that although there are some directional preferences on certain seamounts related to the topography of the seamount concerned, in other instances vessels may conduct radial trawls on seamounts from almost any direction.<sup>xxxiii</sup> Thus even on heavily trawled seamounts, areas of the seamount which have not been previously fished may still be vulnerable to the impact of continued bottom fishing. New Zealand also reported that most of the bottom trawling over the past several years has taken place in the heavily trawled blocks (where no restrictions are in place) given industry reluctance to operate in areas where a move-on rule is in place, but that within the heavily trawled blocks there were reports that new, previously unfished, features were being fished.<sup>xxxiii</sup></p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i> The CAB made mistakes as detailed above. It completely failed to analyse the international requirements. The CAB failed to assess the threshold of 60 and assumed it applied.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i> The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i> No reasonable CAB could have reached this decision. The errors are material as they go to the heart of sustainability. Significant damage is caused to vulnerable marine ecosystems by bottom trawling.</p>

MRAG Response: We have addressed many of the concerns raised in this objection in response to previous objections (WWF procedural error #1 and #2, and alleged conditions and scoring errors pertaining to these performance indicators, and therefore will not be repeated here. Particularly relevant is the lengthy response pertaining to the definition of the habitat elements under assessment in relation to the scale of the fishery within the UoA areas.

Specifically to the point about endemism of species composition on UTFs and the ability of coral species to recruit over large spatial scales, this information was used by the assessment team in scoring the indicators in the ETP component, and this is precisely the information that led to the failure of the fishery to achieve an 80 score on 2.3.1 and 2.3.3, because we took a precautionary stance and assessed potential impact within the UoA areas rather than over the full range of the ETP coral species in question.

As argued numerous times previously in this document, the decisions taken by the assessment team in light of the MSC requirements and the evidence provided are in fact reasonable in the sense that any reasonable CAB would come to similar conclusions.

<i>Performance Indicator</i>	<p>PI 2.3.3 <i>Relevant information is collected to support the management of the fishery impacts on ETP species, including: - information for the development of the management strategy;- information to assess the effectiveness of the management strategy; and –information to determine the outcome status of ETP species.</i>  <i>Score: 80 – ORH7A; 75 – ESCR, NWCR</i>  <i>Should be: below 60</i></p>
<i>Reason</i>	<p>For a score of 60, it must be shown that “Information is sufficient to qualitatively estimate the fishery related mortality of ETP species.”, that “information is adequate to broadly understand the impact of the fishery on ETP species.” And most importantly, that “Information is adequate to support measures to manage the impacts on ETP species”</p> <p>The latter test is clearly not satisfied. The explanation on page 170 goes nowhere near to satisfying this test. Information adequate to support measures to manage impacts would include actual video surveys of the intended trawl tracks and samples taken. Instead, the CAB cites observers, VMS, vague ‘research surveys and other research projects’. None of these suffice.</p>
<i>Rationale</i>	<p><i>a. The CAB made a mistake as to a material fact.</i>  The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i>  The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i>  No reasonable CAB could have reached this decision.  The errors are material as they go to the heart of sustainability.</p>

	Significant damage is caused to vulnerable marine ecosystems by bottom trawling.
<p>MRAG Response: Our rationale for PI 2.3.3, scoring issue c is as follows: The strategic framework for managing protected species interactions with deepwater fisheries is described under PI 2.3.1.</p> <p>When impacts of fishing are such that they are causing an adverse effect on the Marine Environment (Fisheries Act s2, s8), measures are to be taken pursuant to the Conservation Act 1987 and the Director-General of where the Department of Conservation will implement measures, including:</p> <ul style="list-style-type: none"> <li>• research relating to those effects on protected species:</li> <li>• research on measures to mitigate the adverse effects of commercial fishing on protected species:</li> <li>• the development of population management plans under the Wildlife Act 1953 and the Marine Mammals Protection Act 1978.</li> </ul> <p>Information collected through observers, vessel monitoring systems, research surveys, and other research projects, such as analyses in MPI (2015) making use of existing datasets to understand fishery interactions with protected species or sensitive habitats is sufficient to measure trends and support the above-described strategy for managing impacts on ETP species. In addition, regarding protected coral species, regular monitoring and reporting of the ORH trawl footprint in relation to coral habitat provides trend data relevant for evaluation of the likely impact of the fishery on these protected species.</p> <p>Further, as stated earlier, the level of information available about habitats and benthic fauna composition and distribution in this fishery is better than that which is available for almost all other areas in the world. Notwithstanding this, we did in fact place a condition on this PI, the reasoning for which is explained in detail under the alleged conditions error #1 (pertaining to conditions 2 and 3), above.</p>	

<i>Performance Indicator</i>	<p>PI 2.4.1 <i>The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function</i></p> <p>Scores: 80-ORH7A 75 – ESCR, NWCR Should be: less than 60</p>
<i>Reason</i>	<p>The test for 60 is The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm. Under CB3.14.2.1 “Serious harm means gross change in habitat types or abundances, and disruption of the function of the habitats.</p> <p>Under CB 3.14.2.2, “Irreversibility means changes that are expected to take much longer to recover than the dynamics in un-fished situations would imply, some sort of regime change is implied from which recovery may not automatically occur.”</p> <p>These criteria are almost designed for the kind of benthic damage caused by bottom trawling. The science shows that bottom trawling</p>

means gross change in habitats and disruption of the function of the habitats, and the damage is irreversible: recovery would take thousands of years.

The reviewers acknowledge this: “Damage to some habitats in this fishery occurs with minimal trawling and will be long lasting due to the nature of the key benthic organisms and the depth (e.g. biogenic habitat with vertical relief).” (page 172)

But they attempt to minimise this by stating that:

“Damage will, however, be restricted to areas trawled so that, the extent of any damage will be in proportion to the trawl footprint of the fishery.”

Of course the damage is restricted to the areas trawled. This is an example of bias and lack of objective analysis shown by the reviewers. The rest of the discussion on page 172 is of this ilk:

“Therefore, over the last 5 years, the maximum amount of structural damage to UTF habitats within the orange roughy distribution range that could be attributed to orange roughy fishing in the UoC areas is 13%, assuming 100% habitat destruction of habitat on the fished UTFs in the UoC areas. According to Black *et al.* (2013), there have been no studies investigating whether current trawling frequencies have had adverse effects on the structure and function of benthic communities, or on the productivity of the associated fisheries. In the orange roughy fishery on the Chatham Rise, which is prosecuted primarily in the 800–1200 m depth zone, there is evidence that fishing effort has shifted geographically over time in response to changes in catch rates on individual hills (MPI 2012). The fishery expands to new areas each year, but the rate of additional ‘new area’ subjected to trawling in each successive year has continued to decline throughout the time series (Black *et al.* 2013).” (page 172)

Other than implicitly acknowledging that trawlers do not stay within the existing trawled footprint, this analysis is more of the same “they don’t damage where they don’t fish” analysis. The other variant is repeated: that they only fish within the trawl tracks:

“Trawling tends to be restricted to specific areas, e.g., following specific trawl paths on UTFs, leaving substantial areas of many UTFs un-impacted. (NIWA 2015b). Thus, there is evidence that complete serious or irreversible habitat destruction even on the 12% of fished UTFs within the UoC areas in the orange roughy distribution area of the bioregion is highly unlikely.”

These twin arguments - “they don’t damage where they don’t fish” and “they only stay within the trawl tracks (but sometimes move outside them)” only serve to reinforce the obvious points: bottom trawling irreversibly damages habitat where they trawl.

The ultimate score of 90 is nothing short of absurd.

The conclusion is likewise absurd:

“Similar to UTF habitats, evidence from fishing patterns year over year that fished areas of slope habitat remain suitable for orange roughy fishing over time provides some evidence that slope habitat structure and function are not being seriously or irreversibly harmed by the fishery. (PI score of 90).” (page 173)

This argument hides so many premises that it is again absurd. It assumes that the corals damaged by bottom trawling are essential habitat for orange roughy. Yet given the argument that bottom trawling targets the same trawl tracks virtually each time, the

	obvious conclusion must be that the orange roughy aggregations are present despite the habitat destruction. It only remains to be pointed out that “habitat structure” is not only the habitat of the target species.
<i>Rationale</i>	<p><i>a. The CAB made a mistake as to a material fact.</i> The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i> The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i> No reasonable CAB could have reached this decision. The errors are material as they go to the heart of sustainability. Significant damage is caused to vulnerable marine ecosystems by bottom trawling.</p>
<p><i>MRAG Response:</i> Once again, many of the assertions by the objectors made here have been addressed at length in previous responses to other objections about habitat impact, and will not be repeated here. However, we do wish to emphasize two points, the assessment team did properly consider the submissions of Greenpeace, DSCC and ECO but did not agree with them and that evaluating the spatial extent of the area trawled and its impact relative to the overall habitat is not a flawed approach—in fact it is the required approach as explained specifically under our response to WWF’s alleged procedural error #1.</p>	

<i>Performance Indicator</i>	<p>PI 2.4.2 <i>There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types.</i></p> <p>Score: 85 Should be: less than 60</p>
<i>Reason</i>	<p>The CAB accept that NZ does not have a fully implemented benthic impacts strategy. (page 175).</p> <p>The analysis then departs on an analysis of benthic protected areas. This is not a substitute for a strategy to prevent serious or irreversible harm. At most it is a strategy to preserve some areas from damage. That aside, there is no analysis of whether the benthic protected areas are representative, scientifically determined or, quite simply, areas the fishing industry did not want to fish.</p> <p>In fact, most of the BPAs include abyssal plain and most of the seamounts at fishable depths lie outside the BPAs.</p> <p>Over 50 percent of the area is within 200 nautical miles of the Kermadecs – an area that is too deep to trawl and includes the Kermadec Trench which reaches a maximum depth of 10,047 m. Only 27.7 percent of the BPAs fall within the depth range sampled by research trawls (down to 1950m) – the remaining 72.3 percent</p>

	<p>falls within areas in which depths are beyond those currently regarded as trawlable.<sup>xxxiv</sup> (page 7) “The benthic protection areas ...comprise 14.3% of the area of trawlable depth within the EEZ. However, they also coincide strongly with areas of low biodiversity...” (page 28) (Trawlable depth is defined as down to 1950m which is much deeper than typical orange roughy or oreo fisheries.)</p> <p>The reduction in trawling opportunities caused by the BPAs was estimated at less than 0.2% of deepwater trawl fishing. This is less than 100 tows out of 47,000 in 2004-05 fishing year.</p> <p>Very little of the area has or will ever be trawled – most of it is just too deep (84.5 percent of the closures are deeper than 1500m) or there are no fish in economic quantities to trawl. Areas of high biodiversity and high productivity (eg west Chatham Rise) is under-represented in the BPAs.</p> <p>The conclusion that the BPAs comprise a ‘partial strategy’ that warrants a score of 80 is completely unsupported.</p>
<i>Rationale</i>	<p><i>a. The CAB made a mistake as to a material fact.</i> The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i> The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i> No reasonable CAB could have reached this decision. The errors are material as they go to the heart of sustainability. Significant damage is caused to vulnerable marine ecosystems by bottom trawling.</p>
<p><i>MRAG Response:</i> This objection repeats similar objections previously in this document and our responses to those fully cover our response here and will not be repeated.</p>	

<i>Performance Indicator</i>	<p>PI 2.5.1 <i>The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function</i> Score: 100 Should be: below 60</p>
<i>Reason</i>	<p>For a score of 60, the CAB would have to find that “The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.”</p> <p>CB 3.17.3 explains that “The team should note that “key” ecosystem elements are the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics, and are considered relative to the scale and intensity of the fishery. They are features most crucial to</p>

	<p>maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity.</p> <p>The CAB misinterpreted this to mean ecosystem services related to orange roughy. Clearly the benthic structures provide crucial nature and dynamics.</p>
<i>Rationale</i>	<p><i>a. The CAB made a mistake as to a material fact.</i> The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i> The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i> No reasonable CAB could have reached this decision. The errors are material as they go to the heart of sustainability. Significant damage is caused to vulnerable marine ecosystems by bottom trawling.</p>
<p>MRAG Response: This objection repeats similar objections previously in this document and our responses to those fully cover our response here and will not be repeated.</p>	

<i>Performance Indicator</i>	<p><i>PI 2.5.2 There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function.</i></p> <p>Score: 90 Should be: less than 60</p>
<i>Reason</i>	<p>To reach a score of 60, the CAB must find that “The measures take into account the potential impacts of the fishery on key elements of the ecosystem.” Yet the CAB found that “and potentially limited benthic impacts (based on the trawl foot-prints) indicate a limited ecosystem impact”. Any dispassionate observer must ask: what does “potentially” limited benthic impacts mean? And obviously the CAB are predicating these ‘limited’ impacts entirely on the “trawl foot-prints”. This despite the evidence that fishing takes place outside existing trawl tracks. The CAB go on to state that (183) “There is information on trawl footprint, and the impact of trawling and the slow recovery for some UTF habitats (e.g. reef-building stony coral habitat).”</p> <p>If the test truly is that there is (some) information about (a) the trawl footprint and (b) the impact of trawling and (c) the slow recovery then this PI is utterly meaningless.</p> <p>But that is not the test. CAB must find that that “The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ ecosystems).” (page 185)</p>
	<p><i>a. The CAB made a mistake as to a material fact.</i></p>

	<p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability.</p> <p>Significant damage is caused to vulnerable marine ecosystems by bottom trawling.</p>
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MRAG Response: This objection repeats similar objections previously in this document and our responses to them fully cover our response here and will not be repeated.

However, one only has to read the language of the scoring issues for this PI to see that the assessment team has addressed them exactly as required and supported our determinations with the necessary evidence. In specific response to this objection we refer back to our rationales for this PI within the assessment report.

<p><i>Performance Indicator</i></p>	<p><i>PI 2.5.2 There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function.</i></p> <p>Score: 90</p> <p>Should be: less than 60</p>
<p><i>Reason</i></p>	<p>To reach a score of 60, the CAB must find that “The measures take into account the potential impacts of the fishery on key elements of the ecosystem.” Yet the CAB found that “and potentially limited benthic impacts (based on the trawl foot-prints) indicate a limited ecosystem impact”. Any dispassionate observer must ask: what does “potentially” limited benthic impacts mean? And obviously the CAB are predicating these ‘limited’ impacts entirely on the “trawl foot-prints”. This despite the evidence that fishing takes place outside existing trawl tracks. The CAB go on to state that (183) “There is information on trawl footprint, and the impact of trawling and the slow recovery for some UTF habitats (e.g. reef-building stony coral habitat).”</p> <p>If the test truly is that there is (some) information about (a) the trawl footprint and (b) the impact of trawling and (c) the slow recovery then this PI is utterly meaningless.</p> <p>But that is not the test. CAB must find that that “The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ ecosystems).” (page 185)</p>
	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the</i></p>

	<p><i>assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability.</p> <p>Significant damage is caused to vulnerable marine ecosystems by bottom trawling.</p>
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MRAG Response: This objection repeats similar objections previously in this document and our responses to those fully cover our response here and will not be repeated.

However, one only has to read the language of the scoring issues for this PI to see that the assessment team has addressed them exactly as required and supported our determinations with the necessary evidence. In specific response to this objection we refer back to our rationales for this PI within the assessment report.

<i>Performance Indicator</i>	<p>PI 2.5.1 <i>The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function</i></p> <p><i>Score: 100</i></p> <p><i>Should be: below 60</i></p>
<i>Reason</i>	<p>For a score of 60, the CAB would have to find that “The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.”</p> <p>CB 3.17.3 explains that “The team should note that “key” ecosystem elements are the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics, and are considered relative to the scale and intensity of the fishery. They are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity.</p> <p>The CAB misinterpreted this to mean ecosystem services related to orange roughy. Clearly the benthic structures provide crucial nature and dynamics. The CAB misunderstood this PI.</p>
<i>Rationale</i>	<p><i>a. The CAB made a mistake as to a material fact.</i></p> <p>The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i></p> <p>The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.</p> <p>The errors are material as they go to the heart of sustainability.</p>

	Significant damage is caused to vulnerable marine ecosystems by bottom trawling.
MRAG Response: This objection repeats similar objections previously in this document and our responses to those fully cover our response here and will not be repeated.	

<i>Performance Indicator</i>	<p><i>PI 3.1.1 The management system exists within an appropriate and effective legal and/or customary framework which ensures that it:</i></p> <ul style="list-style-type: none"> <li>- <i>Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2 and</i></li> <li>- <i>observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</i></li> <li>- <i>Incorporates an appropriate dispute resolution framework.</i></li> </ul> <p><i>Score: 100</i> <i>Should be: less than 60</i></p>
<i>Reason</i>	<p>For a score of 60, MSC requires that “There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.”</p> <p>Recent events show that this is not the case. The complete lack of critical faculty is clear in that enthusiastically endorses New Zealand’s management regime. Yet in May, it surfaced that the number of fish caught in New Zealand waters has been under-reported for six decades, with the real catch being 2.7 times official figures. Since the Quota Management System (QMS) was introduced in 1986, the total catch is conservatively estimated to be 2.1 times that reported to the FAO; unreported commercial catch and discards account for the vast majority of the discrepancy; and Only an estimated 42.5 percent of industrial catch by New Zealand flagged vessels was reported. The QMS, despite its being lauded by the Determination, actually undermines sustainable fisheries management by inadvertently incentivising misreporting and dumping. The paper, G. Simmons et al, Reconstruction of marine fisheries catches for New Zealand (1950-2010), 2016, is found at <a href="http://www.seaaroundus.org/doc/PageContent/OtherWPContent/Simmons+et+al+2016+-+NZ+Catch+Reconstruction+-+May+11.pdf">http://www.seaaroundus.org/doc/PageContent/OtherWPContent/Simmons+et+al+2016+-+NZ+Catch+Reconstruction+-+May+11.pdf</a>. The paper includes details of under-reporting, dumping of fish and misreporting of orange roughy. Under-reporting of catch up to 40% is reported. The report found that</p> <p>“Our findings show that the FAO data (14 million t) understate New Zealand catches in all years from 1950 to 2010, largely due to missing data. There are also large discrepancies between the FAO data and our reconstructed national data (17.7 million t). To the reconstructed national data is added invisible commercial landings (5.7 million t), unreported dumped commercial catch (14.3 million t),</p>

and recreational and customary catches (512,000 t). For the years 1950 to 2010, the reconstructed total marine catch of New Zealand (by New Zealand and foreign flagged vessels) is estimated to be 38.1 million t. This indicates that actual catch was 2.7 times the 14 million t reported to the FAO on behalf of New Zealand for the same time period. The extended reconstructed estimate for 1950-2013 is 40 million t, comprised of 19 million t nationally reported, 5.8 million t of invisible landings, 14.7 million t of unreported dumped commercial catch, and 549,000 t of customary and recreational catches.” (page 43).

An internal 2013 Ministry of Primary Industries (MPI) memorandum cited by the researchers (page 47) stated that ““It is more than sustainability. It is more than the fact that we are relying on misleading and incorrect data to sustain our fisheries. The most pressing reason for urgent action is that we have compelling visual evidence of serious offending recorded on a media that could become available (for whatever reason) to outside persons and organizations. Some of these people and organizations could have strong vested interests in this information and make this material quickly available to the public via internet related media i.e. 'you-tube' etc.

The resulting damage that could be caused not just to MPI but to the New Zealand fishing industry and economy as a whole could be extensive. The sight of large perfectly good fish being systematically discarded in such large quantities could have a huge negative effect, as it could easily stir up an emotive backlash from not only the New Zealand public, but from international quarters as well. These images could quickly negate the ‘green sustainable’ image that we as a country portray. **This combined with the fact that we have known about these dumpings / discarding issues for many years, and would appear to have done little to combat it, would be very difficult to explain and be unpleasant at best.**”

This objective information can be contrasted with the uncritical and frankly sycophantic nature of the determination e.g. “MPI verification through auditing and reconciliation analysis across multiple sources ensures all catches are reported and documented correctly.” (page 108) and “The deepwater fishing industry in New Zealand works closely with government to ensure compliance with all agreed management measures.” The Determination argues at page 40 at 3.4.1 that “deemed values prevent an incentive for dumping” and “the penalties for discarding QMS species without authorisation are severe, further reducing the incentives to discard. They state that “there was a notable decrease in total non-commercial bycatch during 2010/11 [sic] and 2011-12 (MPI & DWG, 2013) as a result of a decrease in fishing effort and decreases in catch limits.” The MPI memorandum and UBC research reveal such statements to be mere cheerleading for the DWG, rather than a dispassionate analysis. The failure to understand the separate nature of the national and international regimes is revealed in the completely incorrect

	<p>statement in 3.5.9 on page 109 that “The orange roughy UoAs fall under single jurisdiction management.” The paragraph goes on to say that some of the stocks are under SPRFMO management – obviously not under single jurisdictional management.</p> <p>Paragraph 3.5.4 includes an incorrect statement. It states that “The Fisheries Act 1996 requires a precautionary approach.” In support of this it cites the s. 10 information principles, which include that “decision makers should consider any uncertainty in the information available in any case, and “decision makers should be cautious when information is uncertain, unreliable or inadequate,” and “the absence of, or any uncertainty in, any information any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of this Act.” But nowhere does the Act state that it requires a precautionary approach, and nowhere does it state that lack of full scientific evidence shall not be used as reason for postponing cost effective measures to prevent environmental degradation. The purpose of the Fisheries Act is stated in s 8(1) to be “to provide for the utilisation of fisheries resources while ensuring sustainability”. Worse, the words “should” is not directive. Rio Principle 15 provides that lack of full scientific evidence “shall” not be used as a reason for postponing etc.</p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i> The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i> The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i> No reasonable CAB could have reached this decision. The errors are material as management goes to the heart of sustainability. Without good and effective management, the fishery will not be sustainable.</p>
<p>MRAG Response: The assessment team notes that the IA requested that DSCC identify any documentation that postdates the PCDR, as such documents are not admissible. This request and the DSCC response come at the end of the DSCC submission.</p> <p>The assessment team notes that the key document pertaining to PI 3.1.1 is Simmons <i>et al.</i> 2016, was released in May 2016. This post-dates the PCDR, released 26 January 2016, by several months, and the team submits that it is not admissible. The assessment team learned of this document shortly after it came out, and determined that we would most appropriately evaluate the impacts of this report in surveillance. The memo quoted from the Simmons <i>et al.</i> paper was not available to the team until the release of the Simmons report. The DSCC, represented by ECO at the site visit and subsequently in correspondence with the Team Leader, had ample opportunity to provide the memo to the assessment team. No other assessment team for certified New Zealand fisheries found this memo; therefore not locating this confidential memo did not result from lack of due diligence by the MRAG assessment team. As with the Simmons report, the availability of the memo postdated the PCDR and the assessment team submits it is not admissible. We propose to assess the impacts of this memo</p>	

in surveillance. The DSCC noted that draft versions of the Simmons *et al.* report came out in March 2015. This was before the 30-day Additional Information Gathering that started 5 May 2015. The objectors had the opportunity to submit the draft report but did not do so. We further note that draft reports, typically subject to change, are not often used in MSC assessments, and the MRAG Assessment Team used otherwise used only final reports in this assessment.

The assessment team acknowledges an imprecise statement concerning a single management jurisdiction. This is easily corrected. The team notes that it dealt extensively with SPRFMO and its management requirements in Section 3.3.1, 3.4.4, 3.4.5, 3.5.9, plus in the scoring tables, clearly indicating our awareness of the organization.

The assessment team notes that the precautionary approach is not a factor for evaluation in PI 3.1.1, so the DSCC comments do not apply. However the team notes that CB4.4.2 (PI 3.1.3) states “The team shall interpret the precautionary approach for the purposes of scoring this PI to mean being cautious when information is uncertain, unreliable or inadequate and that the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.” And that CB4.8.2 (PI 3.2.2) states “The team shall interpret that at SG80 and SG100 the precautionary approach in this PI to mean that decision-making processes use caution when information is uncertain, unreliable or inadequate.” It is clear that the Fishery Act 1996 Section 10 meets these requirements.

Conclusions:

- a) The Assessment Team has demonstrated that it did not make a mistake in material fact. The Simmons *et al.* report and the memo quoted in the report are not admissible. The team was well aware of the SPROFMO requirements and dealt with them comprehensively. The MSC definitions of precautionary approach were understood and followed by the assessment team.
- b) DSCC did not specify which material it put forward that the Assessment Team did not consider. The Assessment Team responded to DSCC *et al.* in great detail in the Final Report, and demonstrated conformance with the MSC requirements.
- c) Any reasonable CAB would follow the MSC requirements and would have reached similar conclusions concerning inadmissibility of post-PCDR material and the use of the precautionary approach.

In addition, the objectors draw attention to the fact that while it is stated that meetings commenced on 27 July 2014, if it had started the assessment after 1 April 2015, version 2.0 would have applied. That is significant as the older version 1.3 does not, as version 2.0 does, have a dedicated scoring element for VMEs: criteria that are adapted from the FAO International Guidelines for the Management of Deep-sea Fisheries. Habitat impact thresholds are explicit in v 2.0.

So where an eight month delay would have seen a more precautionary standard be adopted, the CAB chose instead to proceed with the older version. The Adjudicator should take version 2.0 into account and take a precautionary view accordingly. We echo the comments of Grieve et al (2014) in recommending that the MSC emphasises that certification bodies need to “take great care to adopt a precautionary approach when certifying deep-water habitat.” As the authors observed, “[t]he deep sea may be much more susceptible to fishing pressure due to a lack of priming events. It is often said that we understand the surface of the moon better than deep-water habitats and determining the functioning of this ecosystem before fishing impacts have taken their toll may not be possible.”<sup>xxxv</sup>

MRAG response: The MSC requirements are very clear about the use of version 1.3 and the use of version 2.0. The assessment team followed these requirements in continuing to use v1.3.

4.2 *Please state why you or your organisation believes that the failure to follow procedures by the conformity assessment body has significantly affected the result of the Determination such that the Determination should be altered?*

These multiple failures to follow procedures went to the heart of the evaluation of the fishery under Principles 1, 2 and 3. The complete lack of objectivity, bias and multiple failures to assess required and basic information significantly affected the result of the Determination.

MRAG response: The assessment team has demonstrated strict application of the MSC certification requirements. The team completely refutes the allegations of impartiality.

### Part Seven Objection Pursuant to Paragraph CD2.7.2.3

**In the following sections, for ease of identification, the MRAG Americas assessment team has appended specific responses to the objection text in shaded boxes.**

#### WWF Comments

None

#### DSCC Comments

<i>Information</i>	G. Simmons et al, Reconstruction of marine fisheries catches for New Zealand (1950-2010), 2016, and cited MPI report therein.
<i>Reason why information should reasonably have been known</i>	Due diligence by the assessment team would have uncovered this crucial information.
<i>Reason why information should</i>	The team had access to MPI officials; if they had asked the right questions, as did the paper authors, they would have received these

<i>reasonably have been made available</i>	answers.
<i>Reason why information could have made a material difference to the outcome of the assessment</i>	The statement that “we have known about these dumpings / discarding issues for many years, and would appear to have done little to combat it” shows that management is inadequate.  The paper reveals major shortcomings in New Zealand’s management regime, particularly with regard to discards and reporting.
MRAG Response: MRAG has demonstrated that this report postdates the PCDR and is therefore inadmissible in this objection. The assessment team will consider the report during the first surveillance. We have addressed the memo related to discards previously.	

<i>Information</i>	M. Gianni, O.G. Bos (2012). Protecting ecologically and biologically significant areas (EBSAs): Lessons learned from the implementation of UN resolutions to protect deep-sea biodiversity. Report number C061/12. IMARES - Institute for Marine Resources & Ecosystem Studies. Netherlands. 95pp.
<i>Reason why information should reasonably have been known</i>	Due diligence by the assessment team would have uncovered this paper.
<i>Reason why information should reasonably have been made available</i>	It is relevant information to VMEs.
<i>Reason why information could have made a material difference to the outcome of the assessment</i>	The Gianni paper shows the extent of damage from fishing to VMEs.

MRAG Response: This paper dates from 2012. It offers no further or different perspective or interpretation than other papers referenced in relation to the impact of bottom trawling on benthic habitats and corals. It contains an out of date discussion of the New Zealand orange roughy fishery that is not relevant to the current situation. If this paper were of the fundamental importance implied, then it is surprising that none of the objectors or other stakeholders brought it to the attention of the CAB or client during the Environmental Effects of Fishing risk assessment (Boyd, 2013), the MSC Pre-assessment, or this MSC Full Assessment, until this objection period. Information on VMEs is not relevant to fisheries under CR v1.3.

### IA Request for Clarification – DSCC

The Independent Adjudicator asked for clarification of several issues brought forward by DSCC. In the Section below, we have highlighted the IA question or request in ***bold italics***, presented the DSCC issue in normal font, and show the MRAG response in grey.

***Please can you verify whether there are references to information that post-dates the PCDR as this will not be admissible.***

The DSCC *et al* notice of objection referred to a paper, G. Simmons *et al.*, “Reconstruction of marine fisheries catches for New Zealand (1950- 2010)”, 2016 in page 45 ff. That paper was not referred to by the CAB.

One paper cited by DSCC *et al* on page 20. Levin L. A. *et al.*, Hydrothermal Vents and Methane Seeps: Rethinking the Sphere of Influence. 3 *Frontiers in Marine Science*. 19 May 2016. At <http://journal.frontiersin.org/article/10.3389/fmars.2016.00072/full>.

MRAG Response: The Independent Adjudicator asked for documents referenced by DSCC that post-dated the PCDR (January 2016). The paper by Simmons *et al.* 2016 became available in May 2016, far postdating the PCDR. The paper by Levin *et al.* 2016 also became available in May 2016, post-dating the PCDR. The MRAG assessment team contends that it should not be responsible for identifying draft reports, especially if no stakeholder found them important enough to bring to the attention of the assessment team. A draft of the Simmons *et al.* report was available during the Additional Information Gathering that started 5 May 2015, but the objectors did not bring it to the attention of the assessment team. The assessment team will consider these reports at the first surveillance.

***Part Four: there is nothing under this section. Please supply details of arguments and supporting evidence or confirm there is no intention to object under this heading.***

***Please identify:***

- a) the procedure(s) that you or your organisation believe were omitted or incorrectly followed by the conformity assessment body in the conduct of this assessment and the relationship of these matters to the MSC’s procedural rules, as set out in the MSC Scheme Requirements that were in force at the time of the assessment; and/or***
- b) any other irregularity in the fishery assessment process that you or your organisation believe made a material difference to the fairness of the assessment.***

There is an overlap between the objections in Part Six and Part Four. Part Four relates to (a) procedures and omitted or incorrectly followed by the CAB and (b) other irregularities in the assessment process, while Part Six details the relevant performance indicators. In the interests of avoiding duplication, our objections were listed in Part Six. Had the CAB followed MSC procedures, they would have scored the relevant PIs more closely to those suggested in our objection in Part Six, rather than the results in the assessment. To this extent, and to avoid duplication, we adopt the WWF objection in section 4, which is hereby incorporated by reference. In addition, we have added one more, which is referenced in Part Six.

MRAG Response: As DSCC incorporated the WWF objections under Part Four, and we answered there, we incorporate the responses to WWF as responses here. The additional point under Part Four is addressed here. We have provided response in Part Six to issues raised.

## **Additional Procedural Error: Apparent Bias and Predetermination**

The CAB consistently adopted an interpretation favourable to the clients, and ignored or misinterpreted relevant science. The DSCC *et al* objection detailed a number of instances where the assessment took a cheerleading approach rather than dispassionate analysis (e.g page 46). Other instances of bias appear in page 34, where it was shown that the issue is where the bottom trawlers are fishing, not where they are not fishing, and that arguments that the vast majority of the SPRFMO Convention Area (>98%) is not fishable, being deeper than 2,000 m are entirely beside the point.

Similarly, there are failures to analyse the international requirements (page 35 objection) followed by a finding that the fishery satisfies international requirements.

In the responses to objections, the CAB failed to objectively and dispassionately analyse the many objections and have an open mind, and instead refuted them, resulting in repeatedly coming to the drum-beat like conclusion at least 39 times that “No change in score resulted.” In only two places were scores changed (PI 2.1.2e finning and PI 2.3.2 ETP corals. But in the case of corals, the score was reduced from 100 to 80, but without further discussion in Volume 2 of why it met a score of 80 or why a score of below 60 was not given.)

The CAB should have been impartial (ISO Guide 65 clause 4.2(a) and (e). (e) requires that the CAB has a “documented structure which safeguards impartiality including provisions to ensure the impartiality of the certification body; (f) ensure that each decision on certification is taken by a person(s) different from those who carried out the evaluation, and (n) have formal rules and structures for the appointment and operation of any committees which are involved in the certification process; such committees shall be free from any commercial, financial and other pressures that might influence decisions.) The CAB should take (ISO Guide 65 4.3) “all steps necessary” to evaluate conformance with the relevant product standards according to the requirements of [sic] specific product certification system.

MRAG Response: The objector does not acknowledge or accept the MSC requirement to evaluate the requirements of MSC to assess the impacts of the fishery on a regional or bioregional basis (i.e., p 34 of the Objector NOO). The assessment team considered the information provided by Roux *et al.* (2015) pertaining to the distribution of UTFs across the orange roughy distribution range within the Kermadec Bioregion and NZ EEZ, as well as the number of fished UTFs within this subgroup, the number of fished UTFs within the geographic areas of the Units of Assessment, and the overlap between the orange roughy trawl footprint with UTF habitats at scales from the UoC area all the way up to the bioregional level. We also considered the information presented in Clark *et al.* (2015) pertaining to the observed and predicted distribution of the main coral groups found on these UTFs on the same scales (noting that the depth range and distribution of the UTF habitat element does not depend on the depth distribution of orange roughy, or any other fish species).

The objector claims that the assessment team did not address international requirements (i.e., p 35 of the Objector NOO). However, the dedicated substantial text to SPRFMO and its requirements, and noted in the assessment report “From the selected CMM paragraphs, it is clear that bottom fishing can only be conducted by members or CNCPs in areas defined to the Commission as a member or CNCP bottom fishing footprint areas based on fishing activity between the years 2002 and 2006 and that also have submitted an acceptable Bottom Fishing Impact Assessment (BFIA). To date only Australia and New Zealand have both declared footprint and accepted BFIA, the relevant footprint is included in each BFIA. Thus, the vast

majority of the SPRFMO Convention Area is currently closed to bottom fishing.” New Zealand is an active member of SPRFMO and has complied with its requirements.

The Objector references here the Simmons *et al.* report (i.e., p 46 of the Objector NOO). We have extensively dealt with the issue of this report. It post-dates the PCDR, and the assessment team contends that it should not be responsible for identifying draft reports, especially if no stakeholder found them important enough to bring to the attention of the assessment team, as the draft was available during the additional Information Gathering Period.

MRAG Americas has extensive mechanisms to ensure impartiality under the programs described by the objector and required by ISO 17065, and undergoes annual accreditation audits that cover impartiality. We refute the allegations that complying with MSC requirements to reach a conclusion with which the objector disagrees constitutes lack of impartiality. MRAG Americas stands by its conclusions as reasonable and justified.

**a) Please state why you or your organisation believes that the failure to follow procedures by the conformity assessment body has significantly affected the result of the Determination such that the Determination should be altered?**

The details on why these failures significantly altered the result of the Determination so that it should be altered are given in Part Six.

MRAG Response: As there is no further evidence of procedural errors presented here, we have no basis to address them. We have provided response in Part Six to issues raised.

**Part Five: The reasoning and rationale here is very brief. Please either supplement with argument and evidence (including references, page and paragraph numbers) or cross refer to relevant arguments/evidence cited elsewhere in the NOO. Details as to both why a) the conditions cannot be fulfilled and b) the setting of the conditions was arbitrary or unreasonable are required.**

#### **Condition 1: Condition 1.1.1b**

**By the end of the certification period, provide evidence that the ESCR stock is at or fluctuating around its target reference point. (page 120)**

It is unreasonable that a fishery which has been depleted by fishing would be certified as sustainable. Fishing should stop until sound stock assessments show the fishery is shown to be above scientifically derived target reference points. Such a condition means that a clearly overfished fishery below what are already unsound reference points would be certified.

The proposed condition, rather than being a condition to “result” in improved performance, (27.11.1.3) simply passively hopes, or assumes, that it will do so. It does nothing to achieve

that result. There is no measureable improvement or outcome expected each year, (27.11.1.4) and the only timeframe is the end of certification period.

The condition requires no steps or measures to be taken so MSC can ensure that this recovery happens. Nor are there requirements for submission of evidence that the management has followed scientific advice and the fishery has complied with this management, and there are no waypoints for evidence of recovery.

MRAG Response: Our response to the DSCC Part Five comment above addressed this issue. The stock status is well above PRI so well suited for a conditional pass under the MSC requirements. The form of the condition follows the narrative of the scoring issue not met at SG80. The condition cannot be prescriptive. The milestones require the client to provide evidence of rebuilding. The objector has provided no evidence that the condition cannot be met.

### **Condition 2: 2.3.1 SI b (page 220)**

**By the end of the certification period, the direct effects of ORH fishing must be highly unlikely to create unacceptable impacts to ETP coral species.**

This condition will allow damage to coral species to continue until the end of the certification period. It is unreasonable that a fishery damages ETP coral would be certified as sustainable. Fishing should stop until there are no significant adverse impacts on vulnerable marine ecosystems, as is required by the 2009 FAO Guidelines. As with condition 1, the proposed condition, rather than being a condition to “result” in improved performance, (27.11.1.3) simply passively hopes, or assumes, that it will do so. It does nothing to achieve that result. There is no measurable improvement or outcome expected each year, (27.11.1.4) and the only timeframe is the end of certification period. As was stated in WWF’s Notice of Objection (page 27), “Condition 2 does not specify milestones that set out measurable improvements in terms of a direct demonstration that the fishery implements requirements for the protection and rebuilding of ETP corals by reducing coral mortality,” and “CAB must formulate Condition 2 to specify “demonstration that requirements for protection and rebuilding are being achieved.” The condition is not even a band aid: it is a fig leaf. This condition amounts to closing one’s eyes and hoping that the damage is not unacceptable by the end of the certification period.

MRAG Response: As noted in our response on this point to WWF, even though we determined that it is indeed highly likely that requirements for protection of ETP coral species are being achieved, we decided, in the absence of more active management requirements pertaining to protected corals within the national legislation, to interpret “unacceptable impact” for this PI as it is defined in CB3.11.4.1. We judged this PI to meet the SG60 level, but not the SG80 for the two Chatham Rise UoAs, as explained in detail in the justifications for 2.3.1 in the assessment report, and thus raised the condition as quoted above, requiring that the SG80 level is met by the end of the certification period—i.e. that known direct effects of the fishery are highly unlikely to hinder recovery or rebuilding of ETP coral species. The MRAG assessment team pointed out that the issue of concern in the condition for coral in PI 2.3.1 deals with the inability to draw a conclusion of ‘highly likely’ given the analysis available at the time of the assessment: “*The higher overlap in NWCR and ESCR ( $\leq 30\%$ ) meets only the unlikely to create unacceptable impacts (SG60) level. It is not clear that sufficient analysis has occurred in the NWCR and ESCR areas to demonstrate that the fisheries are highly unlikely to have unacceptable impacts for deep sea corals, due to discrepancies between observed and predicted distribution of*

*protected corals and the overlap with the orange roughy trawl footprint in the three UoC areas.”* We have otherwise demonstrated that the status meets the conditional pass level. Therefore, continuation of the fishery is in line with the requirements of the MSC. The form of the condition follows the narrative of the scoring issue not met at SG80. The condition cannot be prescriptive.

**3.2.5b Condition 4 By the third annual surveillance the fisheryspecific [sic] management system must undergo occasional external review.**

There is no element of independence in this condition. “Occasional external review” is vague and unenforceable. There is no measurable improvement or outcomes (using quantitative metrics) expected each year; there is no specific timeframes over which the milestones and the whole condition must be met and there is no outcome and score that shall be achieved at any interim milestone. As such it is unreasonable.

MRAG Response: PI 3.2.5b requires “*The fishery-specific management system is subject to regular internal and occasional external review.*” The term independent is not part of the PI requirement, and the MSC provides examples of appropriate external review. The form of the condition follows the narrative of the scoring issue not met at SG80. The condition cannot be prescriptive. The milestones require the client to provide evidence of rebuilding. ‘Occasional external review’ is well defined by:

*CB4.11.1 Teams shall interpret “External review” at SG80 and 100 to mean external to the fisheries **specific** management system, but not necessarily international.*

*CB4.11.2 Teams should interpret “Occasional” and “Regular” relative to the intensity of the fishery.*

**Part Six:**

***In relation to certain PIs under challenge (in particular PI 1.2.3, 2.3.3, 2.5.1) I am concerned that there are factual assertions not backed up by references to specific evidence. Whilst I appreciate that the NOO covers a lot of ground, each head of objection, if accepted for consideration by me, must be determined and therefore the objectors need to put forward the relevant arguments and references in relation to each.***

**PI 1.2.3**

<i>Performance Indicator</i>	<i>PI 1.2.3 There is a robust and precautionary harvest strategy in place ORH3B NWCR 85 ORH3B ESCR 85 ORH7A 85 Should be: below 60 (page C156; Page 133)</i>
<i>Reason</i>	For a score of 60, the harvest strategy must be “likely to work based on prior experience or plausible argument.” Prior experience shows the opposite. As noted by the CAB, the harvest strategy is merely an agreement between industry and MPI. Therefore there can be no certainty that

	<p>the MPI will set catch limits for the three stocks using the agreed HCR. The statement that “the fisheries have had previous conservative management that has led to abundance increases” is both wrong (management has not been conservative) and misleading (the vast majority of stocks have crashed to well below MSY). The statement is also at contrast with what is stated lower (“the harvest strategy is an improvement on how management advice was provided in the past.” The heavy reliance on Cordue (2014) is misplaced.</p> <p><b>References and links:</b></p> <p>There are a range of issues that MRAG has not considered which means the indicator score should be changed and replaced with a much lower value. Full consideration of the relevant issues would mean the UOC would not meet even a 60 score.</p> <p>Peer reviewer 1 questioned whether the scoring could be justified.</p> <p>A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted: “Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge is [sic] decline but not consistently throughout the scoring of P2 scoring issues.”</p> <p>Only with observers on board is there sufficient information to assess by-catch rates. Reporting of non-quota management species and non-target fish species (eg corals) relies on reporting from observers.</p>
	<p>There is no guarantee the observer coverage will be 20% coverage. MPI priorities are wider than research priorities, and include enforcement and labour standards, and can priorities can change between and within years.</p> <p>The level of observer coverage is patchy in the deepwater trawl fishery (orange roughy, oreos and cardinal fish) with an average of 11% of tows observed in 2012-13. In the orange roughy target fishery 11.6% of tow were observed in 2012-13 and 13.1% in 2013-14 but observer vessel days were only half the level required for collection of representative biological information and samples (eg otoliths for ageing and length frequency) to manage the fishery and its impacts (MPI 2015a).</p> <p>There is currently no long-term planning for research and</p>

	<p>management. The 10 year research plan has been replaced with an annual research planning (MPI 2015b). The deepwater management plan term ends in June and it is unclear whether it will be replaced.</p> <p>The targets for orange roughy are arbitrary and not-precautionary: they are weaker than standards for hoki which is a much short-lived and higher productivity species. The MPI Harvest Strategy itself notes that “it is becoming increasingly difficult to justify stock targets less than 30-40% Bo (or, equivalently, removing more than 60-70% of the unfished biomass).” (Ministry of Fisheries, 2008).</p> <p>Concerns about the single species nature of MSY or many reference points have lead consideration of predator and prey relationships. These ecological relationships have been important consideration in CCAMLR’s approach to fisheries management. In CCAMLR target levels have been set at 50%Bo for predator species (e.g. toothfish) and 75%Bo for prey species (egg krill or icefish) (Constable et al., 2000).</p> <p>Smith et al., 2011 noted that retaining stocks at higher levels (eg 75%Bo) for low trophic level species had lower ecological impacts. They noted that “halving exploitation rates would result in much lower impacts on marine ecosystems while still achieving 80% of MSY”.</p> <p>Constable, A. J., de la Mare, W. K., Agnew, D. J., Everson, I., and Miller, D. 2000. Managing fisheries to conserve the Antarctic marine ecosystem: practical implementation of the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR). – ICES Journal of Marine Science, 57: 778–791.</p> <p>Ministry of Fisheries (2008) Harvest Strategy Standard for New Zealand fisheries. October 2008. 25p.</p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i> The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i> The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i> No reasonable CAB could have reached this decision. The errors are material as they go to the heart of sustainability.</p>
<p>MRAG Response: MRAG notes that Harvest Strategy is PI 1.2.1, not 1.2.3 (Information). Therefore, we have responded to Harvest Strategy, not Information. Our response to the</p>	

DSCC Part Five comment above also addressed this issue. DSCC has added additional concerns that we discuss here.

Peer reviewer 1 agreed with our scoring for PI 1.2.1. He had a comment that we addressed for PI 1.2.3 Information, which is not relevant to this comment by DSCC.

Peer reviewer 2 also agreed with our scoring of PI 1.2.1. He had comments that we addressed for P2, which is not relevant to this comment by DSCC.

Observers are an integral part of the harvest strategy, but only a part. We noted in the report that the harvest strategy relies on information from catch, surveys, and age compositions, and that the research plan includes data collection at the level expected given the MSE. The assessment team will monitor observer coverage and take appropriate action should the coverage not provide information sufficient to draw reasonable conclusions.

We have indicated in previous responses to DSCC that MPI has committed to maintaining the research plan.

DSCC questions the reference points chosen for orange roughy. We note that reference points are covered in PI 1.1.2, so the comments are not appropriate to the harvest strategy. However, we have demonstrated a high level of scientific rigor in the analyses and decisions used in selection of the reference points.

We agree that lower reference points for lower trophic level species make sense. But orange roughy is not LTL.

### PI 2.3.3

<i>Performance Indicator</i>	<p>PI 2.3.3 <i>Relevant information is collected to support the management of the fishery impacts on ETP species, including: - information for the development of the management strategy; - information to assess the effectiveness of the management strategy; and - information to determine the outcome status of ETP species.</i></p> <p>Score: 80 – ORH7A; 75 – ESCR, NWCR</p> <p>Should be: below 60</p>
<i>Reason</i>	<p>For a score of 60, it must be shown that “Information is sufficient to qualitatively estimate the fishery related mortality of ETP species.”, that “information is adequate to broadly understand the impact of the fishery on ETP species.” And most importantly, that “Information is adequate to support measures to manage the impacts on ETP species”</p> <p>The latter test is clearly not satisfied. The explanation on page 170 goes nowhere near to satisfying this test. Information adequate to support measures to manage impacts would include actual video surveys of the intended trawl tracks and samples taken. Instead, the CAB cites observers, VMS, vague ‘research surveys and other research projects’. None of these suffice. As was noted by WWF (page 38) there are no known studies specifically examining</p>

	<p>sediment mobilization by fishing gear in deep-sea fisheries and its effects...” FRvol1, p.158)</p> <p>As was noted by Consalvey et al (2006)“However, our knowledge of deep-sea coral fauna in the New Zealand region remains poor. Without adequate research to determine the long term vulnerability and Information Review For Protected Deep-Sea Coral Species In The New Zealand Region v biodiversity of deep-sea benthic communities, including deep-sea corals, and a better understanding of their ecology, good management practice will be hard to achieve.” More recently, Clark et al (2016) observed that “In the deep sea, however, the inherent restrictions on obtaining sufficient stock assessment or benthic habitat data (compared with nearshore shelf/slope fisheries) mean that management regimes typically operate at a low level of knowledge, and management action must occur in a highly precautionary manner”.</p> <p>The reasons cited in DSCC et al’s Notice of Objection for PI 2.3.1 apply here as well and are incorporated by reference mutatis mutandis.</p> <p>References and links</p> <p>There are a range of issues that MRAG have not considered. A key element in information collection is the presence of MPI scientific observers on vessels.</p> <p>As Peer Reviewer 2 noted:  “Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge is decline but not consistently throughout the scoring of P2 scoring issues.”</p> <p>The current status of the deepwater management plan is unclear, as is the commitment to deepwater research given the end of the Deepwater Research strategy (MPI 2015b).</p>
	<p>There is no population management plan for protected species and the provisions of the Wildlife Act and the Marine Mammals Protection Act have been found impossible to implement to limit the impact on ETP species.</p> <p>There is no strategy for most ETP species. The exceptions are the National Plan of Action on Sharks and Seabirds but these have yet to be fully implemented. There is no strategy for marine mammals capture or benthic species including corals.</p> <p>The BPA is not a strategy to protect corals rather it is a strategy to avoid protecting corals as they were establish in areas where little or no fishing was taking place and most was much deeper than trawling depths.’</p>

	<p>BirdLife International 2012. Thalassarche salvini. The IUCN Red List of Threatened Species. Version 2015.2. &lt;www.iucnredlist.org&gt;. Downloaded on 27 July 2015.</p> <p>Malcolm R. Clark, Franziska Althaus, Thomas A. Schlacher, Alan Williams, David A. Bowden, and Ashley A. Rowden, The impacts of deep-sea fisheries on benthic communities: a review. ICES Journal of Marine Science (2016), 73 (Supplement 1), i51 –i69. doi:10.1093/icesjms/fsv123</p> <p>Consalvey, M., MacKay, K. and Tracey, D. (2006) Information review for protected deep-sea coral species in the New Zealand region. NIWA Client Report: WLG2006-85. NIWA Project: DOC06307. November 2006. 58 p.</p> <p>Ministry of Primary Industry (2015a) Annual Review Report for Deepwater Fisheries for 2013/14. MPI Technical Paper No 2015/07. April 2015. 91p.</p> <p>Annual Review Report for Deepwater Fisheries for 2014/15. (2015b) MPI Technical Paper No: Prepared by the Ministry for Primary Industries. Draft November 2015.</p> <p>Ministry of Primary Industry (2013) National Plan of Action to reduce the incidental catch of seabird in New Zealand. 59p.</p>
<p><i>Rationale</i></p>	<p>a. The CAB made a mistake as to a material fact. The CAB made mistakes as detailed above.</p> <p>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder. The CAB did not properly consider the submissions of Greenpeace, DSCC and ECO.</p> <p>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it. No reasonable CAB could have reached this decision. The errors are material as they go to the heart of sustainability. Significant damage is caused to vulnerable marine ecosystems by bottom trawling.</p>
<p>MRAG Response: From the above, we understand the objector to take issue with the score of 80 awarded to the fishery on scoring issue C, pertaining to sufficiency of information to measure trends and support a full strategy to manage impacts on ETP species, particularly for corals. In addition, it seems like there is a portion of this specific objection that takes issue with scores given for Scoring Issue A where it is stated “<i>There is no strategy for most ETP species. The exceptions are the National Plan of Action on Sharks and Seabirds but these have yet to be fully implemented. There is no strategy for marine mammals capture or benthic species including corals.</i>”</p> <p>Relative to the first contention on information for measuring trends and supporting a strategy to manage impacts to ETP corals, as explained in the assessment report, the team determined that the amount of information available via habitat maps, species occurrence</p>	

data from fishery dependent and independent sources, and VMS tracks meets this requirement for sufficiency of information in scoring issue C. In fact, relative to most parts of the world, the amount of information available about the constitution of the sea floor within the NZ EEZ and bioregion as a whole and about the fleet behavior is exceptionally high.

Note, however, that while the team did consider the information available sufficient for monitoring and management purposes, we did not deem it sufficient for an 80 score on scoring issue B in the two Chatham Rise UoAs, for the reasons given in the report and as part of previous responses to stakeholder comments.

Regarding the second part of this objection—that there is no strategy for most ETP species—the objector does not provide specific details or information to justify this contention. Therefore we can only respond to this assertion by pointing the objector to our rationale in the assessment report for this PI, and other responses to previous stakeholder comments to justify how we have come to reasonable conclusions in these cases. There are also some 17 other New Zealand deep water fisheries for hoki, hake, ling and southern blue whiting that have been certified and some recertified with no current conditions, that attest to MRAG having reached a reasonable conclusion that could have been made by another CAB.

### PI 2.5.1

<i>Performance Indicator</i>	<p>PI 2.5.1 <i>The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function</i>  <i>Score: 100</i>  <i>Should be: below 60</i></p>
<i>Reason</i>	<p>For a score of 60, the CAB would have to find that “The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.”</p> <p>CB 3.17.3 explains that “The team should note that “key” ecosystem elements are the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics, and are considered relative to the scale and intensity of the fishery. They are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity.</p> <p>The CAB misinterpreted this to mean ecosystem services related to orange roughy. Clearly the benthic structures provide crucial nature and dynamics.</p> <p>The reasons in cited DSCC <i>et al's</i> Notice of Objection for PI 2.3.1 apply here as well and are incorporated by reference <i>mutatis mutandis</i>.</p> <p>The relevant grounds in WWF’s Notice of Objection are also include by reference, including:</p> <p><i>Procedural Error #2 – A complete historical perspective</i>  (Pages 11, 12)</p> <p><i>Procedural Concern #8 –Ecosystem services?</i>  (Pages 23, 24)</p> <p><i>Scoring Error #8 – Status of benthic ecosystem was not assessed</i></p>

	<p>(Pages 44-46)</p> <p>The following observation applies to all matters with respect to Principle 2. CB27.4.4.1 (page C106) Provides that the CAB shall verify that the fishery is conforming to Principle 3, Criterion A: A fishery shall not be conducted under a controversial unilateral exemption to an international agreement.</p> <p>This is exactly what is occurring with respect to fishing in waters under the management of SPRFMO. The New Zealand government secured an exemption to CMM 2.03 (now 4.03): rather than closing all areas where VMEs are known or likely to occur unless fisheries are assessed for their impacts and can be managed to prevent SAls on VMEs (as is called for in the UNGA resolutions), New Zealand has chosen to instead close only 'lightly fished' areas, and allow unrestricted fishing on 'heavily fished' areas with no move-on rule. The move-on rule is only applicable to 30% of the high seas areas where New Zealand vessels are currently permitted to bottom trawl fish. Bottom fishing in the 'heavily fished' blocks of the New Zealand footprint is not covered by the rule. Paragraph (h) of paragraph 8 reads that "(h) notwithstanding sub-paragraphs (d) and (g) above, a Member or a CNCP may exclude part of its bottom fishing footprint from the application of sub-paragraph (g) by dividing its footprint into areas open to bottom fishing, areas closed to bottom fishing and areas to which sub-paragraph (g) would apply. These exclusions must have the purpose of preventing significant adverse impacts to VMEs." This exception is (i) controversial:</p>
	<p>It has been criticized by DSCC and other NGOs; (ii) unilateral: it has arisen from the actions of New Zealand alone; it is (iii) an exemption from the rest of subparagraphs (d) and (g) of paragraph 8; and is an international agreement with a direct mandate for sustainable management of resources affected by the fishery.</p> <p>See Clark et al (2015): Deep sea fisheries were recognized as causing substantial ecological impacts in several areas of operation, and probably globally (Koslow et al., 2001; Hall-Spencer et al., 2002; Waller et al., 2007; Althaus et al., 2009; Clark and Rowden, 2009). Halpern et al. (2007) identified 'demersal, destructive fishing' (e.g. demersal trawl) as the most consistently high-scoring threat to oceanic deep-sea ecosystems. (i52) On seamounts that have been the target of fisheries for several decades in New Zealand and Australia, Williamset al. (2010) attempted to measure actual recovery rates of the fauna: they found no consistent and clear signal of recovery in the megabenthos 5–10 years after fishing had ceased, suggesting that any recovery is likely to be very prolonged. (i62) The clear message from these biological data is that the overwhelming majority of species that are commonly impacted grow very slowly and have very high longevity. These traits of slow growth and great age translate into estimates of recovery times that, for many communities, are likely to span centuries to millennia. Hence, very slow recovery is expected from any disturbance, not just by fishing but also other industries (e.g. mining of ferromanganese crusts from seamounts) that removes the</p>

	<p>attached fauna (Schlacher et al., 2014). Formation of new habitat could operate at geological time-scales (centuries or longer). (i64) This review has identified a number of studies demonstrating that direct and indirect fishing disturbances can severely impact deep-sea benthos by reducing diversity and abundance. (i64) Deep-sea benthic communities have the collective properties of high susceptibility and low recoverability, and hence it is unrealistic to expect them to recover from ongoing fishing impacts, or in the time-spans (years) typically applied to management planning. Restoration concepts are unachievable in the short term, and will be prohibitively expensive (see Van Dover et al., 2014). (i64)</p> <p>Clark et al also observes that fishery closures are one method but “The effectiveness of such deep-sea fishing closures is, usually, yet to be formally established.</p> <p>One of the most thorough evaluations conducted to date suggests that the spatial closures instigated by New Zealand on the Louisville Seamount Chain, Lord Howe Rise, Challenger Plateau, and West Norfolk Ridge are suboptimal for the protection of VMEs and alternative closures would better balance protection against economic loss to fishers from closure of historically fished areas (Penney and Guinotte, 2013).”</p>
	<p>Ecological communities of seamounts can be considered highly disturbed by bottom trawling in cases where they are composed of slow-growing, fragile and long-lived species, and ancient accumulations of stony coral thickets. Williams, A., Schlacher, T. A., Rowden, A. A., Althaus, F., Clark, M. R., Bowden, D. A., Stewart, R., et al. 2010. Seamount megabenthic assemblages fail to recover from trawling impacts. <i>Marine Ecology</i>, 31(Suppl. 1): 183– 199, 196.</p> <p><b>To summarize these findings, New Zealand vessels are prohibited from bottom trawling anywhere within the SPRFMO area at depths shallower than 200 meters; they are permitted to bottom trawl fish in over half – 54.6% – of the entire seabed area in the SPRFMO area at depths between 200 and 800 meters, an area equal to approximately 23,533 km<sup>2</sup>, and so on. These figures may have altered slightly as a result of changes to the open and closed footprint blocks reported by New Zealand in its report to SPRFMO in 2015.</b></p> <p><b>References</b></p> <p>Given the known impacts of trawling on coral and other sensitive benthic species and the inadequate information on habitats, variation in coral diversity between features, and that data collection coverage is patchy, it is likely that the fishery is causing serious and irreversible harm to ecosystem structure and function.</p>

	<p>A key element in information collection is the presence of MPI scientific observers on vessels. As Peer Reviewer 2 noted: “Throughout the report reference is made to an average of 20% observer coverage of the orange roughy fisheries. However, coverage in the largest fishery has been consistently below 20% since 2010. The report does acknowledge a [sic] decline but not consistently throughout the scoring of P2 scoring issues.”</p> <p>The impact of bottom trawling on corals is likely to be significant with high sensitivity to trawling and long recovery times in the order of decades if not centuries.</p> <p>“Tracey et al (2011[a]) analysed the distribution of nine groups of protected corals based on bycatch records from observed trawl effort from 2007–08 to 2009–10, primarily from 800–1000 m depth. For the orange roughy target fishery, about 10% of observed tows in FMAs 4 and 6 included coral bycatch” (MPI 2014).</p> <p>Tracey et al (2012) noted in a study of a seamount complex on the North Chatham Rise which had been targeted for orange roughy – “The study showed that fish assemblages on seamounts can vary over very small spatial scales, in the order of several km. However, patterns of species similarity and abundance were inconsistent</p>
	<p>across the seamounts examined, and these results add to a growing literature suggesting that faunal communities on seamounts may be populated from a broad regional species pool, yet show considerable variation on individual seamounts.”</p> <p>The impacts of trawling on seamounts and the potential recovery time of the diversity that is there could take centuries to recover from just one trawl. As Clark et al (2015) observed: “many deep-sea invertebrates are exceptionally long-lived and grow extremely slowly: these biological attributes mean that the recovery capacity of the benthos is highly limited and prolonged, predicted to take decades to centuries after fishing has ceased.” Protected deep sea corals are amongst those long-lived invertebrates. (Tracey 2003).</p> <p>Reporting of non-quota management species and non-target fish species (eg corals) relies on reporting from observers.</p> <p>With respect to ocean acidification, there is particular concern for deep-sea habitats such as seamounts, which can support structural reef-like habitat composed of stony corals (Tracey 2011 b). “A shoaling carbonate saturation horizon could push such biogenic structures to the tops of seamounts, or cause widespread die-back (e.g., Thresher et al 2012). This has important implications for the structure and function of benthic communities.” (MPI 2014)</p> <p>Thresher, R E; Guinotte, J; Matear, R; Fallon, S (2012) Adapting to the effects of climate change on Australia’s deep marine reserves.</p>

	<p>Fisheries Research and Development Corporation (FRDC)/National Climate Change Adaptation Research Fund (NCCARF) Report 2010/510, 68 p.</p> <p>Clark, M. R., Althaus, F., Schlacher, T. A., Williams, A., Bowden, D. A., and Rowden, A. A. (2015) The impacts of deep-sea fisheries on benthic communities: a review. – ICES Journal of Marine Science, doi: 10.1093/icesjms/fsv123</p> <p>Ministry for Primary Industries (2014). Aquatic Environment and Biodiversity Annual Review 2014. Compiled by the Fisheries Management Science Team, Ministry for Primary Industries, Wellington, New Zealand. 560 p.</p> <p>Tracey, D., Neil, H., Gordon, D., and O’Shea, S. (2003) Chronicles of the deep: ageing deep-sea corals in New Zealand waters. Water and Atmosphere, 11: 22–24.</p> <p>Tracey D M, Bull B, Clark M R, and Mackay K A (2004) Fish species composition on seamounts and adjacent slope in New Zealand waters. NZ J of Marine and Freshwater Research. 38:163-182.</p>
	<p>Tracey, D; Baird, S J; Sanders, B M; Smith, M H (2011) Distribution of protected corals in relation to fishing effort and assessment of accuracy of observer identification. NIWA Client Report No: WLG2011-33 prepared for Department of Conservation, Wellington. 74 p. (Tracey 2011 a)</p> <p>Tracey, D M; Rowden, A A; Mackay, K A; Compton, T (2011) Habitat-forming cold-water corals show affinity for seamounts in the New Zealand region. Marine Ecology Progress Series 430: 1–22. (Tracey 2011 b)</p> <p>Tracey DM, Clark MR, Anderson OF, Kim SW (2012) Deep-Sea Fish Distribution Varies between Seamounts: Results from a Seamount Complex off New Zealand. PLoS ONE 7(6): e36897. doi:10.1371/journal.pone.0036897</p> <p>Tracey, D. &amp; Mills, S. (2014). Identification of benthic invertebrate samples from research trawls and observer trips 2013-2014. Final Research Report for Ministry of Primary Industries (Project DAE201001C). 61 p</p> <p>Williams, A., Schlacher, T. A., Rowden, A. A., Althaus, F., Clark, M. R., Bowden, D. A., Stewart, R., et al. 2010. Seamount megabenthic assemblages fail to recover from trawling impacts. Marine Ecology, 31 (Suppl. 1): 183– 199.</p>
<p><i>Rationale</i></p>	<p><i>a. The CAB made a mistake as to a material fact.</i> The CAB made mistakes as detailed above.</p> <p><i>b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder.</i> The CAB did not properly consider the submissions of Greenpeace,</p>

	<p>DSCC and ECO.</p> <p><i>c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.</i></p> <p>No reasonable CAB could have reached this decision.  The errors are material as they go to the heart of sustainability.  Significant damage is caused to vulnerable marine ecosystems by bottom trawling.</p>
<p>MRAG Response: The part of this objection that contends that the fishery should not meet the 60 score for PI 2.5.1 is answered under the WWF objection to the same Performance Indicator, above, and will therefore not be repeated here.</p> <p>Under the Unilateral Exemption requirements, MRAG as the CAB must:</p> <p><i>27.4.4.1 The CAB shall verify that the fishery is conforming to Principle 3, Criterion A1: A fishery shall not be conducted under a controversial unilateral exemption to an international agreement.</i></p> <p><i>a. CABs shall use these definitions to interpret this criterion:</i></p> <p><i>i. Controversial means creating a controversy in the wider international community rather than simply between two states.</i></p> <p><i>ii. Unilateral means arising from the action of a single state.</i></p> <p><i>iii. Exemption means a refusal to join or abide by the rules of an international management body, or the taking of a reservation or exception to a measure adopted by such body, when in either such case the effect is to undermine the sustainable management of the fishery.</i></p> <p><i>iv. International agreements are those with a direct mandate for sustainable management of the resources affected by the fishery according to the outcomes expressed by Principles 1 and 2.</i></p> <p>The assessment team has noted that New Zealand is an active member of SPRFMO, the only international body with relevance to this fishery assessment, and then only to the small amount of the ORH 7A fishery beyond the NZ EEZ. The reports of the various SPRFMO Science Working Group meetings, the Preparatory Conference reports and recommendations, the Scientific Committee reports and recommendations clearly show the discursive and developmental process that underpinned the approach adopted by the Commission for the management of the deep water fisheries within the Convention Area. These reports are all publically available on the SPRFMO website (<a href="https://www.sprfmo.int">https://www.sprfmo.int</a>). At no point in any of these documents do the members or CNCPs indicate that there are any issues in the approach to managing the deep water fisheries that would constitute ‘<i>a controversial unilateral exemption to an international agreement</i>’.</p> <p>The exemption referred to by the Objector refers to clause 8h of CMM 2.03 “<i>Notwithstanding sub-paragraphs (d) and (g) above, a Member or a CNCP may exclude part of its bottom fishing footprint from the application of sub-paragraph (g) by dividing its footprint into areas open to bottom fishing, areas closed to bottom fishing and areas to which sub-paragraph (g) would apply. These exclusions must have the purpose of preventing significant adverse impacts to VMEs.</i>” New Zealand implemented a spatial management approach, as described in the Final Report consisting of open areas, closed areas and areas open to fishing where a move-on-rule was in place. This approach was specifically designed to provide for the</p>	

protection of benthic habitat and potential VMEs, was scrutinised by the SPRFMO Science Working Group and accepted by the RFMO as meeting the intent of the CMM.

In conclusion, in terms of the meanings as defined by the MSC, there was nothing either unilateral or controversial in this approach or how it was developed, discussed or implemented.

**Part Seven:**

- a) ***Please specify what specific due diligence steps you say the certification body should have carried out to bring the specified additional information to their attention;***

The deepwater fishing industry already knew about the expected Simmons report, even for 11 months: Seafood New Zealand were aware of its impending release and contents on 20 March 2015. [http://www.seafoodnewzealand.org.nz/fileadmin/documents/Friday\\_update/2015/Friday-Update-20-March-2015.pdf](http://www.seafoodnewzealand.org.nz/fileadmin/documents/Friday_update/2015/Friday-Update-20-March-2015.pdf) and again on February 12 2016: [http://www.seafoodnewzealand.org.nz/fileadmin/documents/Friday\\_update/2015/Friday-Update-20-March-2015.pdf](http://www.seafoodnewzealand.org.nz/fileadmin/documents/Friday_update/2015/Friday-Update-20-March-2015.pdf).

If the CAB did not even hear the rumours that the data, paper or memo existed, when the fishing industry clearly had known for over a year, it clearly had not exercised due diligence. Its should have asked the right questions of the NZ MPI and the fishing industry clients, and should have conducted a google search, which revealed the above two documents in a 30 second search by the objectors. There is a 2015 working paper available at <https://s3-us-west-2.amazonaws.com/legacy.searounds/doc/Researcher+Publications/dpauly/PDF/2015/Working+Papers/PreliminaryReconstructionNewZealand.pdf>. Moreover, Daniel Pauly published in January 2015 an article on global catch reconstruction which showed that the New Zealand data existed and was in the public domain: Daniel Pauley and Dirk Zeller, "Catch reconstructions reveal that global marine fisheries catches are higher than reported and declining:" 7 Nature Communications (19 January 2016), at <http://www.nature.com/ncomms/2016/160119/ncomms10244/full/ncomms10244.html#f2>.

MRAG Response: The assessment team had discussions with MPI staff, including the head of enforcement. We asked about any illegal activities that may occur and about any measures taken to minimize illegal activities and discover those that may occur. We had no reason to expect major irregularities. The paper by Simmons *et al.* 2016 became available in May 2016, far postdating the PCDR. The MRAG assessment team contends that it should not be responsible for draft reports, especially if no stakeholder found them important enough to bring to the attention of the assessment team. A draft of the Simmons *et al.* report was available during the Additional Information Gathering that started 5 May 2015, but the objectors did not bring it to the attention of the assessment team. The assessment team will consider these reports at the first surveillance.

- b) ***Please specify what specific steps you say the certification body should have carried out to obtain the additional information to their attention;***

1. Asked the DWG whether there was any further information the CAB should be aware of
2. Asked the DWG if there are any upcoming papers or research they are aware of.
3. Asked the MPI if there are any upcoming papers or research they are aware of.

4. Asked the MPI if there are any memos or other information which may show that the NZ management scheme including monitoring, control and surveillance particularly over discards is severely deficient.
5. Lodged an Official Information Act 1991 request if the MPI officials had not been forthcoming.
6. Conducted a google search.
7. Conducted the same primary research the authors conducted (Simmons; pages 8-12)

MRAG Response: The assessment team had discussions with MPI staff, including the head of enforcement. We asked about any illegal activities that may occur and about any measures taken to minimize illegal activities and discover those that may occur. We had no reason to expect major irregularities. There is no basis for lodging an OIA request without some specifics to request. The assessment team did perform Google searches for management and enforcement activities and did not find the draft Simmons. The assessment team notes that finding information on the internet is much easier if the searcher has the specific issue of the search at hand – which the team did not at the time of the original and additional information gathering. As the assessment team has noted in this response, the draft Simmons *et al.* report came out in advance of the Additional Information Gathering, and the objectors did not submit it to the team.

- c) ***Please specify which PIs would have been affected by the additional information. Also please specify the particular content, page and paragraph numbers in the additional information which you say should have been taken into account and what the likely outcome in terms of scoring and pass/fail would/ have been.***

[DSCC provided several pages of excerpts from Simmons *et al.* See the DSCC Notice of Objection for the actual excerpts]

MRAG Response: The IA specifically asked which PIs would have been affected by the additional information. We note that none was provided. However, the Simmons report was originally brought up in Part Seven under PI 3.1.1, so we assume that the additional information refers to PI 3.1.1. We have provided an extensive discussion of the legal framework in the assessment report and scoring tables and in the response to comments to the PCDR.

The IA specifically asked how the additional information would have affected the scores of the relevant PIs. DSCC does not provide any information suggesting the likely outcome of taking that information into account. The assessment team asserts that the score would remain unchanged for PI 3.1.1. The national and international legal systems, the transparent dispute resolution, and the commitment to people dependent on fishing are not affected by the results of the Simmons *et al.* report. However, during surveillance the assessment team will consider the report in evaluating PI 3.2.3 Compliance and Enforcement.

The information received by the team during information gathering was sufficient justify the scores given for PIs 3.1.1 and 3.2.3.

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- <sup>i</sup> Alan Williams et al. Seamount megabenthic assemblages fail to recover from trawling impacts. *Marine Ecology*. 2010.
- <sup>ii</sup> Williams et al 2010. Page 194.
- <sup>iii</sup> Levin Lisa Ann, Baco Amy R., Bowden David, Colaço Ana, Cordes Erik, Cunha Marina R., Demopoulos Amanda, Gobin Judith, Grupe Benjamin, Le Jennifer, Metaxas Anna, Netburn Amanda, Rouse Greg W, Thurber Andrew R, Tunnicliffe Verena, Van Dover Cindy, Vanreusel Ann, Watling Les. Hydrothermal Vents and Methane Seeps: Rethinking the Sphere of Influence. 3 *Frontiers in Marine Science*. 19 May 2016. At <http://journal.frontiersin.org/article/10.3389/fmars.2016.00072/full>.
- <sup>iv</sup> Thesher et al. Extraordinarily high biomass benthic community on Southern Ocean seamounts. *Scientific Reports* :119 (2011).
- <sup>v</sup> M. Gianni, O.G. Bos (2012). Protecting ecologically and biologically significant areas (EBSAs): Lessons learned from the implementation of UN resolutions to protect deep-sea biodiversity. Report number C061/12. IMARES - Institute for Marine Resources & Ecosystem Studies. Netherlands. 95pp.
- <sup>vi</sup> UNGA resolution 61/105, paragraph 83.
- <sup>vii</sup> UNGA 66/68, paragraph 122.
- <sup>viii</sup> Paragraph 27 was amended to reflect a review in 2017 instead of 2016. CMM 4.03.Conservation and Management Measure for the Management of Bottom Fishing in the SPRFMO Convention Area. 4 March 2016. AT <http://www.sprfmo.int/assets/Fisheries/Conservation-and-Management-Measures/CMM-4.03-Bottom-Fishing-2016-4Mar2016.pdf>.
- <sup>ix</sup> There is an exception for New Zealand's division of areas into areas open to bottom fishing, areas closed to bottom fishing and areas where the move-on rule applies. Paragraph 8(h).
- <sup>x</sup> CMM 4.03 para. 8.
- <sup>xi</sup> CSIRO Marine and Atmospheric Research (Alan Williams, Franziska Althaus, Mike Fuller, Neil Klaer and Bruce Barker) *Bottom Fishery Impact Assessment, Australian report for the South Pacific Regional Fisheries Management Organisation (SPRFMO). July 2011. ("Australian Benthic Assessment")*.
- <sup>xii</sup> New Zealand Ministry of Fisheries, New Zealand Bottom Fishing Activities by New Zealand Vessels Fishing in the High Seas in the SPRFMO Area during 2008 and 2009. December 2008. Available at <http://www.southpacificrfmo.org/benthic-impact-assessments/>.
- <sup>xiii</sup> Ibid at 14.
- <sup>xiv</sup> New Zealand National Report, page 19.
- <sup>xv</sup> Ibid.
- <sup>xvi</sup> Collated comments by Participants on the New Zealand Bottom Fishery Impact Assessment. SP-07-SWG-DW-02. May 2009
- <sup>xvii</sup> O'Driscoll, R.L.; Clark, M.R. (2005). Quantifying the relative intensity of fishing on New Zealand seamounts. *New Zealand Journal of Marine and Freshwater Research* 39: 839–850.
- <sup>xviii</sup> A. Penney, M. Clark, M. Dunn, S. Ballara & M. Consalvey. A Descriptive Analysis of New Zealand Bottom Trawl Catch & Effort in the Proposed Convention Area of the South Pacific Regional Fisheries Management Organization. SPRFMO-IV-SWG-05.
- <sup>xix</sup> New Zealand Ministry of Fisheries. (2008). Bottom Fishery Impact Assessment: Bottom Fishing Activities by New Zealand Vessels Fishing in the High Seas in the SPRFMO Area during 2008 and 2009.
- <sup>xx</sup> Parker, S. et al., Detection criteria for managing trawl impacts on vulnerable marine ecosystems in high seas fisheries of the South Pacific Ocean. *Mar Ecol Prog Ser*. Vol. 397: 309–317, 2009
- <sup>xxi</sup> A. Penny, Spatial analysis of Australian and New Zealand historical bottom trawl fishing effort in the Convention Area of the South Pacific Regional Fisheries Management Organisation. Research by the Australian Bureau of Agricultural and Resource Economics and Sciences. SPRFMO Document SC-01-20. October 2013. Page 1.
- <sup>xxii</sup> Penny, A. et al., Protection measures implemented by New Zealand for vulnerable marine ecosystems in the South Pacific Ocean. *Mar Ecol Prog Ser*. Vol. 397: 341-354, 2009
- <sup>xxiii</sup> New Zealand National Report, at 8.
- <sup>xxiv</sup> New Zealand notification of amendments to the status of blocks within its bottom fishing footprint. Ministry for Primary Industries. 3rd Meeting of the Scientific Committee. September - 3 October 2015. SC-03-DW-03
- <sup>xxv</sup> See Proposal for exploratory bottom longlining for toothfish by New Zealand vessels outside the bottom lining footprint during 2016 and 2017: Description of proposed activities and impact assessment. SC-03-DW-01\_rev2. At

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<https://www.sprfmo.int/assets/Meetings/Meetings-2013-plus/SC-Meetings/3rd-SC-Meeting-2015/Papers/SC-03-DW-01-rev2-New-Zealand-Proposal-to-conduct-exploratory-bottom-longlining.pdf>.

<sup>xxvi</sup> New Zealand National Report, at 14.

<sup>xxvii</sup> CMM 2.03 Paragraph (5)(b).

<sup>xxviii</sup> A fine scale spatially disaggregated CPUE analysis has been applied to areas to the east of New Zealand, on the Louisville Ridge. "Estimated median stock for these four stocks ranged from 0.23 of K to 0.44 of K with relatively wide confidence limits" SPRFMO Scientific Committee, Report of the Third Scientific Committee, August 2015, page 7. Attempts to model stocks on the Lorde Howe Rise and Northwest Challenger Plateau have not been completely successful and biomass estimates were very poorly constrained. SPRFMO Scientific Committee, Report of the Third Scientific Committee, August 2015, page 7. There are preliminary estimates of initial biomass, productivity and stock status for four of the six orange roughly sub-stocks. There are concerns over the confidence that can be placed in the CPUE modeling generally. SPRFMO Scientific Committee, Report of the Third Scientific Committee, August 2015 pg 7. The SC noted the scarce data that was available for stock assessment. Biomass indices in the SPRFMO area are almost entirely restricted to CPUE low information modeling and thus subject to large variables in outcome. SC03 at 17.

<sup>xxix</sup> SPRFMO Scientific Committee, Report of the Third Scientific Committee, August 2015, page 17.

<sup>xxx</sup> <https://www.sprfmo.int/cmms/benthic-impact-assessments/>

<sup>xxxi</sup> O'Driscoll, R.L.; Clark, M.R. (2005). Quantifying the relative intensity of fishing on New Zealand seamounts. *New Zealand Journal of Marine and Freshwater Research* 39: 839–850.

<sup>xxxii</sup> A. Penney, M. Clark, M. Dunn, S. Ballara & M. Consalvey. A Descriptive Analysis of New Zealand Bottom Trawl Catch & Effort in the Proposed Convention Area of the South Pacific Regional Fisheries Management Organization. SPRFMO-IV-SWG-05.

<sup>xxxiii</sup> New Zealand Ministry of Fisheries. (2008). Bottom Fishery Impact Assessment: Bottom Fishing Activities by New Zealand Vessels Fishing in the High Seas in the SPRFMO Area during 2008 and 2009.

<sup>xxxiv</sup> Leathwick J, Julian K and Francis M (2006) Exploration of the use of reserve planning software to identify potential Marine Protected Areas in New Zealand's EEZ. Report prepared for the Department of Conservation. NIWA DOC06213, June 2006.

<sup>xxxv</sup> Grieve C, Brady DC and Polet H (2014) Best practices for managing, measuring and mitigating the benthic impacts of fishing – Part 1. *Marine Stewardship Council Science Series* 2: 18 – 88 (2014).

**Client submission on matters raised in the Notices of Objection**

12 July 2016

Ms M Carter  
Independent Adjudicator  
c/ Marine Stewardship Council  
Marine House  
1-3 Snow Hill,  
London EC1A 2DH  
United Kingdom

By Email to: [NZorangeroughyobjection@msc.org](mailto:NZorangeroughyobjection@msc.org)

Dear Ms Carter,

### **Orange Roughy Assessments: DWG's Response to Objections**

Thank you for the opportunity to provide a submission in response to these two sets of objections.

Please find our submission attached.

Should you require any further information or clarification we would be happy to provide further details.

Regards,

Victoria Jollands  
*Certification Manager*  
Deepwater Group Ltd

## DWG's Response to WWF's Objections

### Procedural Error #1 – Serious or irreversible harm (PI 2.4.1)

WWF argue that the MRAG assessment team has misinterpreted and misapplied the MSC requirements of assessing whether or not there is “*serious or irreversible harm to habitat structure, ....., and function*” (SolH) in their assessment of the habitat component and that this procedural error made a material difference to the fairness of the assessment in relation to their scoring of PI 2.4.1.

WWF also argue that bottom trawl impacts to deep sea habitats fulfil the MSC definition of serious or irreversible harm by virtue of meeting the criterion given in the second bullet point of GCB3.2: trawl impacts are “*...effectively irreversible on time-scales of natural ecological processes.*”

### DWG's Response 1

The MSC definition of SolH pertains to the whole of the distribution of a particular habitat. If a particular fishing activity, in this case bottom trawling, was taking place over only, say, 1% of a particular habitat type, while that 1% could be impacted by that activity, 99% would not be effected. It would therefore be unreasonable to determine that the habitat had suffered SolH as the vast majority of the habitat would be un-impacted and would remain fully functional in an ecological sense. This is the approach that the CAB has taken in considering the impact of these three orange roughy fisheries on the habitat types. In DWG's view, the CAB has correctly determined that the proportion of each of the habitats impacted by these fisheries is sufficiently low that there is, consequently, a very low probability that they have incurred any SolH over their full extent.

With respect to the alleged misapplication issues:

**Time:** the MSC assessment process is to evaluate the current fisheries' performance against the MSC Standard. What may have happened historically is not a relevant consideration to an assessment of current management practices. The CAB has determined that an appropriate timeframe to understand the fisheries performance consequent to the variations in management practices and to at-sea operations is to consider the most recent five-year period. This approach seems reasonable to DWG in order to meet the requirements of the assessment. For P1 matters, the current stock status, the current management controls, current fishing mortalities and HCRs are what is relevant, not what may have occurred 20-30 years ago. DWG sees an assessment of the P2 requirements of MSC's Fisheries Certification Requirements (FCR) in the same light.

**Spatial Scale:** the CAB has appropriately followed the MSC requirements and guidance to consider scale in these fisheries, especially with respect to habitat. For example, PI 2.4.1 states: “*The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function*” and CB3.14.3 states: “*The team shall consider the full extent of the habitats when assessing the status of habitats and the impacts of fishing, and not just the part of the habitats that overlap with the fishery*”. Thus, where a particular habitat type exists and is impacted by the fishery, the whole extent of that habitat must be considered on a regional or a bioregional basis. The published, peer reviewed description of the Kermadec bioregion shows a clear fit to this approach and the decision of the CAB to assess at this scale is clearly appropriate.

**Precision:** there is clearly imprecision, or more clearly uncertainty, in the exact distribution of different benthic habitats. This uncertainty does need to be considered and was taken into account during the assessment. When dealing with large areas, such as at a bioregional scale, the need for precision becomes of less importance as exactly where boundaries lie makes little difference to the outcome, given the relative scales concerned. The CAB's delineation of pertinent habitats as either 'UTFs' or 'slopes' is based on official published and scientifically collected depth distribution data and, while it may not be not completely accurate over very small spatial scales, the precision in relation to the large scale of the areas concerned is more than adequate for the purpose.

**Logic:** as is discussed at length in their final report, the CAB's estimation of the area of impact is greatly affected by the assumptions made. In every case in this assessment, the most precautionary choice was made in determining the likely area impacted. For example, the estimation of the fishing 'footprint' has been made using a swath from the door-to-door measurement. It is clear from knowledge of the performance of bottom trawl gear that not all of the gear between the doors will be in contact with the seabed all of the time - at times it will just be the net footrope (covering some 20% of the door to door width); at other times it will be the footrope plus a proportion of the bridals and sweeps. The assumption used when estimating bottom trawl 'paths' for orange roughy fisheries is for a door-to-door spread of 150 m (i.e. when maximally deployed). The net spread wing tip to wing tip spread is around 20-30 m. Another implicit assumption in these spatial analyses is that a single pass of a trawl net will act to destroy all of benthic habitat and epibenthic fauna. This clearly overstates the level of impact by a large margin. Scientific studies have shown this to be a substantive overestimate of the level of impact, with typically five passes by trawl gear to remove most of the large epibenthos (see, for example, the repeated trawl depletion experiments reported by Pitcher *et al* 2015). The spatial scale of the estimated trawl footprint as is used in these analyses thus substantially overstates the real area of the fishing impact and does so specifically to provide a measure of precaution and to address the inherent uncertainties.

**True status:** for the very large areas that have never been fished for operational reasons (e.g. no fish present, too deep, too rough, too steep) combined with the areas closed to bottom fishing as a deliberate management action (including Benthic Protections Areas, 'Seamount' Closures, Marine Reserves, and areas closed to bottom trawling on the high seas by the South Pacific Regional Fisheries Management Organisation, the RFMO managing fishing in the areas adjacent to the New Zealand EEZ) these can be reasonably assumed to be pristine. There is further ground that has been little fished, often as there are no orange roughy present, which will be in a good or near-pristine condition. The difference in scale between these areas and the much smaller areas that have been fished permits the status to be determined with a reasonable degree of confidence, contrary to the claims by WWF.

Reference: Pitcher, C. R., Ellis, N., Venables, W. N., Wassenberg, T. J., Burridge, C. Y., Smith, G. P., Browne, M., Pantus, F., Poiner, I. R., Doherty, P. J., Hooper, J.N.A., and Gribble, N. (2015). *Effects of trawling on sessile megabenthos in the Great Barrier Reef and evaluation of the efficacy of management strategies*. – ICES Journal of Marine Science, doi: 10.1093/icesjms/fsv055.

### **Procedural Error #2 – A complete historical perspective (PI 2.4.1, 2.3.1, 2.5.1)**

WWF argue that the MRAG assessment team under-emphasise the historical record of trawl impacts to deep sea habitats.

#### **DWG's Response 2**

The general response to reviewing fisheries data over the last five years rather than over longer time frames is dealt with in DWG's Response 1 (above).

WWF quote CB3.2.2 as a reason for needing to look further at a longer timeframe of fishery data. This is a misinterpretation of the intent of CB3.2.2, which is to consider "*the resilience of historical arrangements to function adequately*", a reference to previous management arrangements and "*deliver low risk under future conditions*" (i.e. will the historic management arrangements deliver the desired low risk outcome into the future?). All of the monitoring and management arrangements for habitat (PI 2.4), ETP corals (2.3) and wider ecosystem effects (PI 2.5) have been in place for some time and have delivered the outcomes in these areas, as assessed by the CAB, with some achieving the SG80 threshold and others not so. There is, therefore, no explicit or implied requirement to consider long timeframes of fishery data under CB3.2.2. The subsequent text repeats the same error, in arguing that a longer timeframe of data would have led to a different view. But it is not the historic impacts to which CB3.2.2 refers but the ability of the historic management approach to deliver sustainability with the current and future fisheries. With the current harvest strategy and harvest control rules in place these are, and will remain, over markedly smaller spatial scales than previously.

### **Procedural Error #3 – Key scoring information was confidential (2.3.1, 2.4.1)**

WWF argue that "*confidential tow-by-tow information*" is key information and that the practice of using confidential information to score a fishery lacks transparency and runs contrary to the MSC rules.

#### **DWG's Response 3**

The use of commercial or government information of a confidential nature is sometimes a necessity as is the need to retain confidentiality, including, for example, regulatory agency surveillance data, VMS data and individual vessel location data. The MSC FCR specifies keeping confidential that information specified as confidential in legislation. New Zealand's Fisheries Act 1996 and regulations require the government to treat commercial information (including the details of tow-by-tow locations of trawl shots) confidential, as do the requirements of New Zealand's Official Information Act 1982 (e.g. Section 9).

#### **Procedural Error #4 – Clear separation of fact from opinion (PI 2.3.1)**

WWF argue that the MRAG assessment team have placed their own views in front of the opinions of leading experts.

DWG notes that the MSC FCR require the CAB to clearly and concisely separate fact from opinion in the assessment report. WWF argues that the CAB team did not follow this requirement, at least for one performance indicator.

#### **DWG's Response 4**

In addressing PI 2.3.1c in DWG's view the CAB has used published science to support their scoring with respect to indirect impacts of fishing on ETP species. This specifically includes addressing predator-prey interactions and the potential for trawl sediment plumes to impact on corals. In this latter case, although studies are limited, logical argument has also been used to support the scoring but this has been presented in a separate paragraph from those dealing with evidence, thus clearly separating the evidence and logical argument components.

#### **Procedural Error #5 – Default tree: clarification changes intent at SG100 (PI 2.4.2 c)**

WWF argue that a partial strategy cannot be said to meet the SG100 level because the scoring guidepost clearly stipulates, *"there must be clear evidence that the strategy is being implemented."*

WWF also argue that the new fishery requirements and default assessment tree (FCR V2.0) do not apply to this fishery and that there is no published variation request approved by MSC.

#### **DWG's Response 5**

The measures in place to protect habitats are not weak. Both logically and scientifically, areas closed to bottom fishing, including Benthic Protection Areas, Seamount Closures and Marine Reserves, provide the most robust and enforceable measures to protect benthic habitats. Some 30% of the New Zealand EEZ is closed to bottom trawling by these measures.

The Client has maintained a consistent approach to the version of the MSC FCR against which these fisheries are being assessed and, along with the CAB, has striven to ensure that the requirements V1.3 have been applied throughout the assessment and the information provided to support this. DWG does not agree that V2.0 has been applied within PI 2.4.2c as is claimed by WWF. SG100 guidepost text for PI 2.4.2c states, *"There is clear evidence that the strategy is being implemented successfully."* Under PI 2.4.1 it is made clear that the strategy to protect benthic habitat is one of spatial management implemented through a network of areas that are closed to bottom fishing, with a total of 30% of the EEZ now closed to bottom trawling. The proportion of fishable area closed to bottom trawling in the bioregion immediately outside of New Zealand's EEZ under SPRFMO's management is greater still. The clear evidence that this strategy is being implemented successfully is that the variety of closed areas continue to exist, that these areas have been frequently added to over recent years, and that there is integrity to the areas closed to bottom fishing (as is demonstrated by the close and effective monitoring by both satellite vessel position monitoring system (VMS) of the whole fleet and by the presence of

observers on a proportion of the fleet). There have been very few violations detected and a successful prosecution of the one proven event.

### **Procedural Error #6 – Forest for the trees: biogenic structure (2.4.1, UTF habitat and Slope habitat)**

WWF argue that in their scoring rationale for PI 2.4.1, the MRAG assessment team did not give explicit consideration to how trawling may impact upon the structure of deep water habitats.

#### **DWG's Response 6**

The MSC guidance is very clear that if an organism is an ETP species then it has to be assessed under the ETP PIs (2.3) and only under the ETP PIs. Corals should not, therefore be dealt with a second time under the habitat PIs (2.4).

As described in DWG's Responses 1 and 5 (above), the strategy to manage fishing impacts on benthic habitat is one of spatial management. The management approach is to ensure that fishing has a very low probability of causing any adverse effects on either the structure or the function of the benthic habitat and to ensure that sufficient habitat remains un-impacted by having substantive areas closed to bottom fishing. In doing so, it is recognised that there will be some limited impacts on habitats in those areas that are trawled but that over the full range of the habitat, the impacts will be well below those expected to cause significant adverse effects or to cause "*serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function*". By these management measures, the majority of the contribution to the ecosystem of both the structural and functional elements of coral is maintained, thus the issues raised by WWF in relation to a lack of detailed knowledge of such things as the spatio-temporal impacts of trawling become irrelevant. It is clear, therefore, that the CAB reviewed both the structural and functional components of the relevant habitats in assessing the likelihood of each fishery to cause serious or irreversible harm to both of these and has correctly determined that this is highly unlikely.

### **Procedural Error #7 – Kermadec: the appropriate bioregion? (PI 2.3.1, 2.4.1, 2.4.3)**

WWF argue that by including large areas (Kermadec bioregion) that extends beyond the operating range of the orange roughy fishery in calculations of the impact of the fishery, the MRAG assessment team distorted or minimised the proportion of the bioregion that appears to be impacted by the fishery and has thereby erroneously 'credited' the fishery for not impacting habitat areas and types, including those that are beyond fishable depths.

#### **DWG's Response 7**

In addressing the spatial scale of the impact of fishing on a habitat, the MSC requirements are clear, as stated in PI 2.4.1, "*The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function.*" Thus the CAB is required to consider the full extent of the habitat. MRAG's assessment team did so appropriately by using the best, publically available science that defines the Kermadec

bioregion. Thus, the distribution of the habitat is known and, moreover, the locations of those areas of specific concern to WWF, 'seamounts', are well defined. Concerns expressed by WWF about biodiversity on seamounts are overstated. Clark *et al* (2012) clearly show that the early assumptions about seamounts being hotspots of bio-endemism were incorrect and an artefact of the very limited sampling. However, it should be noted that more than half of the seamounts within the New Zealand EEZ are closed by law to bottom trawling, together with a substantial number of those on the high seas, which are protected under SPRFMO management measures. Very few seamounts (i.e. UTFs with elevations of 1,000m or more) are fished in the New Zealand EEZ, and no seamounts are fished for orange roughy in any of the three Units of Assessment under consideration.

WWF's suggestion that the depth distribution over which orange roughy are commercially fished should be used as the basis for evaluating the extent of habitats is deeply flawed. There is no justification for using the distribution of one species to describe the distribution of another species, unless a clear and strong relationship has been demonstrated between the two species. In this case, no linkages have been demonstrated between orange roughy and corals. More importantly, it is clearly the full distribution of the habitat that must be considered, as is required by the MSC FSR. What is also known is that the distribution of corals extends both into much greater depths and into areas that are not fished for orange roughy. In general, the most productive areas fished for orange roughy are separate from those areas where corals are known to be most abundant

Reference: Clark, M.R., Schlacher, T.A., Rowden, A.A., Stocks, K.I., and Consalvey, M. (2012). Science Priorities for Seamounts: Research Links to Conservation and Management. *PLoS ONE* Vol 7 Issue 1, e29232 12pp.

### **Procedural Concern #8 –Ecosystem services? (PIs 2.5.1, 2.5.2)**

WWF argue that the MRAG assessment team gave no serious consideration to the question of how the fishery impacts the capacity of the ecosystem to deliver ecosystem services to the component fishery, to other fisheries, and to human uses.

#### **DWG's Response 8**

Specific ecosystem services are delivered from differing elements of an ecosystem. Essentially, if the principal components of the ecosystem are maintained at a sufficiently high level, then it follows that the ecosystem services that they are providing will be adequate to ensure that there is little prospect of fishing causing serious or irreversible harm to the wider ecosystem. There is, therefore, no requirement to identify or to quantify specific ecosystem services in order to understand the likely impacts of fishing on the functioning of the wider ecosystem.

The strategy to manage and monitor ecosystem health related to the three fisheries under assessment and to other fisheries, involves:

- Monitoring and managing the complex of deepwater target fishery stock biomasses to ensure that the biomass of each species does not fall to unacceptably low levels using acoustic and trawl research surveys and stock assessments to inform management;
- Monitoring indices of the biomasses of a wide-range of non-target fish species using acoustic and trawl research surveys and commercial catch rates to inform management;

- Studying predator-prey interactions of the species in the region; and,
- Modelling the energy flow through the different elements of the ecosystem, specifically including orange roughy as component species, even though its biomass is small, the fishing mortalities are very low (less than 5% of adult biomass) and the species has a relatively low energetic value.

The key elements of this strategy are presented and discussed by the MRAG assessment team in relation to demonstrating the risk of a serious or irreversible harm, fulfilling this MSC requirement.

### **Procedural Error #9 – Change to unit of certification (PI 2.3 and 2.4 – ESCR)**

WWF argues that during the assessment the MRAG assessment team changed the unit of certification (UoC) for ORH3B ESCR and that such an action does not follow the MSC requirements (27.4.3). WWF also argues that the MRAG Final Report makes erroneous reference to the “Unit of Assessment” or UoA - a term that they contend was not introduced by MSC until release of FCR V2.0 and one that is therefore not applicable to this assessment.

### **DWG’s Response 9**

The UoA of the ORH3B East and South Chatham Rise (ESCR) fishery was altered during the early part of the assessment as the original basis of definition was recognised as being flawed and adjustments to UoA are permitted under the MSC FCR V1.3. The principal reasons for changing the spatial extent of the UoA were to:

- Exclude effort by vessels not fishing for or catching orange roughy to the west of 179° 30’W on the southern Chatham Rise - an area that is principally an oreo target fishery; and,
- To ensure that all orange roughy that are caught within the UoA will be covered by the certificate, irrespective of the target species being sought.

In summary, the UoA for the ESCR fishery was amended in order to accurately capture the catches of orange roughy in this fishery, while not also including irrelevant fishing activities in which few orange roughy are caught.

Stakeholders were advised of this approach by the CAB in an email on 17 September 2014 and were subsequently notified of the definition of the final UoAs by the CAB in an email on 15 October 2014.

During the pre-assessment, the UoAs were defined as orange roughy target fishing in the relevant quota management areas or designated sub-areas in the case of the MEC and the two Chatham Rise fisheries.

During the full assessments, however, it was noted that if the UoAs were limited to orange roughy target fishing, a substantial amount of orange roughy catch that is taken as bycatch in oreo target fishing would not be covered by the certificate, should the fisheries meet the MSC Standard.

Consequently, if this approach was to be followed there would likely be chain of custody issues arising – to ensure that orange roughy not covered by the certificate do not enter the certified supply chains.

To address these concerns, an investigative analysis was undertaken to determine how best to define the UoAs in order to capture the orange roughy catch without including fishing effort that is not relevant to orange roughy fisheries and to minimise any associated complexities within the chain of custody.

A number of approaches were explored, including certifying only specified vessels, but this would have required all effort by these vessels, regardless of target species, to be included in the assessment, including target tows for alfonsino, barracouta, hoki, squid, amongst other species.

An assessment of the spatial extent of orange roughy catches within the designated management area ORH3B ESCR, determined that limiting the UoA to orange roughy and oreo target fishing within a defined area east of 179° 30'W would include the majority of the orange roughy catch. This realignment of the western boundary of the UoA on the south Chatham Rise incorporates 99.6% of the orange roughy catch from the entire ORH3B East & South Chatham Rise fishery over recent years, while excluding around 2,500 tows which targeted oreo that did not catch orange roughy. All fishing effort targeting either orange roughy or oreos to the east of 179° 30'W within ESCR is included.

On the south-western Chatham Rise, almost all of the fishing between 800-1600m depth is for oreo species. Very little fishing occurs here for orange roughy. In order to ensure that the UoA includes only those areas that are relevant to orange roughy, the western portion of the ORH3B ESCR management area on the south Chatham Rise was excluded from the UoA.

#### **Procedural Error #10 – Key information: Description of fishing gear and method (ETP corals, Habitat)**

WWF argue that the PCDR and Final Report do not give a description of the fishing gear and practice used by the fishing operation.

#### **DWG's Response 10**

The general description of the fishing gear used in bottom trawling is widely known and is readily available to the general public, including on the UN FAO website. Complete descriptions of the specific bottom trawl gear are contained within a number of the references used in preparing the Final Report and are publically available to any stakeholder who has an interest. Therefore, there is little need for the CAB to reproduce net plans and dimensions within the Final Report and DWG rejects the idea that not specifically including a gear description would have made a material difference to the fairness of the assessment.

For any stakeholder interested in the habitat component, reviewing one of the key habitat impact documents referenced in the Final Report would have provided a full description of the gear used (see MFish 2008).

Reference: MFish (2008). *Bottom Fishery Impact Assessment. Bottom Fishing Activities by New Zealand Vessel Fishing in the High Seas in the SPRFMO Area during 2008 and 2009*. 102pp. Available from: <http://www.sprfmo.int/assets/Meetings/Meetings-before-2013/Scientific-Working-Group/SWG-06-2008/a-Miscellaneous-Documents/New-Zealand-Bottom-Fishery-Impact-Assessment-v1.3-2009-05-13.pdf>.

## **Error of Condition Setting #11 – More coral data is not more coral protection (Condition 2, 2.3.1, NWCR and ESCR UoCs)**

WWF argue that Condition 2 does not specify milestones that set out measurable improvements in terms of a direct demonstration that the fishery implements requirements for the protection and rebuilding of ETP corals by reducing coral mortality.

### **DWG Response 11**

The issue identified by the CAB that is intended to be addressed by Condition 2 is that the scientific evidence presented that the fisheries do not pose a risk of serious or irreversible harm to ETP corals had a level of associated uncertainty that meant it was not possible to achieve the SG80 for PI 2.3.1b for the NWCR and ESCR fisheries.

Condition 2 was, therefore, developed to ensure that, by the end of the certification period, the evidence available for these two fisheries would be sufficiently robust to demonstrate that the fisheries do not pose a risk of serious or irreversible harm to ETP corals. This approach gives the Client scope to address issues of uncertainty in the evidence and/or implement further management to effectively meet the requirements of this PI.

It is clearly not appropriate for a Condition to include milestones, as is proposed by WWF, that are intended to deliver *“measurable improvements in terms of a direct demonstration that the fishery implements requirements for the protection and rebuilding of ETP corals by reducing coral mortality”* if the existing measures are adequate but the way interactions have been monitored or analysed have an unacceptably high level of uncertainty.

The spatial management approach using a network of areas closed to bottom fishing to protect habitat and ETP coral is providing more than adequate protection for the ETP corals, as we believe we have shown and the CAB has evaluated. No evidence has been presented by any stakeholder, or identified by those agencies that have a remit to have a care for protected species, that any of these corals are depleted in population terms and thus they are not in need of rebuilding. Given this, there is no need to provide further protection or to demonstrate rebuilding as WWF argues.

For these reasons, DWG believes that Condition 2 is appropriate to address the identified is relating to high uncertainty and that the Client Action Plan is appropriate to address the Condition within the timeframe.

### **Error of Condition Setting #12 – Threat to ETP species: sufficient information (Condition 3, PI 2.3.3, NWCR and ESCR UoCs)**

WWF argues that the MRAG assessment team accepted a corrective action plan from DWG that falls substantially short of MSC requirements (27.11.2.4-5). Condition 3 specifies that “*by the end of the certification period information must be sufficient to determine whether the fishery may be a threat to protection and recovery of ETP coral species.*” However, the client action plan says that in the first year, the client will “*...Present a plan to reduce uncertainty regarding the threat of ORH fishing to the two UoAs on ETP coral groups.*” The proposed plan does not address sufficiency of information, only improved certainty.

#### **DWG’s Response 12**

As with Client Response 11 (above), the issue identified is one of uncertainty not one of a lack of information. Condition 2 and the Client Action Plan are designed to specifically address this issue.

This basis of this part of the objection appears to be a concern about what the CAB may or may not have determined about the adequacy of the available information. This is pure speculation and should not form part of an evidence-based process such as an assessment of a fishery against the MSC FCR. If, at some time in the future, any stakeholder is of the view that this has happened, then there are procedures in place for this to be raised with the CAB for their oversight.

DWG, therefore, refutes the basis of this objection, as the CAB, and for that matter the Client, has yet to determine if the information is adequate to meet the SG80. This will only be known following the analysis of the available information, the delivery of Client Action Plan and the review of the evidence by the CAB, as fully informed by stakeholders’ views at the time.

### **Scoring Error #13 – NWCR stock is depleted and must be scored under 1.1.3 (PIs 1.1.1, 1.1.3)**

WWF argues the NWCR stock has not yet rebuilt to a safe stock level and should have been scored below 80 under 1.1.1.

#### **DWG’s Response 13**

The apparent differences in the probabilities of being below the LRP is due to there being two separate determinations of this value in the New Zealand system.

The 2014 stock assessment estimates the NWCR stock biomass to be within the Management Target Range (i.e. the TRP) with very high probability (Cordue, 2014b). WWF has confused the information presented for managers in MPI’s 2015 Plenary report which, although based on the stock assessment, also includes the opinions of the science Working Group (WG).

MPI’s Plenary report includes fixed percentages and percentage ranges for stocks in relation to the management reference points. The options are given in the Guidelines for Status of the Stocks Summary Tables (page 38 of the 2015 Plenary report) are >99%, >90%, >60%, 40-60%, <40%, <10% and <1%, no other values are accepted for use in this report. These options are an interpretation (i.e. opinion) of the WG, based on the stock assessment and on other

information and are intended to inform managers in a simple, formulaic way that is the same for all stocks. They do not align with the critical percentages required by MSC of 70% and 80% probability. The WG considered that they were not comfortable to state that there was a <1% probability of being below the LRP and so chose the next reporting number available that was <10% (Tingley, *pers comm*).

The probabilities presented in Table 8 are taken from Cordue (2014b) and are the outputs from the Bayesian, base case stock assessment model which reports the stock status as <1% probability of being below the Limit Reference Point (LRP).

Whether one chooses to accept the outputs of the stock assessment (<1%), which is usual in MSC assessments, or the more precautionary value chosen by the WG of <10%, the outcome is the same: there is a very high probability, somewhere between 90% and 100%, that the NWCR stock status is above the LRP. The CAB has appropriately used the outputs from the stock assessment.

It is inappropriate for WWF to arbitrarily select their own target reference point and to subsequently make their own comparisons with the evaluated stock status. The scientifically evaluated, peer reviewed and implemented TRP range is 30% to 50%  $B_0$  which has been specifically evaluated against the MSC performance requirements and should be the only TRP used in assessing these three fisheries against the MSC FCR.

The difference between the perceived risk of overfishing between Table 8 and the Plenary, is the same as is outlined above. Table 8 in the Final Report is the quantitative output of the stock assessment. The value in the Plenary is the qualitative opinion of the Working Group, expressed as a percentage. It is normal to use the stock assessment outputs when considering P1 issues in a MSC assessment.

WWF is “concerned that such high fishing mortalities might hinder the ability of the stock to rebuild within the timeframe specified for the stock under PI 1.1.3b.” The current and expected future levels of fishing mortality, from the application of the harvest control rule (HCR) are extremely low. Reference to Figure 7 in the Final Report shows that the current level of fishing mortality (expressed as fishing intensity) has, over the last four years, been the lowest seen since this fishery started in the late 1970s.

The levels of fishing mortality for each of these three fisheries, consequent to management measures based on the 2014 stock assessments, are shown diagrammatically in Figure 1 (on page 26 of this submission).

### **Scoring Error #2 – LRP and TRP are not sufficiently precautionary (PI 1.1.2a)**

WWF argues that the score given to PI 1.1.2a by the MRAG assessment team cannot be justified because the scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it. Specifically, WWF asserts that limit and target reference points have not been shown to be appropriate for the stock and therefore do not meet the SG80 scoring level. WWF argues that reference points should be more precautionary for a long-lived species like orange roughy (FRvol2, p. 15-30).

### **DWG's Response 14**

The assertion that the limit reference point (LRP) and target reference point (TRP) range have not been shown to be appropriate for the stock is false. The LRP and TRP range were determined as part of a detailed and extensive management strategy evaluation (MSE). The MSE methodology was peer reviewed and the outputs accepted for use in management by both industry and the Ministry for Primary Industries. The use of MSE to explore options for reference points is considered state of the art (i.e. they are better than best practice). The MSE evaluated a wide range of uncertainties and the selected reference points and accompanying harvest control rule (HCR) provide for very strong, precautionary management. WWF mentions 'other' as yet unquantified uncertainties but does not identify any of these. The MSC FCR does not require a HCR to take into account all uncertainties, just the main or a wide range of uncertainties.

### **Scoring Error #3 – Is hoping the fishery footprint won't expand a strategy? (PIs 2.3.2, 2.4.2)**

WWF argues that a strategy that relies in large part on unenforced or unlegislated behaviour by the fishery does not meet this requirement.

### **DWG's Response 15**

The MSC FCR do not require management measures to be regulated, just that they are followed, and the certifier looks for evidence of this.

In using the example of the spatial approach of SPRFMO, the Objector has failed to grasp both the spatial scale issue and the exact nature of the implications for the open areas. The SPRFMO approach uses open and closed blocks of 20' by 20' (i.e. about 400 square nautical miles per block). In the open blocks, all of the area can be fished even though only a small proportion of it may have been fished previously. This is not in any way freezing the trawl footprint, the actual footprint can expand considerably. This approach offers no more protection within the open blocks than the approach used within the fisheries inside the New Zealand EEZ. The real key to success in the SPRFMO approach is the scale of the closures to bottom fishing, an approach mirrored by the substantive closures to bottom trawling within the EEZ.

With respect to the use of a five-year dataset for evaluating the footprints of the fisheries, please see DWG's Response 2 (above).

The use of specific tow lines on UTFs may not be formally regulated but is none-the-less enforced by the nature and topography of the seabed and the occurrences of target fish in relation to the oceanographic conditions and the topography of each UTF. Trying to tow in areas that contain no fish or that are too rough or too steep is uneconomic and may lead to significant damage to expensive fishing gear, or place the safety of crew and vessels at risk and will not eventuate in a viable catch of fish. Using the same tow lines is effectively self-limiting - no less effective than if it was regulated.

To reiterate, the MSC FCR do not require management measures to be regulated, just that those determined are followed and that the performance of the fishery against these is assessable by the CAB. Where non-regulated measures operate in New Zealand's deep water fisheries, including those for orange roughy, the government independently monitors and reports on industry performance, using a variety of tools, including VMS, at sea observers and auditing measures.

Overall, the strategy of having a network of closed areas covering 30% of the New Zealand EEZ, coupled with specific closures of areas identified as potentially having high levels of biodiversity (such as UTFs, seamounts and 'black-smokers') is an effective and manageable approach to address the interactions between fishing and habitats.

#### **Scoring Error #4 – Indirect effects: sediment plumes and ETP corals (PI 2.3.1c, all UoCs, scoring element: ETP corals)**

WWF argues that the score that MRAG's assessment team has given to PI 2.3.1c cannot be justified because the scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.

WWF asserts that the fishery has not been shown to meet the SG80 level of scoring issue c, which requires that "*indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.*"

#### **DWG's Response 16**

It is widely acknowledged that there is very limited experimental data from the deep ocean. This is due to both the practical difficulties and high costs of working in this challenging environment. Under such conditions, an accepted scientific approach is to use expert judgment to draw upon studies from other, less challenging (i.e. shallower) marine environments and to extrapolate the results to the deep ocean, noting that there will be a higher degree of uncertainty associated with results from such extrapolations.

During the various open meetings and presentations that have occurred over recent years during the preparation of these orange roughy fisheries for assessment, there have been considerable discussions on the likely extent and relevance of sediment plumes for both habitat and coral. These discussions included some of the world's leading experts as named by WWF.

DWG believes that MRAG's assessment team did consider the indirect impacts of fishing on ETP corals as fully as was possible and as is required by the MSC FCR. The critical factors in this outcome are:

- The relatively large proportion of the EEZ that is closed to bottom trawling that contains undisturbed coral that has not been and will not be impacted by sediment plumes due to bottom trawling;
- The inverse relationship between the distribution of sediments that are likely to give rise to sediment plumes (i.e. soft, detrital and mud sediments) and the distribution of higher density corals, which predominantly occur in areas of hard substrates where there is relatively little sediment to disturb and cause sediment plumes;
- The general observation that the prime areas where corals occur are those where the substrate is relatively clear of sediment due to the requirement for solid substrate (such as rock or other hard surfaces) onto which they can settle and hold fast against the underwater currents.
- When fishing down the sides of underwater topographical features (UTFs), the slope and method of fishing means that the trawl doors, which spread the net, tend to be off the seabed and so do not contribute to any sediment plume created. This means that sediment plumes on UTFs (where WWF's main concern on coral is focused) will tend to be smaller than on equivalent flat areas where the trawl doors will tend to be on the seabed.

Given the analyses, discussions and consideration, all independently reviewed and commented on by the CAB, the scoring was neither arbitrary nor unreasonable.

DWG notes that the evaluation of the indirect impacts of fishing on ETP corals did not rely on any confidential information.

Given the above, it is DWG's view that the Objector is mistaken in their view that the CAB did not fully and adequately consider the indirect impacts of fishing on ETP corals and that, therefore, there was no material difference creating unfairness in the assessment.

#### **Scoring Error #5 – Indirect effects: sediment plumes and habitats (2.4.1, all UoCs, scoring elements: UTF habitat and slope habitat)**

WWF argues that the MRAG assessment team made an error in scoring habitat impacts (PI 2.4.1) because they failed to adequately consider the indirect effects of trawling on habitats. WWF argues that for this reason the fishery has not been shown to attain the SG80 level (no more than 30% probability of reducing habitat structure and function to the point where there would be serious or irreversible harm). Doing so made a material difference to the fairness and objectivity of the scoring of PI 2.4.1.

#### **DWG's Response 17**

This is repeat for habitat of the concerns for coral expressed by WWF in Scoring Error #4 (above). Please see DWG's Response 16 for this issue.

### Scoring Error #6 – Measures to protect ETP corals (PIs 2.3.2)

WWF disagrees with MRAG's assessment team that the measures currently in place constitute a strategy designed to "*minimise mortality of ETP corals*" as required by New Zealand law and purports that the measures in place are not sufficiently precautionary to justify awarding the SG80 scoring level. WWF further contends that existing measures to minimize mortality of ETP corals are not sufficiently precautionary and therefore the score assigned by the CAB to PI 2.3.2 is not justified.

### DWG's Response 18

WWF correctly identifies that the Benthic Protection Areas (BPAs) have a major role in providing safe habitat for protected corals. They do, however, omit to recognise those other elements of the strategy that contribute to ensuring that the fishing impacts on corals are minimised. These specifically include:

- The natural occurrence of untrawlable ground that provides habitat for coral even immediately adjacent to areas of high fishing pressure, as evidenced by the establishment of safe-to-fish trawl tow lines on UTFs;
- The array of other spatial closures pertinent to these fisheries, including Marine Reserves, Seamount Closures, Marine Mammal Exclusion Areas, and areas closed to fishing to protect submarine cables, etc.; and,
- The substantive benthic closures under SPFRMO management within the same bioregion.

WWF also fails to recognise that the scale of the fishery, both now and as it will be in the foreseeable future (as determined by the application of the HCR) will be much smaller in scale than the earlier fisheries and that consequently any benthic impacts will be similarly reduced. This is not a trivial point, as it is recognised amongst the scientific community that one of the most effective ways to reduce benthic impact is to reduce effort and the spatial extent of this effort. The three orange roughy fisheries under assessment are undertaken by surgical target fishing over very small well-defined areas, most of which are revisited year after year. There is very little exploratory fishing over new grounds as the stocks are in such high abundance that economic catches of the small amounts of available quota can be readily taken from the most productive of the already known fishing grounds.

The CAB is under no requirement to list or to review other management approaches or measures that could contribute to managing fishing impacts on benthic habitat and ETP coral as WWF proposes. The role of the CAB is to review the current fishery, its management and environmental performance.

The relatively low level of importance of sediment plumes is dealt with in DWG's Response 16 (above).

WWF notes that SPRFMO has introduced specific measures to protect vulnerable marine ecosystems (VMEs) and that these are not replicated within the EEZ. RFMOs with bottom fisheries have a specific requirement to recognise and to manage 'VMEs', which is not something many coastal state governments are required to do. Within EEZs, which generally have much better regulated and managed fisheries than those on the high seas, it is generally not necessary to make specific provision for the poorly defined concept of 'VMEs' provided that adequate benthic protection is already provided for by other management means. For example, adequate protection is already provided within the New Zealand EEZ through a network of BPAs, Marine Reserves, exclusions on specified fishing practices, and there are specific

provisions for protecting areas of high biodiversity or high conservation interest for other reasons. That these are well provided for within the New Zealand jurisdiction is clearly evidenced in the Final Report. Most importantly, v1.3 of the MSC FCR makes no reference to or requirement to address 'VMEs' as a particular matter in and of themselves.

### **Scoring Error #7 – An inadequate habitat classification system (PIs 2.4.1, 2.4.2, 2.4.3)**

WWF argue that in scoring PI 2.4.1, the MRAG assessment team did not adequately consider the system of habitat classification in order to predict impacts. WWF note that only two large-scale bathymetric features ('UTFs' and 'slope areas') were scored as habitats while small-scale diagnostic habitat features like different substrates or biota (GCB3.14) were not used for habitat classification.

### **DWG's Response 19**

As noted in DWG's Response 1 (above) the stated requirement in MSC's FCR is to consider habitat on a large scale, a management unit, regional or bioregional basis. To do so effectively precludes addressing fine scale structures (given the size of the areas under assessment) that WWF suggests is appropriate. Further, the MSC FCR seek consideration of any impacts, not on a piece-meal basis but in the context of whether or not these are causing serious or irreversible harm to habitat structure and function, when considered on a regional or bioregional basis.

With the selection of the Kermadec bioregion as one of the bases for this assessment, it would have been acceptable and appropriate under the MSC FCR for the CAB to consider only one habitat type. It was, however, deemed appropriate, given the various uncertainties, to divide the Kermadec bioregion into two component habitat types (i.e. 'UTF habitat' and 'slope habitat'), which provides a more precautionary approach to the assessment of the impacts of the fisheries on the habitat and on ETP corals.

The reference made by WWF to VMEs is irrelevant, as VMEs are not recognised under the MSC FCR V1.3 nor under New Zealand fisheries law within the EEZ.

### **Scoring Error #8 – Status of benthic ecosystem was not assessed (PI 2.5.1, 2.5.3)**

WWF argues that in scoring PI 2.5.1 the MRAG assessment team did not assess the outcome status of the deep sea benthic ecosystem and the scoring rationale for PI 2.5.3 overstates knowledge of the main impacts of trawling the deep sea benthos.

### **DWG's Response 20**

Consideration of the ecosystem effect of fishing has, by necessity, to include consideration of a much wider picture than just the benthic component of the ecosystem. In addressing the potential for these fisheries to impact the wider ecosystem, the CAB did consider the benthic impacts of fishing and how these flow through into wider ecosystem services, as well as how those interactions are managed. The CAB also considered the various predator-prey

relationships, including orange roughy as both predator and prey, and the energy flows through the system using models that specifically included orange roughy as a named component.

DWG submits that the CAB did appropriately consider the benthic habitat as part of the wider ecosystem and appropriately weighted the benthic component, rather than focusing exclusively on the benthic component as WWF has done in their submission.

WWF misrepresents the CAB in how they describe the basis for their understanding of the main impacts of the fishery on the ecosystem in stating that the MRAG assessment team relies on the fact that *“the main impacts of the fishery on the ecosystem can be inferred from ‘specific research related to trawl impacts on habitat structure and function.’”* The evidence that the CAB relied on as the basis for understanding the main impacts were actually *“inferred from the stock assessments (for most fished species), QMS catch trends, observer data, and surveys that cover the target species, related species, as well as specific research related to trawl impacts on habitat structure and function”*, which is both a much broader and a more comprehensive suite of considerations. This is described in more detail in DWG’s Response 8 (above).

WWF’s complaint about a lack of studies investigating trawl frequency on benthic habitats, ignores the increasing numbers of studies around the world on the relationships between trawl intensity and benthic impacts by internationally respected scientists, including by Kaiser, Hiddink, and Hilborn. For the Chatham Rise fisheries, there is very specific and detailed ecological monitoring, based on the 22 year time series of research trawl surveys, that can be used to assess any potential impacts fishing might be having on a wide array of fish species (both commercial and non-commercial). The results from analyses of these data, to date show no demonstrable linkages between fishing effort (or catches) and the population sizes and abundances of the wide array of other by-catch fish species (see O’Driscoll, 2011). This matter is also traversed in DWG’s Response 8 (above).

WWF also raises a number of concerns about other potential impacts. Specifically, they raise concerns about cumulative habitat impacts due to other fisheries, as well as historic impacts from orange roughy fisheries in earlier years, climate change, ocean acidification, and pollution. Such concerns, while they may be of environmental interest, are either peripheral to, or are outside of the scope of V1.3 of the MSC FCR. For example, V1.3 restricts the fishery evaluation to the current fishery only, so the CAB is not permitted to consider any potential impacts that could be attributable to other fisheries.

Reference: O’Driscoll, R.L., MacGibbon, D., Fu, D.; Lyon, W., Stevens, D.W. (2011). *A review of hoki and middle depth trawl surveys of the Chatham Rise, January 1992–2010*. New Zealand Fisheries Assessment Report 2011/47.

## DWG's Response to DSCC's Objection

The objection by the Deep Sea Conservation Coalition, Greenpeace New Zealand, Bloom Association, and Environment and Conservation Organisations of New Zealand (DSCC) replicates many of the concerns also raised by WWF.

DWG does not repeat responses here to each of the points of objection raised by DSCC, instead we refer the IA to our responses earlier this submission, as made to the same matters raised by WWF.

DWG specifically responds below to those objections raised by DSCC where these are materially different from the matters raised by WWF.

### DSCC: Post-dated Information – Simmons *et al.* (2016)

DSCC argue that the information contained in a recently released report by Simmons *et al* 2016, which reconstructs historical catches from the New Zealand region between 1950 and 2010, should have been taken into account by the MRAG assessment team

### DWG's Response 21

The report by Simmons *et al* was not released prior to the PCDR, was not available to the Client or to the CAB, and thus should not be included in the current assessment.

If this document was both available and likely to materially affect the outcome of the assessment, why did no stakeholder raise this with the CAB prior to the objections period?

DWG suggests that it may be appropriate for the CAB to review this document during the first surveillance audit of these fisheries, if the CAB deems it to be relevant to the assessment.

DWG understands the internal memorandum referred to by DSCC is a confidential internal MPI document reporting on a trial study of on-board cameras to assess their possible use in surveillance on a small number of inshore vessels, none of which are represented by DWG or are fishing for orange roughy. The information is not relevant to the larger offshore vessels that fish in the three orange roughy fisheries under assessment here.

DWG also suggests that it is unreasonable to expect the Client or the CAB to know of, or to find such documents if they are not publicly available, not relevant to the UoAs or are confidential to third parties (in this case to MPI). The inclusion of the confidential memo in the 'Simmons' report is presumably related to the observation that two of his co-authors were engaged in this trial study while employed by MPI.

Having subsequently reviewed the 'Simmons' report, DWG does believe that its contents would have made, or will make, a material difference to the assessment of the sustainability of these three orange roughy fisheries. We arrive at this view because the core of the Simmons report is about allegations of large unreported historical catch, almost all of which predates the period of assessment.

Additionally, while there may be unreported catch in all fisheries, the critical issue is: Does any unreported catch get appropriately considered, estimated and included in the stock assessment and management decisions in such a way as to ensure sustainability is maintained? For each

of these three UoA this does occur. An estimation of unreported catch (in particular to provide for burst bags and for catch overruns, which were not uncommon in the early years of orange roughy fishing) is specifically considered over the history of each fishery and is included as catch removals from each stock in the stock assessments. For these three fisheries, historically the unreported catch was estimated to be 30% in the early years and, in more recent years, to be 5% (MPI 2015 Plenary; Cordue 2104b).

#### **DSCC: Procedural Error #5 Default tree: clarification changes intent at SG100**

*DSCC argue that “it is inconsistent of the CAB to use the SG100 guidepost from the new standard (or use a “clarification” that has the same effect). This action does not follow MSC rules. CABs are not allowed to swap trees after the start of the assessment (27.8) - certainly not at this late stage in the process. This unfair action made a material difference to the scoring of PI 2.4.2.”*

#### **DWG’s Response 22**

The decision tree was not changed as stated.

The guidance issued by MSC for V1.3 of their FCR has grown over time. This has occurred in response to issues and problems that have arisen. New guidance issued by MSC from time to time that affects specific issues is intended to inform and to direct assessment teams to produce the correct certification outcome and help promoted consistency in assessments.

It would be inappropriate for a CAB not to follow the current guidance as issued by the MSC.

#### **DSCC: Additional Procedural Error #11 Apparent bias and predetermination**

*DSCC argue that “the CAB consistently adopted an interpretation favourable to the clients, and ignored or misinterpreted relevant science. The DSCC objection detailed a number of instances where the assessment took a cheerleading approach rather than dispassionate analysis (e.g. page 46). Other instances of bias appear in page 34, where it was shown that the issue is where the bottom trawlers are fishing, not where they are not fishing, and that arguments that the vast majority of the SPRFMO Convention Area (>98%) is not fishable, being deeper than 2,000 m are entirely beside the point”.*

#### **DWG’s Response 23**

DSCC purports, as an example, that unfishable deep water areas are not relevant to the sustainability of these fisheries. DWG refutes this. In terms of ensuring that sufficient habitat remains in a pristine or near pristine condition, and consistent with the MSC requirement for the CAB to consider the full range of the habitat, all areas of habitat including those that that lie outside of the fishery must be considered. These fisheries seldom orange roughy deeper than 1,200m, thus all of the relevant habitat area deeper that 1,200m will be virtually un-impacted by fishing in these UoAs and beyond. Specifically, some of the coral species are found much deeper than 1,200m and thus these deep water areas of habitat are important reserves for these species and their associated habitat.

The MSC requires that the full extent of a habitat is considered. If areas are not fished they represent areas of habitat protection. The precise reason or reasons why an area remains unfished is not considered relevant within the MSC Standard. For example, in the USA West Coast limited entry groundfish trawl fishery, considerable area is closed to bottom trawling to prevent capture of relatively uncommon, long-lived rockfish species. An unintended consequence of this by-catch measure is that about half of the fishery area has complete closure to bottom trawling and thus a substantial proportion of the habitat is protected from damage ([https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/pacific/us\\_west\\_coast\\_limited\\_entry\\_groundfish\\_trawl/assessment-downloads-1/20140602\\_PCR\\_V2\\_GRO223.pdf](https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/pacific/us_west_coast_limited_entry_groundfish_trawl/assessment-downloads-1/20140602_PCR_V2_GRO223.pdf)). The MSC approach is about the outcome, in this case in terms of habitat protection from fishing impacts, whether it is protected by specific, intended measures (e.g. BPAs), specific unintended measures (e.g. marine mammal exclusion zones), or by other process (e.g. too shallow, too deep, too rough, too steep) is not material.

DSCC appears to be unaware of this.

In this matter, it is clear that the CAB not only fully considered the issues in coming to their conclusions but that those conclusions are consistent with the decisions by other CABs presented with similar issues.

Further, it is not clear to which document DSCC is referring. However, there are no international requirements on national administrations relating to either habitat or to ETP corals relevant to these fisheries. There are international requirements on habitat and VMEs relevant to the SPRFMO Convention Area. In response, SPRFMO has developed specific management measures to address these needs. Specifically, SPRFMO has measures in place that protect both habitat and VMEs. These measures include, closing the vast majority of the Convention Area to bottom fishing; restricting bottom fishing to a proportion of the historic fishery footprint (about half); implementing 'move-on-rules' to protect potential VME areas, which include the lowest VME taxa trigger catch thresholds and a biodiversity presence component; 100% observer coverage for all bottom trawling activity. This suite of interim measures have, to date, been considered broadly adequate to meet the international obligations of this RFMO by the members and Cooperating Non-contracting Parties to SPRFMO, especially considering the scale of the fisheries concerned.

Both the CAB and DWG gave serious consideration to the comments provided by all stakeholders at all stages of the assessment process, including the written comments on the PCDR by members of DSCC and by WWF. The CAB's responses in their Final Report to stakeholder comments are evidence of this, including the changes they made to some of their scores.

#### **DSCC: Error of Condition Setting #1 – Condition 1 (PI 1.1.1b)**

DSCC argue that, for the ORH 3B ESCR fishery, *“It is unreasonable that a fishery which has been depleted by fishing would be certified as sustainable”*. They submit that fishing should stop until sound stock assessments show the fishery to be above scientifically derived target reference points, that the proposed condition would mean that an overfished fishery (with a status below what are already unsound reference points) would be certified and that the condition would do nothing to achieve the result of improved performance.

## DWG's Response 24

As provided in the Final Report and as is fully referenced (including in MPI published documents), all three of these fisheries have peer-reviewed stock assessments accepted as meeting the New Zealand Ministry for Primary Industries' Science and Research Information Standard, which is required to be met before the scientific information can be used to inform fisheries management advice and decisions.

The limit reference point and target reference point range for the three fisheries under assessment were scientifically defined using state of the art methods, peer-reviewed and accepted by MPI and were tailored to meet the MSC FCR.

A catch limit has been subsequently implemented for ORH 3B ESCR that has resulted and will continue to result in the growth of the stock biomass towards the mid-point of the Management Target Range. As has been pointed out by both DSCC and WWF, orange roughy are considered to be a slow growing, low productivity species and as such changes in the biomass will likely be slow also. Given the underlying biology, the timeframe for this continued growth in biomass is appropriate.

Current management measures are more precautionary than the scientific advice (e.g. implementation of a catch limit that is lower than that resulting from the HCR). Simulations on the 2014 stock assessment using the current catch limits estimate the ORH 3B ESCR stock size will have increased to above the lower bound of the Management Target Range by 2016 (i.e. will now be >30% B<sub>0</sub>).

If the managers or fishery do not deliver the required changes, then these will be apparent at the annual surveillance audits and be subject to additional Conditions, as and where appropriate.

## DSCC: Error of Condition Setting #2 – Condition 2 (PI 2.3.1b)

*DSCC argue that “This condition will allow damage to coral species to continue until the end of the certification period. It is unreasonable that a fishery damages ETP coral would be certified as sustainable. Fishing should stop until there are no significant adverse impacts on vulnerable marine ecosystems, as is required by the 2009 FAO Guidelines.”*

## DWG's Response 25

There is no requirement, either in New Zealand legislation or in the MSC FCR that a fishery must have no impact on ETP species. To expect no impacts is unreasonable, unachievable and outside of the MSC FCR. Thus, while some on-going impacts on ETP species are permitted under the MSC FCR, such impacts must not be on a scale that results in serious or irreversible harm to the ETP population(s).

DWG believes that the spatial management approach implemented in New Zealand fully meets the needs of ensuring that ETP corals are adequately protected but that monitoring has yet to demonstrate this with sufficient certainty to satisfy the CAB.

This condition will force the fishery to demonstrate that it does fully meet the MSC sustainability criteria within the period of the certification, as is provided for under the FCR, especially for such difficult and challenging work programmes. As noted in DWG's response to WWF's objection

on this issue, the principal test as worded in the CR is about uncertainty and this Condition is specifically focused on addressing that need.

### **DSCC: Error of Condition Setting #3 – Condition 3 (PI 2.3.3b)**

DSCC argue that *“This condition acknowledges that there is insufficient information to determine whether the fishery may be a threat to protection and recovery of ETP coral species. It should therefore not be certified. Fishing should stop until there are no significant adverse impacts on vulnerable marine ecosystems, as is required by the 2009 FAO Guidelines.”*

### **DWG’s Response 26**

The CAB found, supported by substantial evidence that there was sufficient information to *“qualitatively estimate the fishery related mortality of ETP species”*. The CAB then assessed that there is insufficient information available (i.e. analysed) to *“allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species”* that would in turn provide sufficient certainty to meet the requirement of SI 2.3.1b that *“Direct effects are highly unlikely to create unacceptable impacts to ETP species.”*

The requirement is to demonstrate that the level of performance meets the MSC FCR. This can be delivered either by improving performance, where necessary, or by evidencing that the current performance does in fact meet the Standard. This Condition will result in the fisheries either demonstrating that their current performance meets the Standard or, if that cannot be demonstrated to the satisfaction of the CAB, to find ways of improving the performance.

### **DSCC: Error of Condition Setting #4 – Condition 4 (PI 3.2.5)**

DSCC argue that *“There is no measurable improvement or outcomes (using quantitative metrics) expected each year; there is no specific timeframes over which the milestones and the whole condition must be met and there is no outcome and score that shall be achieved at any interim milestone. As such it is unreasonable.”*

### **DWG’s Response 27**

The MSC requirement is that *“The fishery-specific management system is subject to regular internal and occasional external review.”* This Condition requires to the fishery to do exactly what the MSC requirement seeks.

The required external review has already been commissioned and DWG expects the results to be available for the CAB’s consideration at the first annual surveillance audit and for the requirements of this Condition to be met at that time. As such DWG see this Condition as both reasonable and able to be closed within a short timeframe.

### DSCC: Scoring Issues - PI 1.2.3

DSCC argue that *“The CAB made a mistake as to a material fact (as detailed) ... failed to consider material information put forward in the submissions of Greenpeace, DSCC and ECO ....and that.... the scoring decision was arbitrary or unreasonable...and that these... errors are material as they go to the heart of sustainability.”*

### DWG’s Response 28

DWG notes DSCC’s objection in reference to the HCR is made under the performance indicator, PI 1.2.3. However, this is not correct and should be PI 1.2.1.

The matters raised here by DSCC have been largely addressed in DWG’s response to WWF’s objection on this matter. However, a few further specific and relevant comments are provided below:

- The Peer Reviewer comments were addressed by the CAB.
- Observer coverage has been lower than is desirable due to other more pressing surveillance needs and the recognition that, as exclusively domestic fisheries, orange roughy fisheries are considered relatively low risk. With new legislation requiring all vessels fishing New Zealand waters to be New Zealand flagged from 1 June 2016 and with the reduction in the number of deepwater vessels, the level of observer coverage in these three orange roughy fisheries is expected to increase.
- There has been a history of long-term planning of research and management in New Zealand’s deep water fisheries. A budget and resourcing constraint within MPI in December 2014 resulted in a temporary suspension of the implementation of a second 10 year research and monitoring programme that had been consulted on. During the 2015-16 and 2016-17 years the scientific monitoring and assessment projects contracted for orange roughy fisheries align with the projects in this second programme. The long-term planning process is again underway with the objective of re-instating a second 10 year programme from 2017-18. Refer to the letter from MPI.
- The target reference point (TRP) is a Management Target Range (i.e. 30% to 50%), as has been appropriately determined (see DWG’s response to WWF). The TRP range for hoki (i.e. 35% to 50%) is based on economic criteria (optimal catch rates and hoki sizes in the catches) not solely on biological criteria, so any comparison is inappropriate.
- MPI’s Harvest Strategy Standard proposes default reference point in the absence of stock specific information. It has been superceded by the MSE and the resultant HCRs for the three orange roughy fisheries under assessment.
- The MSE conducted for the three orange roughy fisheries represents the best science to inform the selection of management reference points, with the outputs being peer-reviewed and accepted by MPI as being fit for use in managing these fisheries. Comparison to the reference points selected for krill and for other low trophic level species is inappropriate as orange roughy is not a low trophic species.
- DWG and MPI are working together to ensure that the annual catch limits and catches are consistent those in the HCRs, as determined in the MSE.
- The catch limits set for the 2014-15 fishing year and the resulting catches are shown in Table 1. In all three fisheries the annual catches, and the actual fishing mortalities, were below those assessed in the HCRs (see Figure 1).

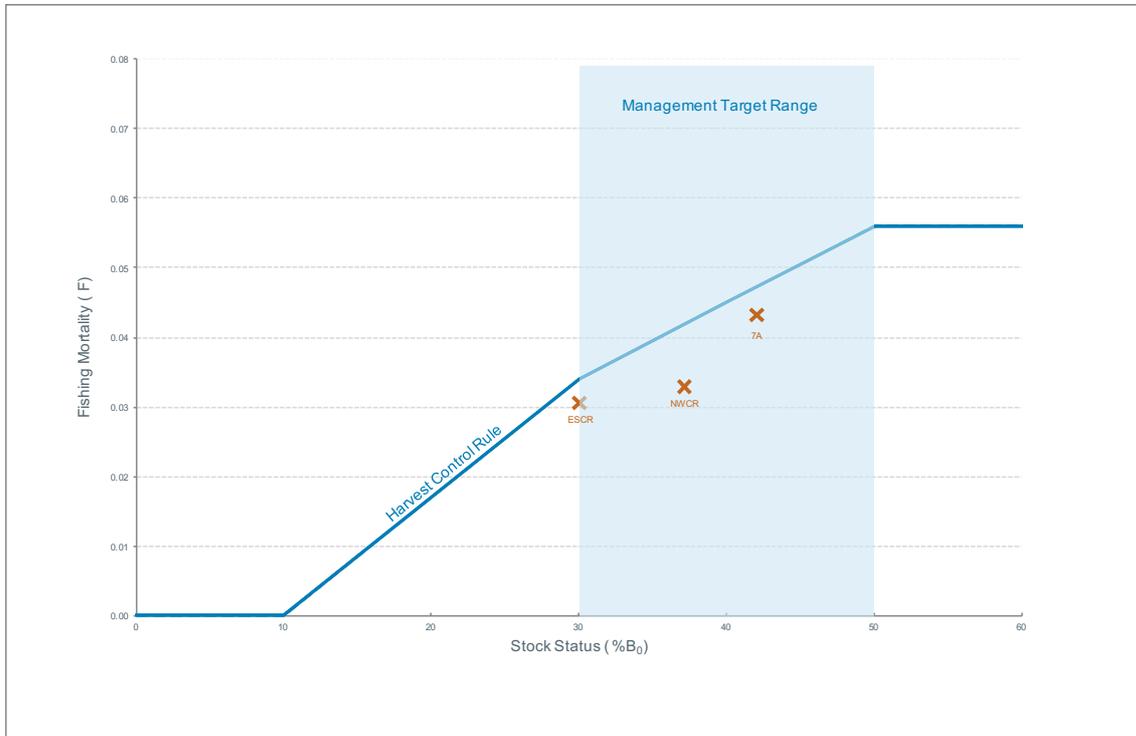
- The same catch limits have been set for the 2015-16 fishing year.

In summary, the catch limits implemented for each of the three orange roughy UoA have been deliberately set at, or below, the HCR-generated catch limits for precautionary reasons:

- For ORH 3B ESCR the catch limit was set below the HCR level to promote an increased rate of stock size rebuilding. DWG notes that:
  - The 2014-15 catch was 105% of the catch limit as is provided within the QMS (i.e. all catches are managed to be within 110% of the catch limit or the TACC in any year);
  - Forward projections from the 2014 stock assessment estimates the stock size in 2016 to be within the Management Target Range (i.e. to be >30% B<sub>0</sub>); and
  - During 2016 a further biomass survey is being undertaken on this stock (as well as on the ORH 3B NWCR stock) and the results will be used to inform new stock assessments in 2017
- For ORH 3B NWCR the Minister set a catch limit of 1,250 tonnes prior to the results of the MSE and HCR analyses being available. In order to meet the requirements of the HCRs, ORH 3B quota owners have agreed to collectively set aside (or to 'shelve') 207 tonnes of ACE to effect the lower catch limit derived from the HCR of 1,043 tonnes
- For ORH 7A the Minister set a TACC of 1,600 tonnes prior to the results of the MSC and HCR analyses being available. ORH7 7A quota owners have collectively agree to limit catches to within the 1,600 tonne TACC rather than to seek the 1,748 tonne limit derived from the HCR.

**Table 1 Harvest Control Rule generated catch limits, MPI-DWG agreed catch limits and catches for the 2014-15 fishing year for each orange roughy UoA.**

UoA	B <sub>2014/B0</sub>	HCR Catch (t)	Agreed Catch Limit (t)	2014-15 Catch	
				tonnes	% HCR
ORH 3B ESCR	29.6%	3,772	3,100	3,269	86%
ORH 3B NWCR	37%	1,043	1,043	824	79%
ORH 7A	42%	1,748	1,600	1,594	91%



**Figure 1: The fishing mortalities provided by 2014-15 catches against the HCR**

### DSCC: Scoring Issue – PI 2.3.3

DSCC raise a range of issues, which they contend are relevant and which the MRAG assessment team has not considered. These include:

- Information collection and the variable presence of MPI scientific observers on vessels in recent years.
- The current status of the deepwater management plan is unclear, as is the commitment to deepwater research given the end of the Deepwater Research strategy.
- There is no population management plan for protected species and the provisions of the Wildlife Act and the Marine Mammals Protection Act have been found impossible to implement to limit the impact on ETP species.
- There is no strategy for most ETP species. The exceptions are the National Plan of Action on Sharks and Seabirds but these have yet to be fully implemented.
- There is no strategy for marine mammals capture or benthic species including corals.
- The BPA is not a strategy to protect corals rather it is a strategy to avoid protecting corals as they were established in areas where little or no fishing was taking place and most was much deeper than trawling depths.
- Significant damage is caused to vulnerable marine ecosystems by bottom trawling.

In doing so DSCC argue that the CAB has made material mistakes, did not properly consider the submissions of Greenpeace, DSCC and ECO, made scoring decisions that no reasonable

CAB could have reached and that these errors are material as they go to the heart of sustainability.

### DWG's Response 29

As has been well documented in their Final Report and in their responses to stakeholder comments, the CAB has determined that there are clear, implemented strategies with respect to managing the impacts of fishing on habitats and ETP species using a spatial management concept delivered through a range of different specific tools.

With a substantive proportion of habitat and associated ETP corals in areas that are not and cannot be fished with bottom trawls, the likelihood of these fisheries causing serious or irreversible harm is very low.

While scientists and managers will always seek more information to increase the confidence that they have in their decisions, this does not mean that information is necessarily inadequate.

New Zealand, despite its comparatively large EEZ has a considerable body of information relating to ETP corals, including a substantial fishery observer dataset; complementary fishery independent datasets from regular fisheries research surveys and from irregularly benthic focused research surveys; spatial modelling of habitat and coral occurrence; coral genetic studies, etc.

Reference to marine mammals and to seabirds is irrelevant as these UoAs do not interact with these groups to any meaningful extent.

### DSCC: Scoring Issue – PI 2.5.1

DSCC argue that the CAB has misinterpreted the requirements for this PI and have, as a result, incorrectly scored it above 60.

DSCC note for a score of 60, the CAB would have to find that *“The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm”* noting that CB 3.17.3 explains that the CAB *“should note that “key” ecosystem elements are the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics, and are considered relative to the scale and intensity of the fishery. They are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity.”*

### DWG's Response 30

DWG does not believe that the CAB *“misinterpreted this to mean ecosystem services related to orange roughy”*. During the extended period for this assessment there were repeated discussions about the impact on fisheries removals on the wider ecosystem, including predator-prey linkages (Dunn, 2013), the ecosystem modelling conducted by NIWA (see Pinkerton 2008 and 2011), monitoring mesopelagic fish abundance (O'Driscoll et al., 2011a) and benthic and benthic-pelagic fish biomass (O'Driscoll, et al., 2011b), all of which are reported and discussed in the Final Report.

New Zealand and Australian arrangements under the SPRFMO Convention and the approaches taken with respect to managing and monitoring benthic impacts are neither controversial nor unilateral. The approaches taken by both countries under the interim arrangements necessitated by the SPRFMO Convention were submitted to scrutiny, discussed and agreed by the members of SPRFMO.

Under SPRFMO, the New Zealand implemented 'move-on-rule' as intended to provide some protection for potential VMEs which applies to about half of the currently open New Zealand footprint, not the 30% stated by the Objector (MFish, 2008). The Australian 'move-on-rule' applies to all Australian bottom fishing, so overall the proportion is that rather more than half of bottom fishing is subject to a move-on-rule in SPRFMO.

The analysis of Penney & Guinotte (2013) did find that the arrangement of protection for potential VMEs under SPRFMO was sub-optimal. They did not determine that the approach was flawed, or that the current implementation was not working, just that it could be better. Given the workload that this RFMO has, its resources and the rate at which RFMOs typically respond to serious issues, expecting any change to these arrangements between 2013 and the date of the PCDR is unreasonable.

If we accept the summary figure given by the Objector that 54.6% the seabed area in the SPRFMO region at depths between 200m and 800m is open to bottom fishing, then 45.4% of the seabed between these depths is closed to bottom fishing and is, thereby, completely protected. Moreover, just because 54.6% of the area, approaching 24,000 km<sup>2</sup> is open for fishing, does not mean that this entire area is fished. In fact, a quick review of the scale of the SPRFMO fishery shows that only a very small proportion of this open area is in fact fished. For example, during the period 2012-14 Australia had either one or two bottom trawlers operating in SPRFMO. During the same period New Zealand had either eight or nine bottom trawlers operating. This equates to less than 700 tows per year for the whole fishery, which can only have covered a tiny amount of the available 24,000 km<sup>2</sup>.

The strategy to manage fishing impacts on habitats and ETP corals is a spatial one. It is recognised that where fishing occurs there may well be an impact but that overall that impact will be small and will be less than would cause serious or irreversible harm to habitat structure and function.

It is DWG's view that the CAB considered all of these different elements and presented a coherent argument in their Final Report. While DSCC may not agree with the outcome, DWG sees little to criticise the CAB in the performance of its work and the conclusions that they came to for this PI.

References: [Dunn \(2013\) \*Ecosystem Impacts of Orange Roughy Fisheries\* \[Unpublished Report prepared for Deepwater Group\] DWG Website.](#)

[O'Driscoll, R.L.; Hurst, R.J.; Dunn, M.R.; Gauthier, S.; Ballara, S.L. \(2011a\). \*Trends in relative mesopelagic biomass using time series of acoustic backscatter data from trawl surveys\*. New Zealand Aquatic Environment and Biodiversity Report No. 76.](#)

[O'Driscoll, R.L.; MacGibbon, D.; Fu, D.; Lyon, W.; Stevens, D.W. \(2011b\). \*A review of hoki and middle depth trawl surveys of the Chatham Rise, January 1992–2010\*. New Zealand Fisheries Assessment Report 2011/47.](#)

[Pinkerton, M.H. 2008. \*Preliminary trophic model of the Chatham Rise\*. NIWA unpublished report.](#)

Pinkerton, M.H. 2011. *A balanced trophic model of the Chatham Rise, New Zealand*. NIWA [http://www.niwa.co.nz/sites/niwa.co.nz/files/chatham-model\\_32.pdf](http://www.niwa.co.nz/sites/niwa.co.nz/files/chatham-model_32.pdf).

MFish 2008. *Bottom Fishery Impact Assessment. Bottom Fishing Activities by New Zealand Vessels Fishing in the High Seas in the SPRFMO Area during 2008 and 2009*. 102pp. Retrieved from: <http://www.sprfmo.int/assets/Meetings/Meetings-before-2013/Scientific-Working-Group/SWG-06-2008/a-Miscellaneous-Documents/New-Zealand-Bottom-Fishery-Impact-Assessment-v1.3-2009-05-13.pdf>.

Penney AJ, Guinotte JM (2013) *Evaluation of New Zealand's High-Seas Bottom Trawl Closures Using Predictive Habitat Models and Quantitative Risk Assessment*. PLoS ONE 8(12): e82273. doi:10.1371/journal.pone.0082273.

## **DSCC: Concern Expressed on Timelines of Certification**

### **DWG's Response 31**

This assessment took a relatively long time, partly due to the complexities of these fisheries and partly due to the amount of information that is available and was considered. There is no reason why this should require assessment under v2.0 of the Certification Requirements. The assessment of these three fisheries under v1.3 is fully in accord with the MSC FCR.

## **Notice of Intention to Adjudicate**

**IN THE MATTER OF OBJECTIONS TO THE FINAL REPORT  
AND DETERMINATION ON THE PROPOSED CERTIFICATION OF THE NEW  
ZEALAND ORANGE ROUGHY FISHERIES UNDER THE MSC  
PRINCIPLES AND CRITERIA FOR SUSTAINABLE FISHING**

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**NOTICE OF DECISION TO PROCEED TO ADJUDICATION**

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1. The Notices of Objection were received on June 3, 2016, and they were accepted on June 20, 2016. The Notices of Objection were posted on the MSC website on June 20, 2016 (the “date of publication”).
2. In accordance with CD 2.5.1 of the Objections Procedure, the conformity assessment body (the “CAB”) was required to reconsider the Final Report and Determination in light of the matters raised in the Notices of Objection and provide a written response within a period of 20 working days from the date of publication. Pursuant to this provision, such a response was received on July 18, 2016. In addition, in accordance with CD 2.4.7, there was a period of 15 working days from the date of publication for “the fishery client(s) or any stakeholder that participated in the fishery assessment process” to submit written representations on the matters raised in the Notices of Objection. Such written representations must be taken into account by the CAB in providing its response under CD 2.5.1.2. Pursuant to this provision, such representations were received from the fishery client on July 12, 2016.
3. The submission of the CAB’s response triggered the ten (10) day consultation period under Section 2.5.3 of the Objections Procedure. Pursuant to the June 29, 2016, directions of the Independent Adjudicator, the objectors were requested to indicate by July 21, 2016, whether the responses of the CAB and the fishery client “provide any reasonable basis for exploring an acceptable solution to the whole or any part of the objections.” In an e-mail of July 21, 2016, objector, WWF, stated its views that the parties were “far apart on the issues of substance raised by the objection,” while objector, the DSCC Group, in a communication of the same date, stated that it did *not* believe that there was “any reasonable basis for exploring an acceptable solution to the whole or any part of the objection.”
4. Based upon the responses of the objectors, it is my judgment that there is not at this time a “real and imminent prospect of reaching a solution that is acceptable to all relevant parties.” Of course, there is nothing that should prevent the parties from discussing at any time the possibility of a voluntary resolution of the objections, and they are encouraged to consider holding such discussions, if they believe they might be fruitful.

Accordingly, pursuant to Section 2.5.5 of the Objections Procedure, I now formally determine that “some or all of the issues raised in the notice[s] of objection cannot be resolved through consultation.” This decision constitutes my notification to the parties that I intend to proceed to adjudication under Section 2.6. Under Section 2.6.1, the oral hearing is to be convened within thirty (30) days of this notification, “unless the parties to the objection agree otherwise.”

5. I have consulted with the MSC and the parties, as well as my calendar, in an effort to set an appropriate hearing date. In particular, on July 22, 2016, I issued a Notice Regarding Consultation Process and Hearing Logistics soliciting the parties’ views regarding the timing and venue for a hearing. After consideration of those views, I issued a Further Inquiry Regarding Hearing Logistics on July 26, 2016, consulting further with the parties about the logistics of a hearing. Finding a mutually acceptable hearing date and venue has taken a considerable effort; it has been difficult to accommodate the schedules of all parties; and a number of possible dates have proved infeasible. Moreover, there is much to be said for holding a hearing either in New Zealand or England, and the difference between the two is not easily resolved. Based upon this consultation, however, I have determined that an oral hearing shall be convened in London, England, on October 24, 2016, and continue through October 25, 2016, as necessary. I understand that these dates, while later than the CAB and fishery client would have liked, are acceptable to all parties. The precise venue of the hearing will be at the MSC Global Headquarters, Marine House, 1 Snow Hill, London EC1A 2DH; tel.: +44 (0) 20 7246 8900. I anticipate that no more than two days would be required for the hearing.
6. The oral hearing is contingent on two factors. First, under Section 2.6.1 of the Objections Procedure, an oral hearing is not necessary if the parties agree otherwise. Should the parties notify me that they do not wish an oral hearing, I will proceed to rule on the objections based upon the record before me. Second, under Section 2.9.4 of the Objections Procedure, within ten (10) days of this notification, or by August 11, 2016, there must be agreement between the objectors and the MSC regarding liability for costs or a waiver of such liability must be granted by me. Under Section 2.9.8, without such agreement or waiver, the objections “shall be considered to have been dismissed.”
7. Assuming that the hearing goes forward as scheduled, the parties are to use their best efforts to agree to the contents of a bundle of documents for the hearing on these objections, to include the record of the assessment, the Notices of Objection, and all submissions provided to and all correspondence with the Independent Adjudicator to date, in accordance with the arrangements set out below. Please note that the CAB need only supply the written record of oral, written or documentary evidence submitted in the assessment process that relates to the matters under challenge in the objections. The parties are reminded that, under CD 2.10.1.3, “[t]he working language of the MSC is English,” and documents must be in English, or submitted with an English translation, in order to be considered.
8. The first draft of the index of the bundle is to be prepared by the CAB and served on the objectors and the fishery client by August 26, 2016.

9. By September 9, 2016, the objectors and the fishery client are to notify the CAB whether there are any additional documents that they wish, respectively, added to the bundle and to supply a copy of such documents to the CAB if so requested.
10. A consolidated version of the index and the bundle is to be prepared by the CAB and forwarded to the objectors and the fishery client by September 23, 2016. A final version of the bundle is to be lodged with the Independent Adjudicator by the same date. The bundle should be paginated for ease of reference, so that at the hearing everyone is working from the same page of referenced documents.
11. In accordance with Section 2.6.4 of the Objections Procedure, the fishery client, the objectors and the CAB may submit additional or supplementary written representations on the matters raised in the Notices of Objection or in the written representations submitted by the other parties under Section 2.4.7 of the Objections Procedure. All such written representations must be submitted not later than five (5) days before the date set for hearing, or by October 17, 2016.
12. PowerPoint and projection facilities will be available at the hearing. Any material which the parties would like to project must be provided to the MSC at least two days prior to the hearing, or by October 20, 2016.
13. If a party does not use PowerPoint, that party is encouraged to submit a written outline of its argument not later than one day prior to the hearing, or by October 21, 2016, to assist in its presentation and the noting down of its oral submissions.
14. The parties are reminded that the General Provisions of CD 2.10 apply to the service and submission of documents.
15. The scope of and procedures governing the oral hearing are set out in Section 2.6 of the Objections Procedure. I commend these provisions to the parties. Section 2.6.3 contemplates that I may promulgate additional rules of procedure, and I anticipate that in due course I will do so.



Eldon V.C. Greenberg  
MSC Independent Adjudicator

Dated: July 28, 2016

## **Independent Adjudicator Directions**

# **Objections to the certification of New Zealand Orange Roughy fishery-**

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## **Change of Independent Adjudicator**

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This notice is further to objections received by the Marine Stewardship Council dated 3 June 2016 from WWF Smart Fishing Initiative and a coalition of Deep Sea Conservation Coalition, Greenpeace New Zealand, Environmental and Conservation Organizations of New Zealand and Bloom Foundation to the proposed certification of the New Zealand Orange Roughy fishery.

This notice is to inform parties and stakeholders that there is to be a change in Independent Adjudicator dealing with these objections. Due to unforeseen personal circumstances, it has become necessary for me to withdraw from these objections and Eldon Greenberg, one of the other Independent Adjudicators will be taking my place.

As the objections are currently awaiting the response by the certification body and I have not had to deal with the determination of any substantive issues, it is to be hoped that this will not cause any inconvenience.

Any matters relating to these objections will from this date on be dealt with by Eldon Greenberg.

**Melanie Carter**

**Independent Adjudicator**

**12 July 2016**

## **Independent Adjudicator Decision**

**IN THE MATTER OF OBJECTIONS TO THE FINAL REPORT  
AND DETERMINATION ON THE PROPOSED CERTIFICATION OF THE NEW  
ZEALAND ORANGE ROUGHY FISHERIES UNDER THE MSC  
PRINCIPLES AND CRITERIA FOR SUSTAINABLE FISHING**

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**DECISION OF THE INDEPENDENT ADJUDICATOR**

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**I. INTRODUCTION.**

1. This matter comes before me as an Independent Adjudicator for the Marine Stewardship Council (the “MSC”) in connection with two Notices of Objection (the “NOOs”), one filed by the WWF Smart Fishing Initiative and WWF New Zealand (collectively, “WWF”) and the second filed by Greenpeace New Zealand, the Deep Sea Conservation Coalition, Bloom Association Sand Environment and Conservation Organisations of New Zealand (collectively, the “DSCC Group”) against the proposed certification of the New Zealand orange roughy fisheries (the “subject fishery”) pursuant to the terms of the MSC’s Principles and Criteria for Sustainable Fishing (the “MSC Principles”). WWF and the DSCC Group (sometimes referred to collectively herein as the “objectors”) are all non-profit, non-governmental organizations that promote the conservation of marine resources.

2. In accordance with the MSC’s fisheries certification regime, the Deepwater Group Ltd. (“DWG” or the “fishery client”) entered into the MSC full assessment process on May 27, 2014, seeking certification of the New Zealand Orange roughy fisheries conducted in the Southwest Pacific Ocean, FAO Statistical Area 81, primarily within the New Zealand Exclusive Economic Zone (the “EEZ”). The fishery, which utilizes bottom trawls at depths of 750-1100 meters to target orange roughy (*Hoplostethus atlanticus*), has three “units of assessment” (“UoA”) under the MSC certification scheme: ORH3B Northwest Chatham Rise (“UoA 1” or “NWCR”); ORH3B East and South Chatham Rise (“UoA2” or “ESCR”); and ORH7A Challenger Plateau (“UoA 3”) or “7A”).<sup>1</sup> In the periods 2008-2009 and 2012-2013, eighteen vessels, all registered in New Zealand, ranging in size from 26 meters to 62 meters, and with hold capacities ranging from 112 cubic meters to 1000 cubic meters, participated in the fishery. The fishery is managed collaboratively by the New Zealand Ministry for Primary Industries (“MPI”) and DWG under the fishery laws of New Zealand, particularly the Fisheries Act of 1996, with areas outside the EEZ subject to management measures adopted by the South Pacific Regional Fisheries Management Organization (the “SPRFMO”). In 2013-2014, the commercial catch amounted to 3039 tons for UoA 1, 811 tons for UoA 2 and 497 tons for UoA 3. Product is primarily marketed in the United States, Australia, China and France.

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<sup>1</sup> These may be sometimes referred to herein as “Units of Certification” or “UoCs”. See Sections 27.4.2, 27.4.3 of Version 1.3 of the Certification Requirements.

3. On June 17, 2014, the MSC confirmed that the assessment would be carried out by a team from an accredited conformity assessment body, MRAG Americas, Inc. (the “CAB” or “MRAG”). The assessment was thereafter conducted by the CAB. Consistent with the MSC’s requirements, the process included site visits, utilization of peer reviewers and stakeholder involvement. On January 26, 2016, MRAG issued a draft report for public comment. A revised version was subsequently issued on February 4, 2016. The public comment period closed on February 29, 2016. Following receipt of public comment, the CAB issued a Final Report and Determination (the “Final Report”) on May 12, 2016. The Final Report was published by the MSC on the same date. The Final Report found that the subject fishery, measured against the MSC’s scoring guideposts (“SGs”), “attained a score of 80 or more against each of the MSC Principles and did not score less than 60 against any Indicators,” in accordance with the MSC’s applicable Certification Requirements (Version 1.3, adopted January 14, 2013) (the “CR”).<sup>2</sup> See Final Report, Section 6.4, p. 112. Accordingly, the Final Report recommended that, subject to certain conditions set out in Appendix 1.2 thereof, the subject fishery be certified as a sustainable fishery in accordance with the MSC Principles. *Id.* The Final Report is the subject of the present objections.

4. Pursuant to the MSC’s Objections Procedure set out in CR Annex CD (the “Objections Procedure”), on June 3, 2016, the objectors timely filed NOOs to the Final Report. On June 20, 2016, my predecessor as the Independent Adjudicator determined that both NOOs were admissible, and, on the same date, the MSC posted the NOOs on its website. June 20, 2016, thus became the “date of publication” for purposes of various timelines set out in the Objections Procedure. Following such publication, in accordance with Section 2.4.7 of the Objections Procedure, the fishery client submitted a memorandum on July 12, 2016, responding to the NOOs, and, in accordance with Section 2.5.1, the CAB provided its response on July 18, 2016.

5. The submission of the CAB’s response triggered the ten (10) day consultation period under Section 2.5.3 of the Objections Procedure. In accordance with my predecessor’s directions of June 29, 2016, both objectors, WWF and the DSCC Group, responded to the request that they advise the MSC “whether they consider that . . . [there is] any reasonable basis for exploring an acceptable solution to the whole or any part of the objections.” WWF, in an e-mail dated July 21, 2016, indicated that it viewed the parties as “far apart on the issues of substance raised in the objection,” while the DSCC Group, in a communication of the same date, stated that it did not believe that there was “any reasonable basis for exploring an acceptable solution to the whole or any part of the objection.” Based on these communications, in a Notice issued on July 22, 2016, I determined that a mutually agreeable resolution of the objections was unlikely and initiated consultations with the parties regarding hearing logistics. Subsequently, on July 28, 2016, I formally concluded that there was not a “real and imminent prospect of reaching a solution that is acceptable to all relevant parties.” Therefore, in accordance with Section 2.5.5 of the Objections Procedure, I determined that “some or all of the issues raised in the notice[s] of objection cannot be resolved through consultation” and formally notified the parties that I intended to proceed to adjudication under Section 2.6 of the Objections Procedure.

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<sup>2</sup> Version 1.3 of the CR has been superseded by Version 2.0 of the CR (adopted October 1, 2014). Whether Version 2.0 should have been used by the CAB is at issue in this proceeding and is discussed, *infra*, at paragraphs 25-28.

6. Based upon my consultations with the parties, a hearing date was set for October 24 and 25, 2016, in London, England. On September 29, 2016, the CAB duly filed an agreed bundle of documents consisting of the record upon which this adjudication is based. This record included, *inter alia*, in accordance with Section 2.6.5.1a. of the Objections Procedure, the written record of oral, written or documentary evidence submitted in the assessment process related to the matters under challenge, including any scientific literature referenced in the Final Report. Thereafter, on October 17, 2016, in accordance with CD 2.6.4, WWF, the fishery client and the CAB submitted “additional or supplementary written representations.” The DSCC Group did not make such a submission.<sup>3</sup>

7. The hearing was held at the MSC Global Headquarters in London, England, on October 24 and 25, 2016. It was convened at 10:00 am on the 24<sup>th</sup> and concluded at approximately 12:15 pm on the 25<sup>th</sup>. All parties fully availed themselves of the opportunity to present their case, utilizing either detailed PowerPoint presentations or, in the case of the DSCC Group, a detailed written outline. The resolution of these objections has been greatly facilitated by the well-articulated and thorough argumentation of the parties in their briefing and at the hearing.

## II. STANDARD OF REVIEW.

8. Before turning to the substance of the objections, it is necessary to consider the standard of review to be applied. The standard is narrow, and deference to the determinations of the CAB is appropriate. *See, e.g., In re: Russian Sea of Okhotsk Midwater Trawl Walleye Pollock Fishery*, ¶¶ 8-11 (MSC, June 19, 2013); *In re: Germany Lower Saxony Mussel Culture and Mussel Dredge Fishery*, ¶¶ 9-12 (MSC, September 23, 2013); *In re: Echebstar Indian Ocean Purse Seine Skipjack, Yellowfin and Bigeye Tuna Fishery*, ¶¶ 9-12 (MSC, August 21, 2015). Review is not *de novo* and is akin to judicial review of administrative action under basic principles of English and American administrative law. That said, deference is not slavish, and a thorough, searching and independent review must be undertaken by the Independent Adjudicator. Ambiguous provisions, in particular, as WWF has suggested in this proceeding, are to be interpreted in light of the purpose of the MSC certification scheme to ensure that the public can rely upon the sustainability of labeled seafood product. *See In re: Sustainable Swordfish LLC U.S. North Atlantic Longline Fishery*, ¶ 45 (MSC, December 11, 2014).

9. The purpose of the Objections Procedure is “to provide an orderly, structured, transparent and independent process” by which objections can be resolved. The function of the Independent Adjudicator is to examine the claims made in a notice of objection and to make written findings as to whether the CAB made an error of the sort described in Section 2.7.2 of the Objections Procedure. Only if such an error can be identified, may the determination be remanded back to the CAB for reconsideration. More specifically, the Independent Adjudicator is required to issue a decision in writing either confirming the determination by the CAB or remanding the determination.

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<sup>3</sup> On October 20, 2016, the DSCC Group did submit a detailed, 57-page “outline” of its oral presentation. Although DWG objected that this effectively was a backdoor, late filing of supplemental representations, I nonetheless provisionally allowed it at the hearing, pending the DSCC Group’s presentation. Because that presentation did in fact substantially track the outline, I now formally determine that it was properly submitted.

10. Under Section 2.7.2 of the Objections Procedure, a remand can only be ordered where the Independent Adjudicator determines that one or more of the following circumstances applies:

CD 2.7.2.1. There was a serious procedural or other irregularity in the fishery assessment process that made a material difference to the fairness of the assessment; or

ACD 2.7.2.1. The setting of conditions by the CAB in relation to one or more performance indicators cannot be justified because the conditions fundamentally cannot be fulfilled, and the condition setting decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it; or

CD 2.7.2.2. The score given by the CAB in relation to one or more performance indicators cannot be justified, and the effect of the score in relation to one or more of the particular performance indicators in question was material to the outcome of the determination, because either:

- a. The CAB made a mistake as to a material fact; or
- b. The CAB failed to consider material information put forward in the assessment process by the fishery or a stakeholder; or
- c. The scoring decision was arbitrary or unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.

CD 2.7.2.3. It is necessary to remand the determination in order to enable the CAB to consider additional information described in CD 2.6.5.2 and described in the notice of objection. In such a case, the remand shall be limited to a request to the CAB to consider the impact of the additional information on its original determination and to provide a response in accordance with CD 2.8.2.

Under CD 2.7.2, the Independent Adjudicator has no discretion to remand the determination for any reason not set out in such Section and, thus, in all other circumstances, the determination of the CAB must be confirmed.

11. CD 2.6.5 and 2.6.6 further provide that:

CD 2.6.5. The Independent Adjudicator shall evaluate objections solely on the basis of:

CD 2.6.5.1. The record, which shall include and be limited to:

- a. The final report of the CAB and the record on which the final report was based, including written submissions and reports provided to the CAB during the assessment process, the written record of oral,

written or documentary evidence submitted in the assessment process, as well as any other evidence referenced or cited in the final report;

- b. The notice of objection;
- c. Any written representations submitted pursuant to CD 2.4.7 and CD 2.6.4;
- d. Any representations made by any party at a hearing pursuant to these procedures;
- e. Other clarifications required by the Independent Adjudicator;

CD 2.6.5.2. Any additional information, not forming part of the record, that is relevant to matters accepted in the notice of objection and the circumstances at the date of the scoring of the fishery that:

- a. Was known or should reasonably have been known to any party to the assessment process, and
- b. Should reasonably have been made available to the CAB during the assessment process, and
- c. If considered, could have made a material difference to the outcome of the assessment;

CD 2.6.5.3. The MSC Principles and Criteria for Sustainable Fishing; and

CD 2.6.5.4. The MSC Certification Requirements current at the time of the assessment in question, together with the Guidance and amendments thereof made by the MSC Technical Advisory Board and the Board of Trustees, any related interpretations to these documents whether or not of mandatory effect with regard to CAB conformity made by the MSC Executive and ASI.

CD 2.6.6. The Independent Adjudicator may not consider issues not raised in the notice of objection, even if the Adjudicator is of the view that a particular issue should have been raised. In no case shall the Independent Adjudicator substitute his or her own views or findings of fact for those of the CAB.

In this record review process, as long as there is no serious procedural irregularity and the CAB has not made a mistake as to a material fact, ignored material information or acted arbitrarily or unreasonably in awarding scores or devising conditions, the Independent Adjudicator may not set the conclusions of the CAB aside and instead must uphold the CAB's determination and recommendations. *Per contra*, where such violations have occurred, the matter must be remanded to the CAB under CD 2.7 and 2.8, and, under CD 2.8.2, the CAB must "respond in writing to the matters specified in the remand," indicating either "no change" in relation to the

scoring of PIs (CD 2.8.2.1), proposed changes to the justification for a score or “a change in the score in relation to any of the performance indicators” (CD 2.8.2.2).

### III. GROUNDS FOR THE OBJECTIONS.

12. As set out in the NOOs, the objectors mount a wide array of challenges to the Final Report. The objectors assert more than three dozen separate grounds for objection. Indeed, there is little in the Final Report that they find satisfactory. This is perhaps not surprising. As Greenpeace (a member of the DSCC Group) advised the CAB in a communication of July 20, 2014, at least some of the objectors have had a longstanding “interest[] in ensuring that the poster child for overfishing, destructive fishing methods and fishery collapse is \*not\* certified as sustainable.” First, the DSCC Group (though not WWF) argues that there are several pieces of “new information” that should have been considered by the CAB, thereby establishing a claim under CD 2.7.2.3 and CD 2.6.5.2. Second, both objectors identify what they consider to be numerous procedural irregularities in the assessment process, thereby establishing a claim under CD 2.7.2.1. Third, the objectors challenge the scoring of a number of “Performance Indicators” (“PIs”), thereby establishing a claim under CD 2.7.2.2. Fourth, the objectors contend that several conditions for the UoCs, individually and collectively, are insufficient, thereby establishing a claim under ACD 2.7.2.1. I will deal with each of these contentions in turn. Before I do so, however, a word needs to be said about the overall thrust of the objectors’ case and the defense arrayed against it by the CAB and the fishery client.

13. WWF, it is fair to say, views the entire certification effort as problematic. WWF considers that orange roughy is a long-lived, slow growing and late maturing species, with the result that it is especially vulnerable to overexploitation. At the same time, it stresses that the heavy, bottom trawling gear used in the orange roughy fisheries has severe direct and indirect impacts on benthic and coral habitat, and, in that context, it underscores that benthic habitats are highly diverse, characterized by fragile, slow growing species, and that recovery of ecosystems such as cold water coral reefs from the effects of bottom trawling can take many years, so that such effects are, for all practicable purposes, irreversible. It weaves five themes throughout its presentation: that the CAB has not properly assessed the “proportionality” of the fishery’s impacts; that the assessment process was less than fully “transparent;” that the CAB failed to separate properly “fact and opinion;” that the Final Report accepted “inadequate measures;” and that the CAB failed to account for “uncertainty.” The dominant metaphor is that the CAB basically put its “thumb on the scale” in assessing the evidence, so as to favor of certification.

14. For its part, the DSCC Group is somewhat more diffuse, if no less adamant in its objections to certification. It, too, however, basically accuses CAB as acting as a “cheerleader” for the subject fishery rather than as an objective assessor of its sustainability. It directs its attention especially to the temporal and spatial dimensions of the fishery, paralleling WWF’s “proportionality” argument. With respect to the status of the stocks, it strongly urges that the fisheries, which were once depleted, are not fully recovered and are beset with major uncertainties concerning their current and future status. The past is effectively prologue, in the view of the DSCC Group, and one positive stock assessment in 2014 is not enough to rely upon to conclude that the fisheries are sustainable. Concurrently, the DSCC Group, like WWF, emphasizes what it considers to be the serious and irreversible impacts that the fisheries have on bottom habitat and especially protected species of coral.

15. The CAB and the fishery client, of course, view things quite differently. In their view, while overfishing occurred in the past, the fisheries are currently well managed in accordance with good science and prosecuted at sustainable levels. DWG thus contrasts the “first fifteen years” of the fisheries (1986-2000), marked by low stock status (10%-25% B0), high exploitation rates (greater than 15%) and high catch levels (up to 47,000 tons) and limited biomass surveys and stock assessment (mostly trawl; deterministic recruitment), with the “second fifteen years” of the fisheries (2000-2015), marked by higher stock status (30%-43% B0), much lower exploitation rates (0%-5%), low levels of by-catch (less than 5%), substantially lower catch levels (approximately 6000 tons) and science that includes acoustic biomass surveys and models estimating recruitment from age data. They rely upon a 2014 stock assessment. See MPI, *Fisheries Assessment Plenary* (2014) (“MPI 2014a, b, c, d”); Cordue, *The 2014 orange roughy stock assessments* (New Zealand Fisheries Assessment Report, 2014) (“Cordue 2014a”). They characterize the assessment as professional and well-conducted and one which outside observers have found to be “relatively good,” supporting the conclusion that “the fisheries have all reduced to a level where the current catches are highly likely to be sustainable.” See Dunn, *Review of New Zealand orange roughy stock assessments* (June 3, 2014) (“Dunn 2014”). While they acknowledge that any impact on coral, especially, is “too much,” and while they admit that trawl contact may destroy coral aggregations, they stress that the “reasonably low proportion of the area trawled” means that a reasonably low proportion of the area is impacted, urging that attention must be given to impacts of the fisheries on a “bioregional” rather than a localized scale. Indeed, DWG points out that in excess of 90% of the orange roughy range is either closed or unfished for all three UoCs, while, in the broader “Kermadec Bioregion,” more than 99% of the area is closed or unfished. In these circumstances, they argue that, whatever local harm the fisheries may cause, the overall impact of fisheries is highly limited.

16. In the context of this proceeding, it is not my job to sort out who is right or wrong on substance. Whatever the merits of the arguments, both pro and con, about the nature of the fisheries and their impacts, and these arguments are weighty, my decision in this matter must, as stated in paragraphs 8-11 above, be limited under the terms of the Objections Procedure to more narrow questions relating to the procedural regularity of the assessment process and the “rationality” of or support for the CAB’s determinations.

#### **A. Admissibility of Documents and Informational Contentions.**

17. Questions surrounding whether various documents should have been considered by the CAB received substantial attention from the parties in this proceeding. These questions related both to the admissibility of documents either cited or not cited by the objectors in comments submitted to the CAB during the assessment process and to the validity of the DSCC Group’s “new information” contentions. Both categories of documents are addressed below.

18. First to be considered are documents which have been cited by the parties in submissions to the CAB during the assessment process, for example in comments on the Public Comment Draft Report (the “PCDR”). These documents have been identified by the DSCC Group in a very helpful chart categorizing all the documents of concern, and to which neither the CAB nor DWG have taken issue. Simply stated, there is no reason, in my judgment, why these should not be considered admissible and properly part of the record. If the public comment process is to have any meaning, documents brought to the attention of the CAB through that

process presumptively ought to have been considered by the CAB. *See generally In re Aker Biomarine Antarctic Krill Fishery*, ¶¶ 21-23 (MSC, April 21, 2010). The only limitation applicable in this regard is that the documents themselves must predate the PCDR. *See In re: 3 Ps Atlantic Cod Fishery*, ¶ 14 (MSC, February 24, 2016).

19. A second category of documents are those tentatively included in the record bundle but not cited by the objectors in their submissions to the CAB during the assessment process. Documents in this category typically have been cited by the objectors in the NOOs, though I exclude from this category documents which are the subject of “new information” claims. Pointing to CD 2.6.5.1b., the objectors argue that anything cited in the NOO should be considered admissible and properly part of the record. I don’t buy this argument. Accepting it would essentially mean that “new information” contentions under CD 2.6.5.2 and CD 2.7.2.3 would be reduced to meaningless surplusage. I conclude that the mere citation of documents in the NOO is insufficient to bring them within the record, and they are not admissible.

20. Finally, there are three documents which the DSCC Group claims constitute “new information”: (a) Gianni, *et al.*, *Protecting ecologically and biologically significant areas (EBSAs): Lessons learned from the implementation of UN resolutions to protect deep-sea biodiversity* (IMARES Report No. C061/12, 2012) (“Gianni 2012”); (b) Levin, *et al.*, *Hydrothermal Vents and Methane Seeps: Rethinking the Sphere of Influence*, 3 *Frontiers in Marine Science*, May 19, 2016 (“Levin 2016”); and (c) Simmons, *et al.*, *Reconstruction of marine fisheries catches for New Zealand (1950-2010)* (2016) (“Simmons 2016”). Each stands in a slightly different posture.

21. DSCC claims that Gianni 2012 is relevant in particular to its contentions under PI 2.3.1 and 2.5.2. It predates the PCDR, which wasn’t published until January 26, 2016, and so it does not run into admissibility hurdles on that ground. To be admissible, it also must be “relevant to the matters accepted in the notice of objection” and potentially have made a “material difference to the outcome of the assessment.” *See* CD 2.6.5.2, 2.6.5.2c. The CAB contends that this report need not be considered because it “offers no further or different perspective or interpretation than other papers” and that information on Vulnerable Marine Ecosystems (“VMEs”) is “not relevant to fisheries under CR v.1.3,”<sup>4</sup> and the fishery client argues it deals with the fundamentally different issue of managing global fisheries and is, in any event, outdated. I am not persuaded by these arguments that Gianni 2012 would necessarily be outside the bounds. I think, however, it runs against a more fundamental obstacle. While CD 2.6.5.2 and CD 2.7.2.3 might be more artfully written, I do not think they can reasonably be interpreted to allow an “additional information” objection to be asserted for a document that was “known or should reasonably have been known” to an objector during the PCDR comment process or that “[s]hould reasonably have been made available to the CAB” during that process. Otherwise, the rules would create a perverse incentive for an objector to hold back critical information during the comment process and then dump that information on the CAB in its NOO so as to attack the Final Report for its lack of consideration thereof. This would be neither sensible nor fair. There is no explanation why the DSCC Group did not cite Gianni 2012 in its

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<sup>4</sup> VMEs are not a category used in New Zealand for fishery management purposes, except to the extent they are part of the SPRFMO management system.

comments on the PCDR (or even earlier), and none can be inferred. Accordingly, I conclude that this report is not admissible.

22. Levin 2016 is in a different category. It is not, as I read the DSCC Group NOO, the subject of a specific informational objection. However, under CD 2.6.6, I may not consider a contention not included in the NOO. *See In re: Sea of Okhotsk Midwater Trawl Walleye Pollock Fishery, supra*, ¶ 41. I interpret this provision to mean that there must be a freestanding contention related to a potential “new information” document; mere mention in passing in the context of other objections is not sufficient. In any event, even if Levin 2016 were subject to a freestanding contention, it was not released until May 19, 2016. In other words, it post-dates the PCDR, and, on that basis alone, it is inadmissible. *See In re: 3Ps Atlantic Cod Fishery, supra*, ¶ 14. Thus, to the extent the DSCC Group may be considered to have asserted a contention regarding this report, it is rejected.

23. Finally, in light of what has just been said, Simmons 2016 is readily dealt with. While the report has properly been raised as a contention in the DSCC Group’s NOO, it was released in May 2016 and so plainly post-dates the PCDR. Consequently, unless I find some exception to the *3Ps Atlantic Cod Fishery* rule, it cannot be a valid basis for an objection. I have previously rejected the DSCC Group argument that mere citation of a report in an NOO (as Simmons 2016 has been cited in support of the DSCC Group’s contention under PI 3.1.1) is sufficient to overcome the admissibility hurdle. I further find, in the context of this case, that the facts that a draft of the report may have been in circulation prior to the date of PCDR and that the industry in New Zealand may have been aware that a report was in the works are not enough to avoid the timeliness problem.<sup>5</sup> I believe that there is a need for a bright line rule regarding the admissibility of documents, and the date of the publication of the PCDR provides that bright line.<sup>6</sup> Consequently, the DSCC Group’s informational contention with respect to Simmons 2016 is rejected. As the CAB suggests, the relevance of Simmons 2016 to certification of the fisheries can properly be dealt with in the first annual surveillance audit.

## **B. The Objectors’ Procedural Irregularity Challenges.**

24. The objectors assert, as noted above, numerous procedural objections pursuant to CD 2.7.2.1 to the conduct of the assessment. Several of these issues might properly be considered mainly to relate to scoring, *viz.*, contentions that the CAB misinterpreted and misapplied the definition of “serious or irreversible harm” (“SOIH”) and failed to take a “complete historical perspective” or properly consider the capacity of the ecosystem to deliver “ecosystem services” in its assessment of the fisheries. Ordinarily, the correct course would then be to treat these objections under the scoring rubric. *See, e.g., In re Greenland Cod, Haddock and Saithe Fishery*, ¶¶ 13, 14 (MSC, March 27, 2015) (noting that procedural irregularity claims relate to fairness in the process, not scoring itself). However, because these “procedural” claims of the objectors have cross-cutting effects and are relevant to several different PIs, it makes sense in this case to deal with them upfront, and I will do so.

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<sup>5</sup> That Simmons 2016 refers to an earlier, 2013 “internal” MPI memorandum also doesn’t avoid the problem. One would not know about that memorandum until the Simmons 2016 report itself was released.

<sup>6</sup> Notably Version 2.0 of the CR makes it clear that actual information must be in existence prior to the positing of the PCDR in order to be admissible. *See* PD 2.6.5.2.

**i. Version 1.3 vs. Version 2.0 of the CR.**

25. A threshold issue in this matter is which version of the CR should have been used to assess the fishery. The DSCC Group claims that the assessment should have been conducted using CR v.2.0, not CR v.1.3. It notes that there was a more than nine month delay between the site visits, which occurred in the summer of 2014 and ended in early August of that year, and publication of the PCDR in late January 2016. It points to sections 7.3.3-4 of CR v. 2.0, as well as to the MSC Guidance regarding implementation of timeframes, which specify that, for fisheries which have begun the assessment process prior to the effective date of CR v. 2.0, where there is such a pause between the site visits and PCDR publication, “FCR v.2.0 (process and standard) shall be applied.” If CR v. 2.0 had to be applied, of course, this would require a remand of the entire assessment. There are two major problems, however, with the DSCC Group’s contention.

26. First, I do not believe the contention was properly raised. Reference to use of CR v. 2.0 is simply tacked on to the end of the DSCC Group’s discussion of scoring issues. It is not set forth as a freestanding, separate procedural objection. Yet, as noted above, *see* paragraph 22, *supra*, this is what I believe CD 2.6.6 of the Objections Procedure requires. For this reason alone, I don’t believe that DSCC Group’s claim is cognizable in this case.

27. Second, and in any case, it is apparent that the CAB did adhere to the requirements of CR v. 1.3 to ensure that there was no unfairness resulting from the pause between the site visits and publication of the PCDR. As required by CR 24.2.3.1, the CAB submitted a letter within 5 days of the nine month deadline (on May 1, 2015) indicating its intention to review any “new information,” and thereafter, on May 13, 2015, in accordance with CR 24.2.3.2, a 30-day window was opened for stakeholders to submit such new information bearing, *inter alia*, on whether this information should be assessed according to the most recent version of the CR. Apparently, no such information was submitted by stakeholders, including members of the DSCC Group. Therefore, the CAB was justified in determining that the assessment could proceed in accordance the CR v. 1.3. Accordingly, I do not believe that there was a procedural error “that made a material difference to the fairness of the assessment” within the meaning of CD 2.7.2.1.

28. In the circumstances, the DSCC Group’s arguments regarding which version of the CR should have been used are not well taken, and I decline to hold that the CAB should have applied CR v. 2.0 in its assessment of the orange roughy fisheries.

**ii. Serious or Irreversible Harm.**

29. Both WWF and the DSCC Group claim that there was a “serious procedural or other irregularity” in what they characterize as the misinterpretation and misapplication of the definition of SOIH. The argument basically relates to WWF’s theme of proportionality and is relevant in particular to PI 2.4.1. In simplest terms, the argument, as WWF explains, might best be understood in terms of a fraction in which the numerator represents the footprint (in space and time) of the fishery and the denominator represents the footprint (in space and time) of potentially affected habitat. All parties, as noted above, acknowledge that bottom trawling may cause damage to habitat. The critical question is the scale of such damage. Obviously, varying

either the numerator or the denominator can have significant consequences for the assessment of harm. If the numerator is expanded and the denominator is shrunk, harm can appear to be very great. By contrast, if the numerator is shrunk and the denominator is expanded, harm can appear to be limited. WWF's and the DSCC Group's argument is that the CAB basically conducted its assessment so as to tilt the scale in favor of concluding that SOIH did not occur in the fisheries.

30. Under the CR, CB 3.14.2.1, "Serious harm means gross change in habitat types or abundances, and disruption of the function of the habitats." Per CB 3.14.2.2, "Irreversibility means changes that are expected to take much longer to recover than the dynamics in un-fished situations would imply, some sort of regime change is implied from which recovery may not automatically occur." CB 3.14.3 specifies, "The team shall consider the full extent of the habitats when assessing the status of habitats and impacts of fishing, and not just the part of the habitats that overlap with the fishery." Guidance found at GCB 3.2 and 3.14.2 expands on the definition, while the Guidance relating to the scope of habitat, GCB 3.14.3, states, "For example, if a habitat extends beyond the area fished then the full range of the habitat should be considered when evaluating the effects of the fishery. The 'full range' of habitat shall include areas that may be spatially disconnected from the area affected by the fishery and may include both pristine areas and areas affected by other fisheries."

31. WWF asserts that there is "an abundance of scientific evidence to support the determination that the fishing method used by the subject fishery causes 'irreversible harm' to deep sea habitats." It argues that the CAB misapplied the definition of SOIH by (a) not considering trawl impacts over the history of the fishery, (b) drawing "a very large perimeter" around habitats so as to encompass the whole Kermadec bioregion, (c) presuming that the system for delineating and mapping habitats is accurate, (d) using estimates of trawled or untrawled areas relative to total habitat to derive the percentage of impacted habitat, and (e) failing to adduce quantitative evidence to establish the "true status" of habitats. At the hearing, WWF elaborated on these points, complaining that the CAB used an "oversimplified method to evaluate SOIH," assuming the pristine nature of non-impacted areas, not properly accounting for uncertainty of measurement, wrongly assuming a "steady-state" for the trawl footprint, not considering that uncertainties are magnified by long habitat recovery times, and resting its assessment on "an untested assumption that risk of SOIH is directly (linearly) related to impact area." Its actions, so WWF's argument goes, "expanded the denominator" and "shrank the numerator." The net result was to "distort[] the proportion of impact to favor the fishery" and "fail[] to adequately consider the 'irreversibility' of habitat impacts."

32. DSCC, too, advances the argument that the CAB was misguided in its approach to determining whether SOIH could be found. It repeatedly challenges what it characterizes as the "drop in the ocean" and "'don't look here; look over there' approach in minimizing benthic damage." It cites scientific papers demonstrating harm that can result from trawling for orange roughy; it takes issue with the utilization of the Kermadec bioregion (which it terms "unreasonable"); and it points out that other scientists have indicated that a far smaller scale, *e.g.*, the quota management scale, would be more appropriate, citing Boyd, *et al.*, *Assessment of*

*ecological effects of four New Zealand orange roughy fisheries* (August 21, 2013) (“Boyd 2013”).<sup>7</sup>

33. The CAB’s response is basically straightforward. Exercising its expert judgment, it concluded that “the scale of the management area is substantially greater than the scale of damage to habitats.” It affirms, with respect to the appropriate timeframe, it was reasonable to rely primarily upon the most recent five years of data, because this “more closely matches the current activity,” and the purpose of the assessment is to “assess current likelihood of the fishery to cause harm.” With respect to space, the CAB underscores that the Kermadec region is well-defined, and it explains that habitat distribution maps for the region provide a reasonable degree of precision. DWG, for its part, makes the point “that the scale of the trawl footprint is so small, compared to the size of the benthic habitat and the widespread distribution of corals, that any impact of bottom trawling simply cannot be large enough to cause any serious or irreversible impact to the structure and function of the benthic habitat and ecosystem.”

34. Ultimately, I don’t believe that the CAB has either misinterpreted or misapplied the definition of SOIH. The CAB did focus on impacts on the “structure and function” of habitats. The use of these words does seem to go beyond a focus on just individual sections of habitat. And the CAB is instructed by the MSC to consider the “full range of habitat” when conducting its assessment. Moreover, in applying the definition, the CAB made a series of judgments, based upon its scientific expertise, related to the status of the ecosystem and the spatial and temporal scope of the fisheries and their impacts. It is not my place to second-guess those judgments, even if the substantive arguments of the objectors might be persuasive were I reviewing this matter *de novo*. It seems to me that objectors’ complaint comes down to one about the weight of the evidence and the judgments that the CAB formed regarding that evidence. The rule is clear that when it comes to the weight of the evidence and judgments made about that evidence, deference must be given to the determinations of the CAB. *See, e.g., In re: Northwest Atlantic Canadian Longline Swordfish Fishery*, ¶¶ 17 (vi), (vii), (xi), (xii) (MSC, February 3, 2012).

### iii. The Historical Perspective.

35. The next procedural objection, relevant particularly to PIs 2.4.1, 2.3.1 and 2.5.1, goes to the CAB’s view of historic data. It is closely related to the previous objection. WWF contends that the CAB underemphasized “the historical record of trawl impacts to deep sea habitat,” particularly by focusing on the last five years of data. WWF relies upon CB 3.2.2, which provides, “The team shall consider both the current outcome status and the resilience of historical arrangements to function adequately and deliver low risk under future conditions when scoring outcome PIs.” WWF makes the point that “excluding the historic extent of fishing impact will tend to exaggerate the proportion of habitat which is thought to be protected with spatial closures,” and result in overestimating the level of protection afforded to protected corals within the New Zealand EEZ. It asserts, “It is apparent from the conclusions of a recent report that was a primary source for the assessment that MRAG’s approach is contrary to scientific

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<sup>7</sup> At the hearing, the CAB took the position that this report did not provide the right framework for assessing ecosystem impacts and was inconsistent with the MSC’s call to consider effects on a regional or bioregional basis. In general, Boyd 2013 also agreed that the risk of SOIH to by-catch species, habitat and the ecosystem was low.

advice,” citing Clark, *et al.*, *Assessment of orange roughy and oreo trawl footprint in relation to protected coral species distribution* (NIWA Client Rep. No. WLG2014-56, February 2015) (“Clark 2015”).

36. The CAB’s response is that CB 3.2.2 “does not mean that the team must consider the past to determine the current status.” It points to guidance language in the MSC Interpretations Log, which states that “current stock status is scored in the outcome PIs for both P1 and P2.” It stresses that it used the last five years of data because “activity of this fishery in the more recent past more closely matches current activity” and “the outcome PI is clearly designed to assess current likelihood of the fishery to cause harm.” DWG further explains that the CR, on its face, does not require any specific timeframe to be considered and that the decision of timeframe to use is left to the discretion of the MSC.<sup>8</sup>

37. The CAB judgment is one to which deference is due. I don’t read the CR as rigidly informing timeframes to chosen, and the MSC Interpretations Log confirms that it is the current fishery and its impacts which must be the focus of the assessment. Further, the weight given by the CAB to one scientific paper or another will not be disturbed. Consequently, this element of the objections must fail.

#### **iv. Confidentiality of Key Scoring Information.**

38. WWF, noting that MRAG’s assessment is based in part on the argument that the area affected by trawling can be predicted “because the fishery tends to operate along ‘established tow lines,’” claims that the CAB relied on “un-published key information” – confidential tow-by-tow data – in reaching its conclusion and that such an approach lacked transparency – another major theme of its objections – and was contrary to MSC requirements, particularly CR 24.5.1, which requires un-published key information to be made available to stakeholders for their review. The objection is readily dealt with.

39. WWF’s claim is based on an incorrect cross-reference in the CR. CR 24.4.2 reads that, “unless covered in 24.5.1,” certain information that cannot be shared with stakeholders may not be referenced in an assessment or used in determining an assessment outcome. CR 24.5.1 provides that “un-published key information” *must* be made available to stakeholders. The language of these two clauses would thus seem to create a problem for the CAB if it were using confidential tow-by-tow data.<sup>9</sup> However, on October 3, 2016, the MSC issued an Interpretation to the effect that the cross-reference in CR 24.4.2 is incorrect. According to the MSC, the correct cross-references should be to CR 24.4.3 and 24.4.4, which indicate information which *cannot* be shared with all stakeholders, even under terms of confidentiality. Notably CR 24.4.3 covers “data subject to relevant national privacy or data protection legislation in the client’s country.” There no dispute that the individual tow-by-tow data in the orange roughy fisheries fall in this category of documents protected by New Zealand law. I am in no position to adopt a

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<sup>8</sup> DWG also notes that the CAB, even while focusing on the last five-year period, did consider data relating to the footprint of the fishery over a twenty-year period.

<sup>9</sup> DWG questions, it should be noted, the extent to which confidential information has been used by the CAB, remarking that the Final Report does not refer to such information, and affirming that there was considerable other evidence in the record confirming that vessels in the fisheries commonly use established tow lines.

different reading of the rules. Accordingly, I conclude that it was permissible for MRAG to withhold these data. This head of the objections must therefore be rejected.

#### **v. Separating Fact From Opinion.**

40. The objectors claim that MRAG failed clearly to separate fact from opinion with particular reference to PI 2.3.1. This is indeed one of WWF's central themes in this proceeding.<sup>10</sup> It cites Section 4.4 of the MSC Code of Conduct which calls for such a demarcation in assessment reports and CR 6.1.1.1 which requires the CAB to comply with the Code of Conduct. WWF asserts that the CAB "placed their own team's views in front of the opinions of leading experts," and, had fact and opinion been clearly demarcated, "the disparity between the team's view and that of prevailing scientific opinion would have been laid bare." The objectors underscore what they characterize as the experts' view regarding potential impacts on deep sea corals as distinguished from MRAG's view. In essence, they accuse the CAB of "cherry-picking," choosing to emphasize evidence favorable to its conclusions while downplaying other evidence.

41. WWF expanded on this argument at some length in its supplemental submissions and at hearing. For example, it points to Clark 2015 and claims that the CAB was substituting its own opinion regarding the proper timeframes to use in the assessment for those of "leading experts in the area." It likewise critiques the CAB for not accepting Boyd 2013 in deciding to use the Kermadec bioregion for assessment purposes rather than the smaller New Zealand quota management scheme area. And, WWF claims that, despite expert opinion to the contrary, the CAB "failed to account for restricted depth distribution of corals in assessing the degree of protection afforded by closed areas." WWF charges that MRAG's analytical approach obscured the logic of its scoring rationales and that its selective use of the scientific record "showed a lack of objectivity" that a CAB must possess.

42. The CAB "denies that it put personal opinion ahead of evidence for any performance indicator." It further points out that it did acknowledge expert views, especially Clark 2015, in discussing indirect trawl effects on corals and carefully distinguished those views. Further, while, for example, the objectors may stress Boyd 2013 concerning the depth distribution of corals, the CAB points out that there is other evidence in record supporting different conclusions, citing Cairns, *The Marine Fauna of New Zealand* (New Zealand Oceanographic Institute, 1991) and Cairns, *The Marine Fauna of New Zealand* (New Zealand Oceanographic Institute, 1995). See Final Report, Section 4.4.5. In short, it provided a justification for its views and for the conclusion that indirect impacts were "unlikely" to be "unacceptable." DWG concurs that the objectors are not only factually wrong but also "the CAB is entitled to form its own opinion on quantitative, factual information." The use of facts, DWG points out, requires judgment, and not everyone draws the same conclusion from the same facts. What matters in the context of the MSC Objections Procedure is that, from a procedural perspective, the approach taken by the CAB doesn't materially affect the fairness of the assessment.

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<sup>10</sup> The DSCC Group, at earlier stages of this proceeding, accused the CAB of "apparent bias and predetermination." At the hearing, however, it confirmed that these contentions have now essentially just been factored into the "fact/opinion" objection.

43. I am not convinced by the objectors' arguments under this head. In my judgment, they are primarily quibbling over judgment calls. The CAB team members are the "experts" for purposes of this proceeding. They must be able to review the evidence and draw their own conclusions. They are not required to defer to other experts, no matter how qualified, as long as they make reasonable and non-arbitrary judgments. The path to the CAB's conclusions may have sometimes been imperfect and not always possess the clarity the objectors would like, but that scarcely means that the CAB was acting in a manner that made a material difference to the fairness of the assessment. I decline to rule in objectors' favor on this ground for objection.

#### **vi. Switching Default Assessment Trees.**

44. WWF argues that, in assessing PI 2.4.2c. related to the management of habitat, MRAG improperly used the standard from CR v. 2.0, without having submitted a variation request to the MSC and that this was improper. Citing CR 27.8, WWF notes that CABs are "not allowed to swap trees after the start of the assessment" and that "there is no published variation request which has been approved by the MSC."

45. The CAB's response is straightforward. It did not apply CR v. 2.0, and so it did not need to submit a variation request. Rather, after considering the language in the particular PI, it sought clarification from the MSC with regard to the approach to be taken to different scoring issues. The MSC clarified what was intended (and in fact corrected the problem in CR v. 2.0). This is all reflected in an MSC Interpretation Log Entry, dated March 15, 2015. In light of the MSC's interpretation, the CAB was also then able to reach its own reasonable conclusions regarding the "co-dependency" of scoring issues and other elements of applicable SGs. There was no procedural error in the sense of using the wrong assessment tree, and thus this element of the objections must fail.

#### **vii. Forest for the Trees: Biogenic Structure.**

46. WWF contends that it was a procedural error, in scoring PI 2.4.1, for MRAG not to "give explicit consideration to how trawling may impact upon the structure of deep water habitat." It points out that "[b]iogenic habitat are extremely vulnerable to physical impacts," but that "the scoring rationale does not give any insight into the spatiotemporal nature of trawl impacts to biogenic structures," nor does the Final Report adequately consider the "potential loss of function that may accompany destruction of topologically complex deep water habitats." The question is essentially whether the CAB needed to consider coral aggregations separately from the remainder of habitat in conducting its assessment and whether it was not enough to consider impacts of corals as a separate matter under a different PI (2.3.1).

47. The CAB responds that, for purposes of assessing habitat impacts, it determined that there were two basic habitat types: "flat seabed on the continental slope" and Underwater Topographic Features ("UTFs"). The CAB states, "We concluded that these UTFs could be considered as one habitat type across this area because they contain similar faunal compositions in terms of benthic epifauna and associated fish and other species," citing Roux, *et al.*, *Summary information of Underwater Topographic Features (UTF) habitat for orange roughy and associated trawl fisheries for orange roughy and oreo species* (NIWA Client Report No. WLG 2014, December 2014). The classification, the CAB argues, provided an appropriate framework

for considering all impacts to habitat structure, expressly including “biogenic epifauna.” The CAB in fact explicitly examined the impact of the fisheries on habitat structure when scoring PI 2.4.1. *See* Final Report, Section 3.4.5 and PI 2.4.1 (Scoring Justification) (assessing fishery impacts on the structure and function of habitat found on UTFs and the continental slope). It could reasonably find on the evidence before it that, given the amount of habitat fished, there would not likely be impairment of the structure and function of the habitat as a whole, certainly to the point of causing SOIH. *See* discussion above at paragraphs 29 to 34. I cannot say that the CAB’s approach of looking to the proportional impact of the fisheries across the full extent of habitat within its two part classification scheme constituted either a procedural error or a scoring error.

#### **viii. Kermadec: The Appropriate Bioregion?**

48 Noting that MRAG adopted the Kermadec bioregion, an area “vastly greater than the New Zealand EEZ,” as “the relevant area across which to assess fishery impacts to habitat,” WWF posits that this approach “distorted or minimized the proportion of the bioregion that appeared to be impacted by the fishery,” affecting the scoring of PIs 2.3.1, 2.4.1 and 2.4.3. It points to recent studies showing that “deep sea community composition varies at far smaller spatial scales . . . and also varies significantly by depth,” citing Clark, *et al.*, *The Ecology of Seamounts: Structure, Function and Human Impacts*, 2 Ann. Rev. Mar. Sci. 253-278 (2010), and Clark, *et al.*, *The impacts of deep-sea fisheries on benthic communities*, 73 ICES Journal of Marine Science i51-i69 (2016). WWF again relies upon Boyd 2013 in claiming that other scientific evidence warranted a more “precautionary stance” in designating the area of habitat potentially affected. The DSCC Group, for its part, calls it “*per se* unreasonable” for the CAB to be “erroneously assess[ing] the fishery as not impacting habitat areas and types that are not fished and even are beyond fishable depth.” The argument about the appropriateness of the Kermadec bioregion for assessment purposes is just another instance of the proportionality or scalar theme of the objectors and has already be discussed to some degree in paragraphs 29 to 34, *supra*.

49. The CAB responds that, contrary to the objectors’ arguments, it hewed closely to MSC requirements and guidance in considering impacts across the Kermadec bioregion. In particular, the CAB relied upon CB 3.14.3 and MSC Guidance GCB 3.14.3 (both of which are quoted in full in paragraph 30 above). Having chosen to adopt the Kermadec bioregion for assessment purposes, the CAB, on the information before it, could properly conclude that “the spatial scale of orange roughy fishing with the UoAs compared with the overall UTF habitat distribution in the NZ EEZ and bioregion is sufficiently small to ensure the impacts will not reduce habitat structure and function to a point where there would be serious or irreversible harm.”

50. The CAB exercised its expert judgment in choosing the Kermadec bioregion as the area of habitat against which to assess the fisheries. In so doing, it followed MSC requirements and guidance. It could decide that other scientific opinion, such as Boyd 2013, should not be controlling. *See* paragraph 32, note 7, *supra*. I cannot find that this amounted to either a procedural error or a scoring error. Accordingly, this head of the objections cannot be sustained.

## **ix. Ecosystem Services.**

51. With specific reference to PIs 2.5.1 and 2.5.2, WWF contends that the assessment team “gave no serious consideration to the question of how the fishery impacts the capacity of the ecosystem to deliver ecosystem services to the component fishery, to other fisheries and to human uses.” The DSCC Group pointedly challenges the asserted failure of the CAB to consider that “ecosystem services” are not exclusively benefits to people.

52. CB 3.17.2 provides, “The team should interpret serious or irreversible harm in relation to capacity of the ecosystem to deliver ecosystem services.” Ecosystem services are defined as “the benefits people obtain from ecosystems.” The definition goes on to state that such services include “provisioning services such as food and water; regulating services such as flood and disease control; cultural services, such as spiritual and cultural benefits; and supporting services, such as nutrient cycling or waste degradation, that maintain the conditions of life on Earth.” GCB 3.17.2 explains at some length what SOIH includes in relation to the capacity of the ecosystem to deliver ecosystem services, mentioning such examples as trophic cascades, depletion of top predators, severely truncated size composition of the ecological community, gross changes in species diversity of the ecological community, or changes in genetic diversity of species caused by selective fishing.

53. The ecosystem component of assessment, as the CAB states, “considers wider system structure and function.” In the context of the orange roughy fisheries, based upon a “body of research on trophic interactions for orange roughy fisheries and trophic models . . . that include orange roughy,” and with reference to the specific examples set out in GCB 3.17.2, the CAB explains, “there is no evidence of loss of functional components or species in the ecosystem or significant changes in the composition of orange roughy prey, predators or competitors.” Given the assessment team’s conclusion that it was “reasonable to regard the ecosystem in question as that over which orange roughy is distributed, which is far larger than the footprint of the fishery within the UoA areas,” the CAB determined that “this fishery alone is sufficiently small as to preclude the possibility of unacceptable impacts at the ecosystem level.” The Final Report may be relatively spare regarding the specific ecosystem services delivered. However, in the discussion of PI 2.5.1, the Final Report gives examples of harm to the ecosystem that would disrupt ecosystem services and concludes that such disruption is “highly unlikely.” I see no basis for second-guessing CAB’s determination, and, under this head of the objections, I find that there was neither a procedural nor a scoring error.

## **x. Change to Unit of Certification.**

54. WWF takes the position that the CAB changed the Unit of Certification for ORH3B ESCR. It claims that this UoC was substantially reduced in size during the course of the assessment. This, it argues, was impermissible, in view of CR 27.4.3, which states that “once defined, the unit of certification cannot be changed during the assessment,” absent submission to and approval by the MSC of a variation request.

55. During the hearing, and consistent with its theory of the need for transparency (and the asserted absence thereof in this assessment), WWF expanded at length on this contention. It explained that, after the initial announcement of the assessment, in September-

October 2014 some stakeholders were notified of a change, based upon a “non-public study of where the boundary should be redrawn,” to the boundary of this UoC. In WWF’s view, the way the CAB handled the change was neither “transparent” nor in accordance with MSC requirements.

56. The consequences of the boundary change are also significant, according to WWF. The changed ORH3B ESCR boundary excludes a very large area from the UoC. In turn, this may have impacted finfish by-catch parameters, most importantly for by-catch of black oreo, for which WWF asserts, there are “significant unknowns” about its status. These uncertainties don’t appear in the Final Report because, due to change in the boundaries of the UoC, it was not evaluated as a main retained species, *i.e.*, it did not meet the 5% threshold for falling within this category. WWF further charges that the change may have influenced the “assessment of benthic impacts (ETP corals, habitats, ecosystems).”

57. The response to WWF’s contention is simple. The public announcement of the assessment did not describe the boundaries of the UoCs in detail. Thereafter, in September and October 2014, communications with stakeholders alerted them to the details of the UoCs. On October 15, 2014, an e-mail notified stakeholders of the final UoC boundaries. As the CAB states, drawing a line that, in its judgment, better defined the UoC (because the orange roughy fishery did not extend into the western area of the South Chatham Rise zone and the boundary as finally drawn covers 99% of the fishery) was a “technical clarification” of the UoC and nothing more. The PCDR defined ORH3B ESCR identically to the Final Report.

58. Most importantly, in my opinion, the MSC subsequently confirmed that the drawing of the final boundaries by the CAB was permissible and did not require a variation request. In an e-mail to the CAB, dated June 30, 2016, the MSC stated, “We agree that the UoC amendments were clarifications of how the UoCs were defined rather than actual changes, therefore not at odds with the MSC’s requirements on UoC changes.” Given this definitive statement by MSC, I cannot find that there was any procedural error in the process related to UoC boundaries, and I reject WWF’s contention in this regard.

#### **xi. Key Information: Description of Fishing Gear and Method.**

59. The final procedural objection in this matter is that the Final Report did not include “key information” relating to the fishing gear and methods used in the fisheries. WWF cites especially CR 24.5, which provides that “un-published key information” must be made available to stakeholders. It further cites MSC criterion B3: “The fishing operations shall implement appropriate fishing methods designed to minimize adverse impacts on habitat.” Finally, it notes that the MSC Full Assessment Reporting Template (v. 2.0, October 8, 2014) contemplates in Section 3.2B. that the report shall include a description of “fishing practices (including configurations of gear(s) used).”

60. The inclusion of this information in the Final Report, WWF affirms, is important to the transparency of the assessment process. WWF, at the hearing, stressed that this information is material because it is “essential for understanding the impact of the fishery on habitats (science);” “fundamental to DWG’s assertion of surgical target fishing (validation);” and “necessary for consumers, where the purpose of awarding certification is to influence members

of the buying public by making promises about the sustainability of the product (transparency).” The DSCC Group points out pertinently that, if the nature of the gear were disclosed, “there may be scope to minimize damage by different design or use of trawling gear.” “Anything less,” says WWF, would be presenting a “sanitized’ account of the fishery.”

61. MRAG and DWG essentially have relatively little in the way of answer to this objection. DWG urges that the gear and method are well-known, “readily available to the general public” and found in many references used to prepare the Final Report. In its view, the objectors’ position is “disingenuous” and “unprincipled.” MRAG, however, while it denies that information has “a material bearing on the outcome of the assessment,” acknowledges that the description of fishing gear and methods was “limited” and “assumed general understanding” of how the fisheries operate. MRAG states that the team “will gladly add a section to the . . . [Final Public Certification Report].”

62. Because fishing gear and methods are described in published literature, I don’t think that these descriptions can be fairly be characterized as “un-published key information,” and I question whether inclusion of this information bears in a material fashion upon the fairness of the assessment process or is pertinent to scoring. Still, regardless of how well known, especially to the objectors, the fishing gear and methods in the orange roughy fisheries may appear to be, I agree with the objectors that the Final Public Certification Report (the “PCR”) should be complete, that it shouldn’t be assumed that the public knows all that it needs to about gear and methods and that disclosure might indeed help stakeholders better to understand alternatives to alleviate potential adverse impacts. Therefore, I accept the CAB’s offer, and the CAB will be directed to undertake a limited revision of the PCR for the purpose of adding a section describing the fishing gear and methods utilized in the fisheries.

### **C. The Objectors’ Challenges to the Scoring of P1 Performance Indicators.**

63. The objectors challenge the scoring of five PIs under MSC Principle 1 pursuant to CD 2.7.2.2 of the Objections Procedure. Principle 1 provides, “The fishing activity must be at a level which is sustainable for the fish population. Any certified fishery must operate so that fishing can continue indefinitely and is not overexploiting the resources.” The Principle basically relates to the health of the target stocks. Overall, the fisheries received passing scores of 86.9 for ORH3B NWCR, 84.4 for ORH3B ESCR and 86.9 for ORH 7A under this Principle. The objectors contend that the scores were unjustified and, in many cases, even awarding a scoring at the SG 60 level was not warranted.<sup>11</sup> If the objectors are correct, then the scores would need to be substantially reduced, and, if any did not meet the SG 60 level, the particular UoA as a whole would not merit a passing grade under the CR.

#### **i. PI 1.1.1.**

64. PI 1.1.1 provides, “The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing.” For a score of 80 under PI 1.1.1b., the stock must be “at or fluctuating around its target reference point.” On this PI, ORH3B NWCR

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<sup>11</sup> Under Section 27.10.5.1a of the CR, if any scoring element fails to achieve an SG 60, the fishery fails and is ineligible for certification.

received a score of 90; ORH3B ESCR received a score of 70; and ORH7A received a score of 90.

65. WWF takes the position that the NWCR stock “has not yet rebuilt to a safe level and should have been scored below 80.” It underscores that, while the Final Report says that there is a less than 1% probability that the stock is below the limit reference point (“LRP”), the 2015 stock assessment shows the probability is an order of magnitude higher, *e.g.*, less than 10%. It further argues that, while an appropriate target reference point (“TRP”) would be around 40% B0, “[t]he actual stock biomass is below that value (37% B0).” It is “evident,” WWF claims, that a “more precautionary approach” is warranted.<sup>12</sup>

66. The DSCC Group takes the position that all three scores should be below 60. It claims that the NWCR stock has been below and not fluctuating around the TRP, and the problems with the stock are amplified by uncertainties in the stock assessment; that the ESCR stock has “plummeted from 2000 to 2015 and may be below the point where recruitment is impaired;” and the ORH 7A stock was fished way down in the 1980s and only during the past six years “reached anywhere near 30% of biomass.” Given the history of overfishing, the longevity and slow reproduction of the species, the close proximity to the TRP and the uncertainties in the stock assessment, the DSCC Group contends that no reasonable CAB could have scored any of the fisheries at SG 60.

67. DWG, in specific response to WWF, lays emphasis on the fact that 2014 stock assessments (MPI 2014 a, b, c, d; Cordue 2014a) estimated the NWCR stock to be within the TRP with a “very high probability” and that, regardless whether one uses the 1% or 10% estimates, this conclusion holds. It nonetheless affirms that the CAB was more than justified in using outputs from the 2014 stock assessment – a scientifically evaluated and peer-reviewed report – in considering the status of the stocks. DWG contends that effectively WWF is just refusing to accept the notion that a depleted stock can be rebuilt so that it is sustainable on a going forward basis. With respect to both objectors, DWG rejects the notion that a sustainable recovery has not occurred and affirms that the best available science is to the contrary. To be sustainable, stocks need not be at the midpoint of the range and can be fluctuating within the TRP range, *i.e.*, 30%-50% B0, and the CAB has so found. Indeed, the argument goes, the Management Strategy Evaluation (“MSE”), which sets the TRP range, is more conservative than use of a fixed point and will tend to move abundance to 40% B0.

68. The CAB, too, emphasizes the robust nature of the stock assessment and discounts the difference between the 1% and 10% probability that the NWCR stock is below the LRP. It also rejects a fixed reference point of 40% in favor of the target reference range adopted in New Zealand. It concludes, “The MRAG assessment team has shown that the best available science demonstrates that the stock is above the PRI [Point of Recruitment Impairment].” As to the DSCC Group’s contentions, the CAB underscores that the objector has presented no evidence that all UoCs are below PRI or below the target range at this time, and it makes the point that the MSC scheme requires an evaluation of current status not past condition. The CAB also notes

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<sup>12</sup> WWF also notes that “high fishing mortalities might hinder the ability of the stock to rebuild within the timeframe specified for the stock under PI 1.1.3b.” This issue is dealt with *infra* at paragraphs 73 to 76.

that it is “impractical to deal with every single uncertainty” and reliance on stock status information from the stock assessment report is entirely justified.

69. I understand the WWF and DSCC Group’s concerns about past fishery performance and current uncertainties and about how they might disagree with MRAG. But it is difficult to say that MRAG made a mistake of material fact, failed to consider material information or was arbitrary or unreasonable in relying on the stock assessment report and information derived from that report in considering PRI. Ultimately, fisheries science judgments are within the province of the CAB, and, on questions involving the sifting and weighing of evidence, deference to the CAB is warranted. *See In re: Northwest Atlantic Canadian Longline Swordfish Fishery, supra*, ¶¶ 17 (vi), (vii), (xi), (xii). Accordingly, I decline to accept the objectors’ contentions under PI 1.1.1.

**ii. PI 1.1.2a.**

70. PI 1.1.2 provides, “Limit and target reference points are appropriate for the stock.” All three UoCs received a score of 80 under this PI. To receive an 80 under PI 1.1.2a., “Reference points are appropriate for the stock and can be estimated.”

71. WWF contends that the LRP and TRP “have not been shown to be appropriate for the stocks” and thus do not meet the SG 80 scoring level. It contends that there is “little empirical evidence” for these limits and the limits should be more precautionary for long-lived species such as orange roughy.

72. I believe that CAB is correct when it responds that, while WWF has expressed concerns, it has provided no evidence the LRP and TRP are not appropriate. In particular, as discussed above, the CAB notes that the MSE demonstrates that the target range, combined with the Harvest Control Rule (the “HCR”), will “tend to move abundance to 40% B0.” The range is based upon the best available science and obviously has been able to be estimated. Likewise, DWG stresses that the range was determined as part of a detailed MSE, whose methodology was peer-reviewed and whose outputs were accepted for application both by the industry and MPI. This matter basically falls within the CAB’s discretion. *See In re: Russian Sea of Okhotsk Midwater Trawl Walleye Pollock Fishery, supra*, ¶ 56. I cannot say that the CAB made a mistake of material fact, failed to consider material information or was arbitrary or unreasonable, and it is impossible to say that no reasonable CAB would have come to the same conclusion. The contention must therefore be rejected.

**iii. PI 1.1.3.**

73. PI 1.1.3 provides, “Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe.” The only stock considered to be depleted is the ESCR stock, whose spawning biomass is at the lower limit of the management target range. A score of 100 is appropriate where, for scoring issue “a.” “there is strong evidence that rebuilding will be complete with the specified timeframe,” and, for scoring issue “b.”, “The shortest practicable rebuilding timeframe is specified which does not exceed one generation time for the depleted stock.” The ESCR UoC received a 90 for this PI.

74. It is the position of the DSCC Group that all target stocks are depleted and the fisheries should receive scores less than 60. The DSCC Group claims, “Rebuilding of all stocks to target levels must occur within the shorter of 30 years or 3 times its generation time to achieve SG 60: but orange roughly reach reproductive maturity at ages of approximately 30 years.” It claims that the ESCR stock is estimated to be at only 24% B0 and notes that “[h]istorical catch rates have declined rapidly and flattened out with little recovery.”

75. In response, the CAB notes that it has shown that the NWCR and 7A stocks are “above PRI” and “well within the target range.” Since they scored above 80 under PI 1.1.1., under the MSC requirements they cannot be considered depleted. As for the ESCR stock, the CAB concluded that “the rebuilding timeframe is implicit,” given both the “commitment to rebuild quickly” and the “evident rebuilding since 2010.” The information derives from the 2014 stock assessment (MPI 2014 a, b, c, d; Cordue 2014a). As for the DSCC Group’s 24% figure for the ESCR stock, the CAB notes that this is not the figure reflected in the stock assessment, which estimates stock size as 29.6% B0, or just 0.4% below the target range. A condition has been imposed to bring the stock within the target range.

76. The DSCC Group has provided no compelling evidence that the stocks should have been scored below 60. I see no reason to disturb the CAB’s determination. Accordingly, this element of the objections cannot be upheld.

#### iv. PI 1.2.1.

77. PI 1.2.1 provides, “There is a robust and precautionary harvest strategy in place.” All three UoCs received a score of 85 under this PI.

78. The DSCC Group notes that, for a score of 60, the harvest strategy must be “likely to work based on prior experience or plausible argument.”<sup>13</sup> It claims that “[p]rior experience shows the opposite.” Further, it emphasizes that “the harvest strategy is just an agreement between the industry and MPI.” As a result, it says, “[T]here can be no certainty that the MPI will set catch limits for the three stocks using the agreed HCR.” It goes on to note that the strategy has only been applied one time and thus “there has been insufficient time to assess that it is achieving its objectives.” Finally, it complains that the targets for the fisheries are “arbitrary” and observer coverage is “patchy,” with the result that robustness is difficult to assess.

79. Once again, contrary to the DSCC Group’s arguments, I don’t believe that the CAB made a mistake as to a material fact, failed to consider material information or acted arbitrarily or unreasonably in concluding that past overharvest does not necessarily mean that current management is so uncertain that it is not a proper basis for making judgments about the sustainability of the fisheries. The CAB properly relied on the 2014 stock assessment, and the CAB confirmed the management strategy with DWG and MPI. As the CAB points out, “The Harvest Strategy includes the setting of catch limits to provide for sustainable levels of fishing mortality (with 2014 exploitation rates between 0.5% and about 3% for the UoCs) reflecting a

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<sup>13</sup> The DSCC Group bring this contention under PI 1.2.3, which goes to the collection of information, but presumably the citation is inadvertent. Though the DSCC Group argued the point at hearing, I do not read the NOO as raising an objection under PI 1.2.3, and so no further consideration will be given to claims under this PI.

conservative and robust management approach.” Finally, with respect to the assertion that the regime is deficient because it is merely a voluntary agreement between the industry and MPI, the MSC scheme only requires that management measures be in place; it doesn’t require that they be in a particular format, and, as DWG notes, “They can be regulated or non-regulated.” Within New Zealand, the harvest strategy falls within a fishery management framework established by the Fisheries Act of 1996, and MPI has indicated its acceptance of the Harvest Strategy. *See* letter from V. Reeve to R. Trumble, dated October 8, 2014, regarding application of the HCR to orange roughy stocks. A partnership between the industry and the New Zealand government, reflected in the National Deep Water Plan and Orange Roughy Fisheries Plan, has been in effect since 2006. *See* Final Report, Section 3.5. The Harvest Strategy is implemented through regulated changes to total allowable catch (“TAC”) and total allowable commercial catch (“TACC”) limits adopted by MPI. *See* Final Report, Section 3.3.6, p. 33. This is enough, in my judgment, to satisfy the MSC’s requirements.

80. In short, the DSCC Group has not made the case that the Harvest Strategy for the orange roughy fisheries is deficient, and I find no basis to conclude that the CAB’s score was not justified. The objection under PI 1.2.1 is rejected.

#### **v. PI 1.2.2.**

81. PI 1.2.2 provides, “There are well defined and effective harvest control rules in place.” All three UoCs received a score of 90 under this PI. The DSCC Group once more launches an attack against the HCR primarily on the basis of the HCR not being subject to “rules in place” but only to “an agreement between industry and MPI.”<sup>14</sup> For the same reasons that I have rejected the contention under PI 1.2.1, I reject the contention under PI 1.2.2: the HCR is fully specified, and voluntary management is acceptable under MSC requirements. The HCR regime, implemented through TACs and TACCs adopted by MPI, is far from toothless and is sufficient to warrant the scores accorded.

#### **D. The Objectors’ Challenges to the Scoring of P2 Performance Indicators.**

82. The objectors challenge the scoring of numerous PIs under Principle 2, which provides, “Fishing operations should be managed to maintain the structure, productivity, function and diversity of the ecosystem on which the fishery depends.” The Principle essentially relates to the impact of the subject fishery on the ecosystem. Overall, the subject fishery received passing scores of 87.0 for ORH3B NWCR, 85.7 for ORH3B ESCR and 86.9 for ORH 7A under this Principle. The objectors contend that a wide variety of scores was unjustified and, in many cases, the scores should have been even below SG 60. As with the P1 objections, if the objectors are correct, then the scores would need to be substantially reduced, and, if any did not meet the SG 60 level, the particular UoA as a whole would not merit a passing grade under the CR.

#### **i. PI 2.2.1.**

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<sup>14</sup> The DSCC Group also alludes to the failure of the HCR to take into account climate change and ocean acidification. I do not find these alleged deficiencies weighty enough to undermine the CAB’s determinations. Indeed, as DWG points out, under the HCR, if abundance should decline due to climate change or ocean acidification, catch levels will be adjusted accordingly.

83 PI 2.2.1 provides, “The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups.” All three UoCs received a score of 80 for this PI, which means that “[m]ain bycatch species are highly likely to be within biologically based limits.”

84. The DSCC Group contends that even a score of 60 (requiring that main by-catch species are just “likely to be within biologically based limits”) is unwarranted. It stresses that the fisheries are lacking key information about by-catch species, stating that it is not possible, due to the absence of stock assessments and “poor reproductive output,” to determine whether dogfish species, especially Baxter’s lantern dogfish, which is considered a main by-catch species, are likely within their biologically based limits.

85. The CAB emphasizes, in response, that MSC guidance, GCB 3.2.2, recognizes, “Direct observations and quantitative analysis are often limited in P2 components and so there may be greater reliance on qualitative interpretations.” It points out that only Baxter’s lantern dogfish is classified as a main by-catch species and only for the ESCR and NWCR UoAs (with no main by-catch species denominated for the 7A UoA). Surveys indicate stability of the stock over a more than twenty year period (1992-2014). This stability, coupled with “well-distributed length frequency,” in the CAB’s judgment, “strongly suggest[] minimal depletion from unfished abundance.” For its part, DWG points out that the catch in absolute terms has been very low (less than 5%), and available science confirms that the fisheries do not materially affect this species of dogfish.

86. It seems to me that the issues under PI 2.2.1 are quintessentially ones of scientific judgment which involve weighing the evidence available regarding the status of by-catch species. Especially since qualitative rather than quantitative evidence is deemed by the MSC to be enough to support that judgment, I am in no position to second-guess the CAB’s determination, even though there may be some scientific evidence in the record supporting the objector’s contention. Consequently, the objection under PI 2.2.1 must fail.

#### ii. PI 2.3.1.

87. PI 2.3.1 relates to the protection of Endangered, Threatened or Protected (“ETP”) species. It provides, “The fishery meets national and international requirements for protection of ETP species.” It further provides, “The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species.” It consists of three parts: an evaluation whether the fishery is within limits, an examination of direct effects and consideration of indirect effects. Overall, the ESCR and NWCR UoAs received scores of 75 for this PI, while the 7A UoA received a score of 95. The objectors find fault with the CAB’s approach to this PI on numerous grounds, though all are related to the impact of the fisheries on coral species.

88. The DSCC Group focuses on all three elements, arguing particularly that (a) the fisheries fail to meet national and international requirements for the protection of coral species; (b) in light of the scalar argument discussed above at paragraphs 29 to 34, *supra*, and given the “high sensitivity” of corals to trawling and “long recovery times,” the direct impacts of the fisheries on protected corals are severe; and (c) sediment clouds associated with trawling indirectly affect areas outside the established trawl footprint. WWF’s primary challenge to the

scoring of this PI relates to its third element of indirect effects. It claims that the score given to PI 2.3.1c. cannot be justified, in particular because the CAB gave “inadequate consideration to the potential for sediment plumes generated by benthic trawling to negatively impact ETP corals.”

89. With respect to the first point, the DSCC Group cites the New Zealand Wildlife Act of 1953 and challenges the notion that corals are being protected in compliance with that legislation. It further engages in a long disquisition on various international measures for the protection of corals, including United Nations General Assembly Resolutions, the United Nations Food and Agriculture Organization (“FAO”) 2008 International Guidelines for the Management of Deep Sea Fisheries in the High Seas, and regulations governing bottom fishing adopted by the SPRFMO. It suggests that the fisheries are out of compliance with these measures.<sup>15</sup>

90. The problem with the argument is twofold. First, under the Wildlife Act of 1953, while there are four protected species of corals (Black corals, Stony corals, Gorgonian corals and Hydrocorals), no specific national requirements for protection have been established. There are, as DWG underlines, “no targets or other specific management objectives.” Thus, there is nothing for the fisheries to be out of compliance with.<sup>16</sup> Second, the CR clearly limits the CAB’s consideration to “binding” international agreements. *See* CB 3.11.1b. United Nations and FAO resolutions and guidelines don’t fall within this category. Indeed, the only binding international agreement recognized by the CR is the Convention on International Trade in Endangered Species (“CITES”). *See* CB 3.11.1b.i. There is no claim that New Zealand’s actions violate CITES. Finally, the DSCC Group does not show that New Zealand is out of compliance with SPRFMO requirements, and, indeed, the CAB took SPRFMO into account in the small area of 7A stock which straddles international waters.

91. The direct impacts argument, as noted above, is closely related to the question of SOIH. The DSCC Group focuses its attention on the damage caused by orange roughy trawling at the local level, highlighting evidence that benthic communities on seamounts have been adversely impacted by bottom trawling through physical disturbance and removal of 3-D structures on margins and seamounts. It stresses the sensitivity of corals and long recovery times. It denies that the footprint of the fishery is small. It challenges the view that trawls follow

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<sup>15</sup> The DSCC Group goes so far as to suggest that the fisheries are operating under a “controversial unilateral exemption to an international agreement,” to wit, CMM 4.03 (superseding CMM 2.03) adopted by the SPRFMO, in contravention of CR 27.4.4.1 which states, “A fishery shall not be conducted under a controversial unilateral exemption to an international agreement.” However, New Zealand acted consistently with the SPRFMO rule, which allows member states to exclude part of its bottom fishing footprint into areas open and closed to bottom fishing and those areas where SPRFMO measures would apply. Instead, New Zealand, as explained by the CAB, “implemented a spatial management approach . . . consisting of open areas, closed areas and areas open to fishing where a move-on-rule was in place.” The very purpose of the exclusions was to “prevent significant adverse impacts to VMEs.” There is no indication that any SPRFMO members had any issues with New Zealand’s approach, and in fact it was, according to the CAB, “accepted by the RFMO as meeting the intent of the CMM.”

<sup>16</sup> It is for these reason that the CAB assessed the likelihood that the fisheries would cause unacceptable impacts on coral not in light of national requirements under CB 3.11.3.1 but rather light of the default assessment in CB 3.11.4. As the CAB explains, this is actually a more precautionary approach.

established tow lines. It repeatedly rejects the notion that what matters is that only a small portion of the ocean is fished or fishable. Rather, the DSCC Group asserts, what matters is what portion of the fishable area is trawled. It utterly disagrees that protecting sensitive habitat is effective at reducing impacts where that habitat is not one where harvest occurs.

92. The response of the CAB and DWG, which I find persuasive, is that it was appropriate for the CAB to conduct its assessment not at the level of individual organisms but at the species or population level. Thus, in assessing direct effects, what was relevant to the CAB was the extent of overlap of the fisheries with areas where protected corals are found. There is no evidence that the CAB's findings regarding the distribution of corals is incorrect. Further, the CAB had detailed data concerning just where the fisheries operate, *e.g.*, along established tow lines. It also thoroughly explained why it thought that expansion of the footprint was not likely to occur. *See* Final Report, Section 4.4.5, pp. 74-75. In light of this information, the CAB concluded that overlap was limited – less than 20% of all coral groups for the 7A fishery and less than 30% for the NWCR and ESCR fisheries. *See* Final Report, Section 4.4.5, Table 25. For its part, DWG, after explaining that corals are widespread and found at both shallower and deeper depths than those where the fisheries are prosecuted, cites Clark 2015 for the proposition that overlap between the fisheries and the distribution of coral is low. In the circumstances, I will not substitute my judgment for that of the CAB in scoring the direct effects of the fisheries on protected corals.

93. Finally, with respect to indirect effects, neither WWF nor the DSCC Group adduce substantial evidence demonstrating that sediment plumes are a significant problem. There is, the CAB acknowledges, little that is known about these effects. Indeed, the CAB states that there are “no known studies specifically examining sediment mobilization by fishing gear in deep-sea fisheries and its effects,” and thus the CAB's confidence that there are no significant detrimental effects is not “high.” *See* Final Report, PI 2.3.1c. However, the CAB points out that, in light of the information available, we know that “deep sea corals require hard substrate, [and] therefore if they are proximate to trawling activity there is a low likelihood of significant sediment mobilization.” Further, the CAB affirms its confidence that it is “the prevailing practice to fish on established tow lines.” Given the absence of strong evidence, the CAB was called upon to make a difficult judgment, and it did, concluding that indirect impacts were unlikely to be unacceptable. Under the standard of review in the Objections Procedure, I cannot say that the CAB made a mistake as to a material fact, failed to consider material information or acted arbitrarily or unreasonably. Thus, I cannot accept WWF's and the DSCC Group's contentions under PI 2.3.1c.

### iii. PI 2.3.2.

94. PI 2.3.2 provides, “The fishery has in place precautionary management strategies designed to . . . [meet certain requirements and goals for protecting ETP species].” The fisheries received an overall score of 90 on this PI. The SG for a score of 80 at PI 2.3.2a provides, “There is a **strategy** in place for managing the **fishery's impact** on ETP species, including measures to minimize mortality, which is designed to be **highly likely to achieve** national and international requirements for the protection of ETP species” (emphasis in original).

95. WWF attacks the PI 2.3.2 score on two grounds, arguing that, while New Zealand maintains a “system of closures and MPAs [Marine Protected Areas] in combination with monitoring vessel positions,” nonetheless “the current management system for the OR fishery contains no provisions for limiting the impact of the fishery to the historical footprint.” Placing trust in “unenforced or unlegislated behavior,” WWF argues, fails to meet the requirement that a management strategy be in place. Relying on the “practice of using the same tow paths,” in contrast, for example, to positive SPRFMO measures that “actually freeze the trawl footprint,” is insufficient, in WWF’s view. As WWF puts it, “hoping that the footprint won’t expand is not a strategy.” WWF submits, “The CAB provides no scientific evidence that orange roughy will continue to aggregate in preferred UTF trawl corridors and acknowledges that fishing will continue to expand to new areas and damage ETP corals and benthic habitats.” The approach of relying on an “unproven network of closures” and “relying on vessels to remain in trawl corridors of their own,” in WWF’s words, is simply not precautionary.<sup>17</sup>

96. In response, the CAB states that it is not relying simply on “assumptions” or “hopes” with respect to the trawl footprint. Rather, it explains, it has confidence that the practice of following the same tow paths on previously fished parts of UTFs will be maintained because (a) the HCR, which restricts the size of the fishery, “forms part of a partial strategy,” and (b) New Zealand is continuing to evaluate trawl impacts and has developed a number of measures effectively managing impacts, such as the closing of about one-third of the New Zealand EEZ through BPAs, the designation of MPAs, the establishment of marine reserves, and monitoring vessel movements through Vessel Monitoring Systems (“VMS”).

97. DWG emphasizes that a strategy need not be formally regulated or provided in rules: according to MSC guidelines, it can include “voluntary or customary arrangements, agreements or practices.” See GCB 3.3. In the context of the New Zealand orange roughy fisheries, DWG points to “multiple layers” of a New Zealand strategy, including protection against incidental taking of coral under the Wildlife Act of 1953, legislative policies to prevent and mitigate adverse effects on the aquatic environment, adoption of a fisheries plan which contains provisions to avoid or minimize adverse effects on protected corals, a “spatial management strategy” (with Marine Reserves, BPAs and seamount closures), requirements for reporting coral taken, observer coverage and research. As to maintenance of the footprint, DWG notes that the CAB acknowledges that the footprint might expand but could properly conclude that the HCR would contain any such expansion and that fishing on UTFs could be expected to continue along existing tow lines.

98. This is perhaps one of the closest issues in this proceeding. Nonetheless, I am persuaded that there is just enough there, in terms of elements of a strategy and a basis for

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<sup>17</sup> WWF also asserts under a separate objection heading related to PI 2.3.2 that there is “really only one ‘measure’ in place” – Benthic Protection Areas (“BPAs”). It denies that this really constitutes a “strategy” and contends that it is not “sufficiently precautionary.” WWF, at hearing, discounted the effectiveness of BPAs, stressing that most the closed area is “over-depth,” with 86% of BPA areas lying outside of trawlable depths and citing such reports as Rieser, *et al.*, *Trawl fisheries, catch shares and the protection of marine ecosystems: Has ownership generated incentives for seafloor stewardship?*, 75 Marine Policy 40 (2013). This contention is essentially dealt with in the following discussion under this PI. However, as the CAB points out, “[s]patial management of impact through instituting closed areas is an established precautionary best practice approach,” and BPAs are just one part of a broader network of closures designed to protect habitat.

concluding that the fisheries would continue to be prosecuted along existing tow lines, not to upset the CAB's judgment. The objection under PI 2.3.2 is not upheld.

#### iv. PI 2.3.3.

99. PI 2.3.3 provides, "Relevant information is collected to support the management of the fishery impacts on ETP species, including information for the development of the management strategy; information to assess the effectiveness of the management strategy; and information to determine the outcome status of ETP species." The ESCR and NWCR fisheries received scores of 75 on this PI, while the 7A fishery received a score of 80.

100. The DSCC Group claims the scores should have been less than 60. Its primary argument is that adequate information would necessarily include "actual video surveys" and "samples taken" and that current information is insufficient to allow considered management judgments to be made.

101. The CAB points out that the "level of information available about habitats and benthic fauna composition and distribution in the fishery is better than that which is available for almost all other areas in the world." This information is obtained through the use of observers, VMS, research surveys and specific MPI analyses. Finally, there is regular monitoring and reporting of the trawl footprint in relation to coral habitat.

102. It may be that it would be desirable to have video surveys and sampling as part of the informational mix. The lack of information from such particular sources, however, scarcely means that the collection of information is so deficient that the fisheries must fail under this PI. The objector's challenge to the scoring of the fisheries under PI 2.3.3 is not sustained.

#### v. PI 2.4.1.

103. PI 2.4.1 provides, "The fishery does not cause serious or irreversible harm to habitat structure considered on a regional or bioregional basis and function." The fisheries scored 90 on this PI. To score at the SG 80 level, it must be found that "[t]he fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm [less than 30% probability of SOIH]."

104. The objectors makes three arguments under this head of the objections. First, WWF again focuses on indirect impacts, contending that sediment plumes may have significant, adverse impacts on habitat, especially beyond the trawl footprint. This issue has already been dealt with by me above in paragraph 93, *supra*, and need not be further discussed here.<sup>18</sup> For the same reasons, I find that this component of WWF's objection under PI 2.4.1 must fail.

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<sup>18</sup> MRAG does point out that it relied on established methodology used to calculate trawl footprints, citing Black, *et al.*, *Monitoring New Zealand's trawl footprint for deepwater fisheries: 1989-90 to 2009-10* (New Zealand Environment and Biodiversity Report No. 110, 2013). It affirms, "The scale of the footprint ... substantially overstates the real area of fishing impact and does so specifically to provide a measure of precaution to address the inherent uncertainties such as the possibility that mobilization of sediment adversely impacts areas outside the trawl footprint." Further, because the footprint is a "very small fraction of the overall habitat area," even if the footprint were larger, the fishery would still meet the scoring criteria for SG 80.

105. Second, the DSCC Group takes a different tack. The DSCC Group uses this PI, citing the definitions of “serious harm” and “irreversibility” under CB 3.14.2.1 and CB 3.14.2.2, to claim that bottom trawling causes “gross change in habitats and disruption of the function of the habitat, and the damage is irreversible: recovery would take thousands of years.”<sup>19</sup> The DSCC Group then proceeds to spell out its scalar argument, claiming that the CAB position that damage assessment can be based on the footprint of the fisheries and that “they don’t damage where they don’t fish analysis” is “absurd.” In the view of the DSCC Group, the CAB’s approach “only serve[s] to reinforce the obvious points: bottom trawling irreversibly damages habitat where they trawl.” I have already addressed this issue above in paragraphs 91 to 92, *supra*, and there is no need to repeat my analysis under this head of the objections. Suffice it to say I have not been convinced by the DSCC Group’s argument, and the objection under PI 2.4.1 is not accepted.

106. Third, WWF asserts that the CAB “did not adequately consider the system of habitat classification in order to predict impacts.”<sup>20</sup> Scoring only UTF and slope areas, WWF charges, was erroneous, and the CAB “ignored up to date science regarding habitat classification,” and it should have looked at “small-scale diagnostic features like different substrates or biota.” It notes that CB 3.14 allows the assessment team to look at different substrates and biota. However, the CAB points out that it “took into account the structure of habitats,” and that it reasonably determined that there were two primary habitat types across the areas, containing “similar faunal compositions.” WWF points to nothing in the MSC requirements or guidance compelling a finer scale classification; it is appropriate for the CAB to consider habitat structure and function on a regional or bioregional basis (*see* CB 3.14.1); and the CAB’s expert judgment regarding how to classify habitat elements for purposes of assessment is not one I am willing or able to second guess. *Cf., In re: Greenland Cod, Haddock and Saithe Fishery*, ¶¶ 17, 18 (MSC, March 27, 2015) (accepting discretion of the CAB in classifying habitat elements). Thus, WWF’s objection under this head is rejected.

#### vi. PI 2.4.2.

107. PI 2.4.2 provides, “There is a strategy in place that is designed to ensure that the fishery does not pose a risk of serious or irreversible harm to habitat types.” The fisheries received a score of 85 on this PI.

108. The DSCC Group charges that reliance on BPAs “is not a substitute for a strategy to prevent serious or irreversible harm.” It makes basically the same points made by WWF under PI 2.3.2, namely, that most BPAs include abyssal plains and that seamounts at fishable depths are outside of BPAs. It notes that only 27.7% of BPAs are within the depth range sampled by research trawls, and “[t]he reduction in trawling opportunities caused by the BPAs was estimated at less than 0.2% of deepwater trawl fishing.” This issue of the nature and adequacy of New Zealand’s habitat protection strategy has already been discussed in the context of PI 2.3.1 at paragraphs 89 to 90, *supra*. The DSCC Group offers nothing under this PI to suggest a different result, and this head of the objections is therefore not upheld.

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<sup>19</sup> These provisions are set out in paragraph 30, *supra*.

<sup>20</sup> WWF submits that this argument also applies to the scoring of PI 2.4.2 and PI 2.4.3. For convenience sake, it is just considered under this rubric. The same considerations would apply under the other PIs.

vii. PI 2.5.1.

109. PI 2.5.1 relates to impacts on ecosystem structure and function. It provides, “The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function.” The fisheries received a score of 100 under this PI, meaning there is “evidence” that such harm is “highly unlikely.”

110. There is really only one new objection under this PI, made by WWF.<sup>21</sup> WWF contends that “MRAG did not assess the outcome status of the deep sea benthic ecosystem.”<sup>22</sup> It asserts that “the benthic ecosystem represents a ‘key’ ecosystem element, but the CAB did not assess the ‘true status’ of the benthic ecosystem in a way that would justify the conclusion about the likelihood of not approaching a point of . . . [SOIH].” It stresses that the argument of the CAB is “constructed almost exclusively around the notion that a severe but small impact is rapidly diluted in a large ocean.” WWF states that the CAB, while citing Dunn, *Ecosystem Effects of Orange Roughy Fisheries* (2013) (“Dunn 2013”),<sup>23</sup> has largely ignored the implications of this study, and the CAB’s postulation that portions of benthic ecosystem not directly impacted by trawling are “intact and functioning properly” is problematic, particularly in light of historical orange roughy (or other fisheries’) fishing and “non-fishery related drivers” such as “global warming, ocean acidification and pollution.” It concludes, “The score that MRAG assigned to PI 2.5.1 (100) implies we have a very good understanding of the outcome status of the benthic ecosystem across the Kermadec bioregion when in reality the opposite seems to be true.”

111. In response, the CAB explains that its focus under this PI must be upon “the likelihood of the fishery disrupting the key elements underlying ecosystem structure and function to the point where there would be . . . [SOIH].”<sup>24</sup> Thus, PI 2.5.1 differs from outcome determinations under other PIs. MRAG reasonably chose to score impacts “within the Kermadec bioregion and New Zealand EEZ within which orange roughy are distributed.” Ecosystem elements, it notes, were considered, as required by the MSC, “relative to the scale and intensity of the fishery.” See CB 3.17.3. The CAB makes the point, moreover, that it must avoid “double scoring, and so it “can only assess each element under one component.” As a result, while corals

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<sup>21</sup> The DSCC Group’s argument is largely limited to the “ecosystem services” point discussed in paragraphs 51 to 53 above. It is rejected for the same reasons here.

<sup>22</sup> Its objection also falls under PI 2.5.3, in that it claims the scoring rationale for PI 2.5.3 “overstates our knowledge of the main impacts of trawling deep sea benthos.” This is basically subsumed in the discussion of PI 2.5.1.

<sup>23</sup> This report, underscoring uncertainties in knowledge about ecosystem effects, basically argues that there is a need for a “credible ecosystem monitoring programme.”

<sup>24</sup> WWF contends “the MSC sets out probability levels for PI 2.5.1 in terms which are explicitly related to ‘true status.’” See Table CB 18. However, Table CB 18, which is part of PI 2.4.1, relates to the possibility of SOIH to “components” of habitat. Under PI 2.5.1, CB 3.17.1 provides that components of the assessment, which include “target species, bycatch species, ETP species and habitats,” are scored “separately to this PI, which considers the wider ecosystem structure and function.” As the CAB explains, “The Ecosystem component addresses system-wide issues, primarily impacted indirectly by the fishery including ecosystem structure, trophic relationships and biodiversity.” As required by CB 3.17.4, the CAB did use the percentage probabilities set out in Table CB 18 to assess the likelihood of ecosystem impacts.

may be assessed specifically under ETP, “they are not separately assessed under habitats or ecosystems.”

112. MSC guidance (GCB 3.17.2) provides that SOIH in this context must be interpreted “in relation to the capacity of the ecosystem to deliver ecosystem services,” and the CAB has considered these services on a “system-wide basis.”<sup>25</sup> The CAB in fact expressly found that there was “no evidence of loss of functional components or species in the ecosystem,” and “the low level of by-catch in the fisheries indicates direct ecosystem effects from removals are likely to be small.” Final Report, PI 2.5.1. Ultimately, as the CAB stated, “Due to the disparity between the scale of the fishery within the UoAs and the totality of the ecosystem, we have determined that this fishery alone is sufficiently small as to preclude the possibility of unacceptable impacts at the ecosystem level.” This judgment, MRAG continues, is not in contradiction to studies such as Dunn 2013: it is not the CAB’s conclusion that there is no harm from trawling but rather that there is evidence that such harm is “highly unlikely” at the ecosystem level. Notably, this judgment, perhaps an artifact of how this PI is written, is consistent with scores given to the vast majority of fisheries assessed under the MSC scheme. Last of all, as DWG notes, the fishery evaluation under the CR is limited to the current fishery, and impacts from the historical orange roughy fisheries, other fisheries, climate change, ocean acidification and pollution are outside the scope of the analysis.<sup>26</sup>

113. At the end of the day, I cannot say that the CAB misinterpreted or misapplied the MSC’s requirements. It cited evidence justifying its conclusions, and it presented a logical justification, consistent with the MSC scheme, for the decisions it made. It exercised sound scientific judgment in choosing the scope of the ecosystem to be assessed against the scale of the fisheries. Its conclusions about ecosystem health are in line with assessors’ conclusions for most other MSC-certified fisheries. Questions surrounding whether the status of the ecosystem is sufficiently known or as healthy as the CAB posits and whether ecosystem-wide impacts might be significant for the orange roughy fisheries come down to a battle of competing experts. I cannot step into this fray and determine that the CAB was wrong. Accordingly, this element of the objections is not upheld.

#### viii. PI 2.5.2.

114. The final P2 scoring objection relates to PI 2.5.2. PI 2.5.2 provides, “There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function.” The CAB awarded a score of 90 to the fisheries on this PI.

115. The DSCC Group urges that the score should have been below 60, basically meaning that the CAB could not conclude that “measures are considered likely to work based on **plausible argument**” (emphasis in original). It challenges the CAB’s conclusion that the

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<sup>25</sup> “Ecosystem services” are “the benefits people obtain” from ecosystems. See CR AA3, Table AA1 (Vocabulary). See paragraphs 51-53, *supra*.

<sup>26</sup> DWG notes, in any case, that even if historical orange roughy fishing were considered, this would only expand the footprint to 6.2% of the total area – an expansion unlikely to significantly affect the analysis. The footprint, DWG points out, also includes trawls for various oreo species. It further notes that other potential drivers of ecosystem health can be assessed through surveillance audits and re-certification processes.

fisheries have only “limited impacts” due to the restriction of the fishery to its trawl footprint. It emphasizes, to the contrary, that one cannot rely upon existing trawl tracks truly to contain the fishery, claiming that there is “no evidence” that trawls follow established tow lines and “do not in fact impact new areas,” and it contends that the CAB could not therefore properly find that the SG 80 standard was met. At hearing, it stated that “[c]laims that the footprint of the trawl fishery is small are wrong,” that “a significant area of each part of habitat has been impacted by bottom trawlers,” and that “the claim ignores cumulative impacts and connectivity between ecosystems.” The DSCC Group relies especially on Gianni 2012 and claims that this report is relevant “to the extent of the spatial extent of the NZ bottom trawl fisheries both inside the NZ EEZ and in the SPRFMO area.”

116. The question whether the orange roughy fisheries operate within established tow lines and whether this is a valid basis for projecting future operations of the fisheries has been discussed earlier. *See* paragraphs 95 to 98, *supra*. Little more needs to be said about it now. Suffice it to say, based upon these conclusions, I believe that the CAB, on the record before it, has not made a mistake as to a material fact, failed to consider material information or acted arbitrarily or unreasonably in determining that a score of 90 is warranted for this PI. Further, Gianni 2012 has been ruled to be inadmissible. *See* paragraph 21, *supra*. As a result, the CAB’s scoring of PI 2.5.2 is upheld.

#### **E. The Objectors’ Challenge to the Scoring of P3 Performance Indicators.**

117. Principle 3 relates to “effective management.” It reads, “The fishery must meet all local, national and international laws and must have a management system in place to respond to changing circumstances and maintain sustainability.” Overall the fisheries received a score of 95.3 under this Principle. Only one PI under Principle 3 is at issue in these objections: PI 3.1.1, which provides, “The management system exists within an appropriate and effective legal and/or customary framework which ensures that it: Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; Observes the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood; and Incorporates an appropriate dispute resolution framework.” The DSCC Group challenges the score of 100 for this PI, affirming that recent events showing under-reporting of catch for six decades fundamentally undermine this scoring of the fisheries. However, the document which provides the evidentiary basis for this objection is Simmons 2016. I have previously ruled that this report, post-dating the PCDR, is not admissible in this proceeding. *See* paragraph 23, *supra*. Accordingly, the objection must fail. As the CAB has advised, Simmons 2016 will be considered by the CAB as part of the first annual surveillance audit.

#### **F. The Objectors’ Challenges to the Adequacy of Conditions.**

118. The objectors make four objections against all four conditions raised by the CAB in the Final Report: Condition 1 under PI 1.1.1b. for the ESCR stock; Condition 2 under PI 2.3.1 for the NWCR and ESCR stocks; Condition 3 under PI 2.3.3 for the NWCR and ESCR stocks; and Condition 4 under PI 3.2.5 for all stocks. The objections are on a variety of grounds, including that the conditions are not “auditable and verifiable” within the meaning of CR 27.11.1, do not result in “improved performance,” as required by CR 27.11.1.3, and do not specify milestones that spell out “measurable improvements and outcomes (using quantitative

metrics) expected each year,” as required by CR 27.11.1.4a. The objectors also call into question Client Action Plans (“CAPs”) developed under conditions. Objecting to conditions is one of the most difficult burdens to carry under the Objections Procedure. As noted above, to prevail, an objector must demonstrate under ACD 2.7.2.1 that (a) a condition “fundamentally cannot be fulfilled,” or (b) “the condition setting decision was arbitrary and unreasonable in the sense that no reasonable CAB could have reached such a decision on the evidence available to it.” As articulated in the NOOs, the objections to conditions do not rise to the level required by ACD 2.7.2.1.

119. Condition 1 under PI 1.1.1b. for the ESCR stock calls for the provision of evidence that the stock “is at or fluctuating around its target reference point.” It is based on the finding that, even while the stock is expected to be within the lower part of the management range in 2015, it was estimated to be just below the bound of the range in 2014. The condition specifies milestones in years 1-4 requiring the provision of evidence relative to the TRP, leading in year 4 to evidence that the stock is “at or fluctuating around” the TRP, thus warranting a score of 80. The DSCC Group asserts that fishing should stop altogether during the certification period, and it argues that this is not a condition which will result in improved performance; the condition does not provide for measurable improvement each year; and “the only timeframe is at the end of the certification period.”<sup>27</sup> The short answer to this objection is that is that the management framework in place, with its HCR, establishes the measures that will lead the stock to be rebuilt. There is no basis for determining that fishing should halt; that is basically premised upon the notion that the fishery should have failed, and it is a notion rejected by the CAB. The condition is sensible in setting up a mechanism to gather evidence that the framework is working as envisioned, and it does state milestones, leading ultimately to a determination that the SG 80 level is met. It is clearly capable of being fulfilled and not unreasonable. This ground of objection is therefore not upheld.

120. Condition 2 under PI 2.3.1 for the NWCR and ESCR stocks relates to impacts on ETP species. It establishes a goal that, by the end of the certification period, “the direct effects of ORH fishing must be highly unlikely to create unacceptable impacts to ETP coral species.” It sets milestones over four years for DWG to develop and implement a CAP to “increase certainty” regarding coral impacts, leading to a report in year 4 yielding “improved certainty” that the SG 80 level will be satisfied for each stock. WWF basically argues that, while the condition does call for more data, it does not call for more coral protection; the condition is too vague; and the milestones and CAP are insufficient. The DSCC Group, complaining that the condition will allow damage to coral to continue, reasserts essentially the same objections it had to Condition 1 regarding improvement of performance, measures of improvement and timeline. While the condition is somewhat vague, I believe it is properly designed to reduce uncertainty about ETP impacts over the certification period, with the result that by the end of the period the SG 80 level is met and there is improvement from a mere likelihood to a high likelihood there will not be “unacceptable impacts” to ETP corals within the meaning of CB 3.11.4.1. The milestones are understandable and measurable. Finally, I would note that, to the extent this objection presents a challenge to the CAP, the CAP is not reviewable under the Objections

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<sup>27</sup> The sufficiency of milestones, it should be noted, is reviewable under the Objections Procedure. *See In re: Sustainable Swordfish LLC North Atlantic Swordfish Fishery, supra*, ¶ 54.

Procedure. *See In re: Greenland Cod, Haddock and Saithe Fishery, supra*, ¶ 18, n. 1. Certainly the condition is capable of being fulfilled, and I cannot find it to be unreasonable. The objections to this condition are thus rejected.

121. Condition 3 under PI 2.3.3 relates to information collected to support management of impacts on ETP species for the NWCR and ESCR fisheries. It provides, “By the end of the certification period, information must be sufficient to determine whether the fishery may be a threat to protection and recovery of ETP coral species.” The condition sets forth milestones related to the development of a CAP that will reduce uncertainty to a point that the SG 80 level can be met by year four. WWF basically asserts that the CAP falls short of MSC requirements, and it complains, “The proposed plan does not address sufficiency of information, only improved certainty.”<sup>28</sup> It further states that “any determination about sufficiency of information should be made only after an objective and independent appraisal of the facts.” The DSCC Group, for its part, again arguing that “fishing should stop,” this time because information is insufficient,<sup>29</sup> claims once more that the condition is passive, will not lead to measurable improvements and lacks milestones. The CAB responds that an “objective and independent appraisal of the facts” is precisely what will occur when the assessor conducts its annual surveillance audits, and that the very issue under this condition is the sufficiency of information. I agree that this is what the condition is intended to accomplish, without pre-determining the outcome, and that it does so with reasonably specific milestones. The condition can be fulfilled and is not unreasonable. The objections to this condition thus must fail.

122. Condition 4 under PI 3.2.5 requires that, “[b]y the third annual surveillance the fishery-specific management system must undergo occasional external review.” Milestones are established to produce and carry out a CAP leading to a demonstration of “occasional external review” by year three. The DSCC Group contends that “occasional external review” is insufficient and the review must be independent; the term “occasional external review” is vague; and there are no measurable improvements or outcomes expected each year, no specific timeframe and no outcome and score to be achieved at any interim milestone. The short response is that the CR does not specify any level of independence that must be met; the review must occur occasionally and, indeed, the first review must occur within three years; there is no MSC requirement for interim outcome scores; and the milestones are sufficiently concrete, with stated timeframes for deliverables. Accordingly, the condition is capable of fulfillment and not unreasonable. The DSCC Group’s objections cannot be accepted.

#### IV. CONCLUSION.

123. Having considered the written submissions and supporting documentation of the parties, together with their presentations at the oral hearing, I find that WWF’s and the DSCC Group’s grounds for objection, as set forth in their NOOs, have not been established under the terms of the Objections Procedure. Therefore, the objections must be dismissed in entirety. In accordance with Section CD 2.7.1.1a of the Objections Procedure, I now confirm the determination of the CAB. The CAB shall proceed to make all necessary amendments to its

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<sup>28</sup> As noted above in paragraph 120, the sufficiency of the CAP will not be addressed in this proceeding.

<sup>29</sup> The DSCC Group’s contention that fishing must stop during the certification period starts with the mistaken premise that the fisheries are currently causing SOIH, and it is not well taken.

Final Report, and, in particular, it is directed to add a description of fishing gear and methods in the fisheries. Thereafter, the CAB shall proceed to issue a Final Public Certification Report in accordance with CR 27.19.



Eldon V.C. Greenberg  
MSC Independent Adjudicator

Dated: December 2, 2016