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Re: New Zealand Orange Roughy fishery assessment/ Use of the MSC Certification Requirements V1.3 and Default Assessment Tree

Dear Dr Trumble,

WWF welcomes your request for feedback on use of the MSC default assessment tree for the New Zealand Orange Roughy Fishery assessment. While we consider the default tree is an appropriate tool to assess most fisheries, we are concerned that some of the default performance indicators are not well-suited to unique aspects of the orange roughy fishery. Our specific concerns are outlined below for PIs 1.1.1, 1.1.2 and 2.4.1.

WWF is also concerned that there may not be sufficient information available to score the fishery according to the conventional MSC process. Based on your pre-assessment report and other published information sources relating to this fishery, it appears there may be data deficiencies for three performance indicators. We would urge the assessment team to reconsider using RBF to score PIs 2.2.1, 2.4.1 and 2.5.1.

Stock status (PI 1.1.1):

Scoring issue (a) of PI 1.1.1 requires the team to assess the stock in relation to the point where recruitment would be impaired. In our view, this is really a matter of comparing two different variables. The first variable is an assertion about our knowledge of current stock size (i.e. biomass

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or $B_{current}$ – a discrete, measurable quantity). The second measurement is an inference about population behavior. It is usually assembled from our knowledge of past recruitment patterns at varying population sizes. Both variables have uncertainty associated with them. Since the stock-recruitment relationship of orange roughy has such significant ramifications for sustainable management of New Zealand stocks, we feel it is important to disentangle these two issues. To this end, we recommend the team introduces another scoring issue under PI 1.1.1 as follows:

Scoring Issues	SG60	SG80	SG100
[NEW]	It is likely that the point where recruitment impairment occurs is known with accuracy for the stock.	It is highly likely that the point where recruitment impairment occurs is known with accuracy for the stock.	There is high degree of certainty that the point where recruitment impairment occurs is known with accuracy for the stock.
a. Stock status	It is likely that the stock is above the point where recruitment would be impaired.	It is highly likely that the stock is above the point where recruitment would be impaired.	There is a high degree of certainty that the stock is above the point where recruitment would be impaired.

Reference points (PI 1.1.2)

We question whether generic target and limit reference points described in the MSC default assessment tree are appropriate for the orange roughy fishery. Orange roughy is a deepwater species with life history attributes (slow growth, late maturation, low fecundity) that favor a low productivity fishery. And there is a high degree of uncertainty attached to most estimates of stock abundance. Target and limit reference points for orange roughy should be set at a level which is appropriate for this species category rather than following practices used for highly productive fisheries. We expect that fishery managers will be transparent in their selection of reference points. They should give explicit justification for why limit reference points (10% and 20% B_0) and target reference points (range: 30 to 40% B_0) were selected for these orange roughy fisheries. The assessment team should then evaluate the appropriateness of reference point based on whether they reflect best practice for this species category. WWF feels this is a minimum entry level (SG60) to show that a fishery meets the MSC environmental standard. To spell this out more clearly, we would propose an editorial change to the SG60 guidepost of scoring issue (a) in PI 1.1.2.

Scoring Issue (a) at SG60: “Generic limit and target reference points are **justified** based on ~~justifiable and reasonable~~ **best** practice appropriate for the species category”



It is also worth noting that the reference points for NZ orange roughy are perhaps more complicated than envisioned in the MSC default tree. The fisheries are managed according to a harvest strategy with two limit reference points: a ‘hard’ limit at 10% B_0 and a ‘soft’ limit at 20% B_0 . The harvest strategy also specifies a range of biomass target values (from 30% to 40% of B_0) rather than a single trigger value. It is still unclear to us how the team will relate these four reference points to the scoring requirements of PI 1.1.1. However, we would expect the team to adopt a conservative view during their scoring (i.e. the target RP is reached only when biomass exceeds the higher end of the range (i.e. $B_{current} > 40\% B_0$), and the limit RP is exceeded whenever biomass drops below the soft trigger point (i.e. $B_{current} < 20\% B_0$).

Habitat Outcome (PI 2.4.1)

Under PI 2.4.1, MSC requires assessment teams to evaluate fishery impacts to habitats. The NZ orange roughy fishery is a trawl fishery that operates in topologically complex coral reef habitats. By its very nature the fishery has high potential to directly impact on the form and function of benthic habitats. We are concerned that the team will not give adequate consideration to both structure and function (despite the fact that MSC requires all assessment teams to evaluate structure and function, we have seen many assessments where it wasn’t done). We feel this situation can be easily avoided by splitting the scoring issue under PI 2.4.1 so that the team can speak directly to the structure and function. This modification will help ensure that the team’s scoring rationales for PI 2.4.1 are robust and comprehensive.

PI 2.4.1 Outcome Status	The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function.		
Scoring Issues	SG60	SG80	SG100
a. Habitat status: structure	The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	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.
b. Habitat status: function	The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	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.



WWF is also concerned about how the team will apply a definition of “regional or bioregional basis” for their evaluation of impacts to benthic habitats. The pre-assessment report for NZ orange roughy implied that the team would evaluate the extent of habitat damage narrowly (i.e. only tabulated using current practices within the boundaries of select fishery management areas) whereas the fishery would be credited with taking habitat protection measures wherever and whenever they might occur within domestic seas (e.g. reporting UTF protection as the percentage of all EEZ waters closed to trawling). Obviously the team needs to find an internally consistent approach. We suggest the most reasonable scope is to consider all orange roughy fishery impacts to habitats throughout the EEZ of New Zealand – past and present.

Under PI 2.4.1 the team is required to score fishery impacts to habitat structure and function according to quantitative guidelines provided by MSC (CB3.14.5). WWF questions whether there is sufficient information for the assessment team to score PI 2.4.1 quantitatively. For example, the pre-assessment report for NZ orange roughy stated that “there have been no studies investigating whether current trawling frequencies have had adverse effects on the structure and function of benthic communities” (Black et al 2013). Although a recent ecological risk assessment (Boyd 2013) attempted to address this issue, it is still unclear whether conclusions from the workshop are robust and consistent with MSC requirements for risk assessment. We recommend that the assessment team reconsider using RBF to score PI 2.4.1.

Bycatch Species Outcome (PI 2.2.1)

Under PI 2.2.1, the team will be required to evaluate fishery impacts to main bycatch species. The pre-assessment report for NZ orange roughy identified a number of main bycatch species or species groups that would likely need to be evaluated using PSA. These groups were: slickheads (Alepocephalidae; considered as a group), chimaeras (Chimaeridae and Rhinochimaeridae; considered as a group), rattails (Macrouridae; considered as a group) deepwater skates and rays (considered as a group), morid cods (Moridae; primarily Johnson’s cod, *Halargyreus johnsonii*), shovelnose dogfish (*Deania calcea*), seal shark (*Dalatias licha*), Baxter’s dogfish (*Etmopterus baxteri*), and deepwater dogfish (considered as a group).

The recent ecological risk assessment (Boyd 2013) concluded that risks to these species/groups were low to moderate. However the pre-assessment report for NZ orange roughy said none of the species groups have sufficient information to determine abundance relative to biological limits (PI 2.2.1, scoring issue (a) at SG60). Thus we were surprised to learn that the assessment team does not propose to use RBF for this PI. It is unclear to us how the team has determined that *none* of the bycatch species will be considered ‘main’ (CB3.8.2) in the assessment. WWF takes issue with that determination on the grounds at least some of these bycatch species/groups are “of particular vulnerability” (GCB3.8.2). For example, Fishbase lists shovelnose dogfish as “high to very high vulnerability” and “very low” resilience (minimum population doubling time > 14 yrs). The orange roughy fishery alone may account for up to 40% of all catch of shovelnose dogfish in quota managed areas each year. WWF suggests the team reconsider using RBF for PI 2.2.1.



Ecosystem Outcome (PI 2.5.1)

Under PI 2.5.1, the team will be required to evaluate fishery impacts to key elements of the ecosystem. The MSC specifies that biodiversity is a key element of ecosystems. Biodiversity surveys have shown convincingly that trawls damage or destroy exposed fauna of deepsea habitats. However the implications of this remain poorly understood (Dunn, 2013).

An ecological risk assessment was recently undertaken for the NZ orange roughy fishery (Boyd 2013). The assessment report suggested that the risk of the fisheries causing serious or irreversible harm to the ecosystem is “low”. However Panel Experts disagreed over this conclusion and their final recommendation was that “more information is needed on ecosystem characteristics including the role of species, relationships between species and biodiversity.”

Given the above, WWF is concerned that there is not enough information about the New Zealand orange roughy trawl fishery to assess (with the level of certainty required by MSC in CB3.14.6.1) how fishery activities impact upon the biodiversity of the deepsea slope/seamount ecosystem. Therefore we would urge the team to reconsider using RBF for PI 2.5.1.

We look forward to your feedback and hearing how you will respond to these concerns.

Best regards,

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References

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