ORH7A

ORANGE ROUGHY: FISHERIES IMPROVEMENT PLAN

1 MARCH 2014

1. Overview: Orange Roughy Fisheries Improvement Project

DWG is progressing four orange roughy (ORH) fisheries towards MSC certification: ORH3B East & South Chatham Rise (ORH3B ESCR), ORH3B Northwest Chatham Rise (ORH3B NWCR), ORH Mid-East Coast (ORH MEC), and ORH7A.

This Fisheries Improvement Project comprises five stages for each of the four fisheries:–

- **Stage 1**: **Preparation** – Continue with the remedial work in preparation for a further MSC Pre-assessment against the current MSC Fisheries Standard. This includes work programmes to improve scientific and technical information for P1 and P2, undertaking a formal risk assessment of the environmental effects of ORH fishing against the P2 Standards and documenting performance in P3;
- **Stage 2**: **MSC Pre-Assessment** – Contract MRAG-Americas to undertake four MSC pre-assessments against the current MSC Fisheries Standard;
- **Stage 3**: **Fishery Improvement Analysis** - Consider the pre-assessment results, determine what additional information is required, and implement of a formal Fisheries Improvement Plan (FIP);
- **Stage 4: Full MSC Assessment –** Contract full assessments of each fishery against the MSC Fisheries Standard.
- **Stage 5: MSC Certification** - The fisheries achieve MSC Certification.

Stages		Deliverables and outcomes	Action Lead	Timeline	Progress
1	1	**Fishery Evaluations**: Undertake evaluations using the 'Fishsource' template and independently scored by Sustainable Fisheries Partnership (SFP)	MPI & DWG	Feb 2013	Completed
	2	**Fishery Gap Analysis**: Assess orange roughy fisheries against MSC SG80 Performance Indicators to identify potential non conformities and information gaps.	MPI & DWG	Mar 2013	Completed
	3	**Develop ORH Fisheries Pre-Assessment Improvement Action Plan:** Develop action plan to address anticipated non-conformities and information gaps. Determine deliverables, timelines, milestones & system for monitoring progress against this plan.	MPI & DWG	Mar 2013	Completed
	4	**Implement Work Programmes:** Implement work programmes resulting from the Action Plan.	MPI & DWG	Mar-Jul 2013	Completed
	5	**Assess the Environmental Effects of Fishing (AEEF):** Develop AEEF methodology; assemble expert panel; invite participants; hold workshop, produce final ORH AEEF report and make this publically available.	MPI, DWG,	Jul 2013	Completed
2	1	**MSC Pre-assessments**: Undertake MSC pre-assessments for each of the four ORH fisheries. Hold Consultation meeting with MSC Stakeholders	MRAG-Americas, MPI, DWG,	Jul 2013 – Jan 2014	Completed
3	1	**Fisheries Improvement Analysis (FIA):** based on the pre-assessment results, identify the reasons for those PIs assessed to be unlikely to meet the MSC Standard and identify remedial management actions.	MPI, DWG,	Jan-Feb 2014	Completed
	2	**Fisheries Improvement Plan (FIP):** Implement remedial management actions within an agreed and time-bound FIP using the MSC Monitoring and Benchmarking FIP Template. Once finalised, post on DWG's (and link on SFP website) for public access.	MPI, DWG,	Jan-Jul 2014	Underway
4	1	**MSC Assessment**: Undertake formal assessments of the four ORH fisheries against the MSC Fisheries Standard	MPI & DWG	Jul 2014	
5	1	**MSC Certification**: Achieve Certification of the four ORH fisheries against the MSC Standard	MPI & DWG	Jun 2015	

Stage One: Fishery Characterisations and AEEF

Characterisations of each of the four orange roughy fisheries have been completed and provided to Sustainable Fisheries Partnership (SFP) to evaluate and to post on their website.

A risk Assessment of the Environmental Effects of Fishing (AEEF) was undertaken by an Expert Panel in a workshop forum, open to all MSC Stakeholders, on 6 - 7 Aug 2013.

The AEEF Risk Assessment Report is available on the DWG's website (Boyd (2013) Assessment of Ecological Effects of four New Zealand Orange Roughy Fisheries).

Stage Two: MSC Pre-Assessments

On 22 and 23 Aug 2013, MRAG-Americas undertook detailed pre-assessments of four orange roughy fisheries against the MSC Fisheries Standard in an open workshop forum where all interested parties and MSC Stakeholders were invited to attend and participate.

The pre-assessment workshop was attended by representatives from Deepwater Group (DWG), Ministry for Primary Industries (MPI), Department of Conservation (DOC), World Wildlife Fund (WWF), National Institute of Water and Atmospheric Research (NIWA), Innovative Solutions Ltd (ISL), Clement & Associates (C&A) and Seafood New Zealand (SNZ).

MRAG-Americas provided DWG with their Pre-assessment Report for these ORH fisheries on 22 December 2013. The pre-assessment results for each Performance Indicator are in provided bins: 'red' (i.e. likely to score below 60); 'orange' (i.e. likely to score between 60 & 80); or 'green' (i.e. likely to score above 80).

The pre-assessment report is available on the DWG website(MRAG (2013) ORH Fisheries Pre-Assessment Report)

DWG held a consultation meeting with MSC Stakeholders on this Pre-assessment Report on 21 Jan 2014, to discuss the report's findings. The minutes of this meeting are available on the DWG website (Minutes)

Stage Three: Fishery Improvement Project (FIP)

There are two phases to Stage 3 of the ORH Fisheries Improvement Project:

- **Phase 1: Fishery Improvement Analyses (FIA):** Consider the findings of the Pre-Assessment Report, and the MSC Fisheries Standard and identify areas that require remedial management action;
- **Phase 2: Fisheries Improvement Plan (FIP):** Implement the remedial management actions and monitor progress according to a public, time-bound FIP.

Stage Four: MSC Full Assessment

Stage 4 of the ORH Fisheries Improvement Project requires the submission of this orange roughy fishery for full assessment by an accredited MSC Conformance Advisory Body against the MSC Fisheries Standard.

It is anticipated that the ORH7A fishery will be ready for full MSC assessment by July 2014.

Stage Five: MSC Certification

Conformance with each MSC performance Indicators (PI) and the 80 scoring guidelines (80SG) will result in the achievement of this final stage, which is to achieve MSC certification

2. ORH Fishery Improvement Analysis for ORH7A

2.1 Stage 3: Outcomes from MSC Pre-Assessment Report for the ORH7A Fishery

MSC Principle	MSC Component	MSC PI s	MSC Performance Indicators	Outcomes
1	Outcome	1.1.1	**Stock Status** - Stock at a level which maintains high productivity	60-80
		1.1.2	**Reference Points** - Appropriate limits and reference points for the stock	<60
		1.1.3	**Stock Rebuilding** - Where stock depleted - there is evidence of rebuilding	<60
	Management	1.2.1	**Harvest Strategy** - Precautionary and robust harvest strategy in place	>80
		1.2.2	**Harvest Control Rules & Tools** - Well defined harvest control rules in place	60-80
		1.2.3	**Information & Monitoring** - Relevant Information collected to support harvest strategy	>80
		1.2.4	**Assessment of Stock Status** - Assessment of stock status is adequate	<60
		P1 ALL	**Sustainability of Exploited Stock**	Fail
2	Retained Species	2.1.1	**Retained Species Outcome** - Does not cause serious or irreversible harm to retained species	>80
		2.1.2	**Retained Species Management** - Strategy in place for managing retained species	>80
		2.1.3	**Retained Species Information** - Relevant information to help manage retained species	>80
	By-catch species	2.2.1	**By-catch Species Outcome** - Does not cause serious or irreversible harm to by-catch species	60-80
		2.2.2	**By-catch Species Management** - Strategy in place for managing by-catch species	60-80
		2.2.3	**By-catch Species Information** - Relevant information to help manage by-catch species	>80
	ETP species	2.3.1	**ETP Species Outcome** - Meets national and international requirements for EPTs protection	60-80
		2.3.2	**ETP Species Management** - Precautionary management strategies in place	60-80
		2.3.3	**ETP Species Information** - Relevant information to support management of impacts on EPTs	60-80
	Habitats	2.4.1	**Habitats Outcome** - Does not cause serious or irreversible harm to habitat structure	60-80
		2.4.2	**Habitats Management** - Information is adequate to determine risk to habitat types	>80
		2.4.3	**Habitats Information** - Information adequate to determine risk to habitats	>80
	Ecosystem	2.5.1	**Ecosystem Outcome** - Does not cause serious or irreversible harm to ecosystem	>80
		2.5.2	**Ecosystem Management** - Measures are in place to mitigate risk to ecosystem	>80
		2.5.3	**Ecosystem Information** - Adequate knowledge of impacts of fishery on the ecosystem	>80
		P2 ALL	**Maintenance of Ecosystem**	Fail
3	Governance and Policy	3.1.1	**Legal/Customary Framework** - Management system exists with legal/customary framework	>80
		3.1.2	**Consultation, Roles & Responsibilities** - Management system has clear processes	>80
		3.1.3	**Long Term Objectives** - Management policy contains clear long-term objectives	>80
		3.1.4	**Incentives for Sustainable Fishing** - Management system has sustainability incentives	>80
	Fishery specific management system	3.2.1	**Fishery Specific Objectives** - Fishery has clear and specific outcome objectives	>80
		3.2.2	**Decision Making Processes** - Management system includes effective decision making	>80
		3.2.3	**Compliance & Enforcement** - Monitoring, control and surveillance mechanisms in place	>80
		3.2.4	**Research Plan** - Research plan that addresses management needs are in place	>80
		3.2.5	**Management Performance Evaluation** - Performance Evaluation processes in place	>80
		P3 ALL	**Effective Management System**	Pass

Key:	Indicative Assessment Scores	>80 (Pass)	60-80 (Condition)	<60 (Fail)	Indicative Aggregate Scores	Pass	Fail

2.2 Fishery Improvement Analysis for each PI assessed to be <80

Stage 3 of the ORH FIP includes a Fishery Improvement Analyses (FIA). Each orange roughy fishery is considered against MRAG's findings in their Pre-Assessment Report and against the MSC Performance Indicators (SG80) to identify non-conformities and information gaps. This FIA is used to inform remedial action work programmes as a component of an Fisheries Improvement Project.

Performance Indicators with scores <60

PI 1.1.2 – Limit and target reference points are appropriate for the stock	
MSC SG80 Certification Requirements	**(a)** Reference points are appropriate for the stock and can be estimated. **(b)** The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity. **(c)** The target reference point is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome. **(d)** For key low trophic level species, the target reference point takes into account the ecological role of the stock.
MRAG's Findings	The MRAG assessors noted: • The lack of rationale for the limit reference point (LRP) which is 20% B_0. • The lack of rationale for the "*appropriateness*" of the management target range which is 30-40% B_0
Responses	• Document the scientific basis for New Zealand's Harvest Strategy Standard reference points and demonstrate that 20% B_0 is the effective LRP in terms of the MSC requirements • Document the scientific basis of the appropriateness of the management target range.

PI 1.1.3 – Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe	
MSC SG80 Certification Requirements	**(b)** A rebuilding timeframe is specified for the depleted stock that is the shorter of 20 years or 2 times its generation time. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years. **(c)** There is evidence that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling or previous performance that they will be able to rebuild the stock within the specified timeframe.
MRAG's Findings	The MRAG assessors noted: • The lack of projections given the current stock status relative to B_0; • The lack of evaluation of harvest strategy against rebuild to management target with required 20 years • The lack of alternative assumptions for how assessment is conducted and provisions for future recruitment
Responses	• Develop and formalise a rebuilding plan for ORH fisheries to be implemented where the stock status is below the management target range to rebuild to the stock to a level at or above the management target within "*the shorter of 20 years or 2 times its generation time*". • Test the robustness of the rebuilding plan using simulations based on the assessment model

PI 1.2.4 – Assessment of Stock Status	
MSC SG80 Certification Requirements	**(a)** The assessment is appropriate for the stock and for the harvest control rule. **(c)** The assessment takes uncertainty into account. **(e)** The assessment of stock status is subject to peer review.
MRAG's Findings	The MRAG assessors noted: • The lack of projections given the current stock status relative to B_0; • The lack of evaluation of harvest strategy against rebuild to management target within 20 years • The lack of alternative assumptions for how assessment is conducted and provisions for future recruitment

Responses	• Undertake further biomass surveys for this fishery consistent with MPI's Science Research Standard that deliver the required information for incorporation into a stock assessment model. • Implement a stock assessment for this fishery that is peer-reviewed and meets MPI's Science Research Standard • Have the stock assessment peer-reviewed and accepted by the Deepwater Fisheries Assessment Working Group according to MPI's Science Research Standard.

Performance Indicators with scores between 60 & 80

PI 1.1.1 – The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing	
MSC SG80 Certification Requirements	**(a)** It is highly likely that the stock is above the point where recruitment would be impaired. **(b)** The stock is at or fluctuating around its target reference point.
MRAG's Findings	The MRAG assessors noted: • The lack of quantitative assessments based on fitting population dynamics models
Responses	• Demonstrate through an accepted stock assessment that the stock status is either at or above B_{MSY} or it is highly likely that the stock is above the point where recruitment would be impaired – Characterise the uncertainties between model output parameterisations – Provide rationales for the application of model output parameterisations (including uncertainties)

PI 1.2.1 – There is a robust and precautionary harvest strategy in place	
MSC SG80 Certification Requirements	**(a)** The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points. **(b)** The harvest strategy may not have been fully tested but monitoring is in place and evidence exists that it is achieving its objectives.
MRAG's Findings	The MRAG assessors noted: • The lack of analyses to demonstrate that the harvest strategy (HS) is "*responsive to the state of the stock*" or to demonstrate that the HS elements successfully "*work together towards achieving management objectives reflected in the target and limit reference points*." • The lack of analyses to demonstrate the efficacy of the HS in achieving its objectives
Responses	• Undertake analyses to demonstrate and test the harvest strategy to establish that it is responsive to the state of the stock and the stock management process; "*Such evidence would require either monitoring data which shows direct evidence for an increase in abundance or the results of projections using a stock assessment model*" (MRAG (2013) p69). • Compile and document evidence that demonstrates the harvest strategy will work in achieving its objectives

PI 1.2.2 – There are well defined and effective harvest control rules in place	
MSC SG80 Certification Requirements	**(a)** Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. **(b)** The selection of the harvest control rules takes into account the main uncertainties. **(c)** Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.
MRAG's Findings	The MRAG assessors noted: • The lack of justification for specific choices for the values of parameters (e.g. F_{MSY} = M) • The lack of documentation of the main uncertainties and the selection of the harvest control rules (HCRs) to address those uncertainties
Responses	• Document that the HCRs are "*well defined*" and is "*consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached*" SG80. • Demonstrate the appropriateness of the Harvest Strategy in meeting the 80SG, highlighting uncertainties and taking them into account

PI 2.2.1 – The fishery does not pose a risk of serious or irreversible harm to the by-catch species or species groups and does not hinder recovery of depleted by-catch species or species groups	
MSC SG80 Certification Requirements	**(a)** Main by-catch species are highly likely to be within biologically based limits (if not, go to scoring issue b below). **(b)** If main by-catch species are outside biologically based limits there is a partial strategy of demonstrably effective mitigation measures in place such that the fishery does not hinder recovery and rebuilding.
MRAG's Findings	The MRAG assessors noted: ● The lack of information to score the stock status of key by-catch species ● The lack of information to determine whether or not a species comprises 5-20% or more of the total catch of that species (e.g. rattails, deepwater dogfish)
Responses	● Provide information to demonstrate (semi-quantitatively) that by-catch species are highly likely (70%) to be within biologically based limits or there is "*evidence*" that the fishery "*does not hinder recovery and rebuilding*" (B_{LIM}) ● Identify "*vulnerable"* species and document impacts of this fishery on those species. ● Where possible document by-catches that are recorded under generic codes as species (e.g. rattails, slickheads and deepwater dogfish). ● Provide information (semi-quantitatively) to support findings and to demonstrate the nature and extent of the impacts of the orange roughy fishery on by-catch stocks.

PI 2.2.2 – There is a strategy in place for managing by-catch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to by-catch populations	
MSC SG80 Certification Requirements	**(a)** There is a partial strategy in place, if necessary, for managing by-catch species at levels which are highly likely to be within biologically based limits or to ensure that the fishery does not hinder their recovery. **(b)** There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or the species involved. **(c)** There is some evidence that the partial strategy is being implemented successfully.
MRAG's Findings	The MRAG assessors note: ● The lack of information for non-QMS species; ● The lack of a partial strategy that is expected to maintain by-catch species within biologically based limits ● The lack of evidence that demonstrates confidence in the strategy
Responses	● Formalise a by-catch management strategy that provides for "*the [expectation] to maintain main by-catch species at levels which are highly likely (70%) to be within biologically based limits or to ensure that the fishery does not hinder their recovery*." ● **QMS Species** – Document the management strategy for QMS and vulnerable species (PI 2.2.1) which articulates QMS entry (QMS entry Standard) – Demonstrate how the QMS manages stock status, the role of deemed values, ACE values and ACE availability constrains catches ● **Non-QMS Species** – Demonstrate strategy for the management of non-QMS species are managed within biologically based limits – Document the policy for QMS entry (by non-QMS stocks, providing examples of recent QMS entries) – Review and document activities and plans being developed under the new (2014) NPOA – Sharks for vulnerable elasmobranch by-catch species.

PI 2.3.1 – The fishery meets national and international requirements for protection of ETP species. The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species.	
MSC SG80 Certification Requirements	**(a)** The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species. **(b)** Direct effects are highly unlikely to create unacceptable impacts to ETP species. **(c)** Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.
MRAG's Findings	The MRAG assessors noted: ● The lack of robust distributional information of several cold water coral species (that overlap with the ORH Fishery) outside fished areas ● The lack of information defining the level of impacts with fisheries of protected corals, species identification, quantities taken and distribution ● The lack of any rationale to quantitatively determine if any impacts are such that they pose a risk of serious or irreversible harm to ETP coral species
Responses	● Document national (and relevant international) requirements for the protection of corals, demonstrating that direct effects (considering also indirect effects) are highly unlikely to create unacceptable impacts (impacts that hinder recovery or rebuilding) to ETP coral species. – Undertake a desktop analysis of the nature and extent of information that has been used in modelling coral density distributions, including (where possible) the distribution of corals within fished areas, outside fished areas, and within protected areas (BPAs and Seamount Closures);; – Undertake desktop analysis of the distribution of coral genera/species in the New Zealand EEZ and within the ORH7A fishery, coral taken within the ORH7A fishery and determine (where possible) which genera/species are affected most by the ORH7A fishery; – Undertake some semi-quantitative analysis to demonstrate the nature and extent of the interactions with corals in areas that are fished (taking into account recovery and closed areas); and determine if effects of the fishery are highly likely to be within limits of these national (and international) requirements for protection of ETP coral species, are highly unlikely to create unacceptable impacts to ETP coral species and consider indirect effects.

PI 2.3.2 – The fishery has in place precautionary management strategies designed to (1) meet national and international requirements; (2) ensure the fishery does not pose a risk of serious or irreversible harm to ETP species; (3) ensure the fishery does not hinder recovery of ETP species; and (4) minimise mortality of ETP species.	
MSC SG80 Certification Requirements	**(a)** There is a strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality that is designed to be highly likely to achieve national and international requirements for the protection of ETP species. **(b)** There is an objective basis for confidence that the strategy will work, based on information directly about the fishery and/or the species involved. **(c)** There is evidence that the strategy is being implemented successfully.
MRAG's Findings	The MRAG assessors noted: ● That, while there are elements of a precautionary strategy in place (for protected corals), that this does not constitute a formal strategy, ● The lack of an overall management plan for protected corals, ● The lack of a strategy to minimise coral mortality, especially for new areas
Responses	● Document all relevant information and formalise a management strategy for ETP coral species that provides for management measures that "*minimise mortality, [and] which is designed to be highly likely to achieve national and international requirements for the protection of ETP species*" taken into account: – The principles and mechanism behind BPAs (i.e. percentages of each marine environmental habitat class (MEC)) – The principles and mechanism behind Seamount Closures (e.g. UTFs of high coral abundance and benthic biodiversity) – Measures that avoid, mitigate or, minimise interactions with corals (including reporting, monitoring and assessment) that is consistent with the requirements of the Fisheries Act 1996. ● Demonstrate the *"objective basis for confidence"* the efficacy of this strategy

PI 2.3.3 – Relevant information is collected to support the management of fishery impacts on ETP species, including: (1) information for the development of the management strategy; (2) information to assess the effectiveness of the management strategy; and (3) information to determine the outcome status of ETP species.	
MSC SG80 Certification Requirements	**(a)** Sufficient data are available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species. **(b)** Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species. **(c)** Information is sufficient to measure trends and support a full strategy to manage impacts on ETP species.
MRAG's Findings	The MRAG assessors noted: ● There is insufficient quantitative information in some areas; ● The lack of assessment of the level of threat by the orange roughy fishing on corals generally and on reef-forming stony corals in particular
Responses	● Document the management strategy to demonstrate the sufficiency of information "*to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP [coral] species"* so as to "*determine whether the fishery may be a threat to protection and recovery of [protected coral] species*." ● Quantitatively determine the distributions of protected species within the New Zealand EEZ (to Generic level) ● Quantitatively assess the nature and extent of impact by fishery of these protected coral species

2.4.1 – The fishery is highly unlikely (within 30% probability) to reduce habitat structure and function to a point where there would be serious or irreversible harm [considered on a regional or bioregional basis].	
MSC SG80 Certification Requirements	**(a)** The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
MRAG's Findings	The MRAG assessors noted: ● That although geomorphology and operational aspects of bottom trawling had the effect of confining trawl tows spatially to the orange roughy trawl grounds, bottom trawling could occur outside the trawl grounds anytime ● The lack of robust understanding of the distribution of benthic habitats relative to orange roughy bottom trawl paths, ● The lack of robust understanding of the homogeneity/heterogeneity of the benthic habitats on various UTFs ● The lack of information to assess whether unfished areas with remaining habitat is sufficient to prevent serious or irreversible harm to habitats that overlap with fished areas
Responses	● Undertake an analysis of the habitats (centred on identifying their structure and function) that overlap with the distributional range of this orange roughy fishery. – As New Zealand's orange roughy fisheries fall within the lower bathyal New Zealand Kermadec bio-geographical province (UNESCO (2009)), the entire distributional range of orange roughy and the orange roughy fishery within this 'bio-geographic area habitat should be taken into account – Where changes in substrate type, geomorphology and dominant biota type describe a habitat type that differs from the New Zealand Kermadec bio-geographic area (e.g. UTFs), then any such areas will be considered to be different habitat types – Summarise information on the extent and homogeneity/heterogeneity of particular habitat types on UTFs ● Undertake analyses of the impacts this orange roughy fishery on those habitats, and determine quantitatively whether or not there is "*serious or irreversible harm*" to the ***"structure and function"*** (i.e. not the habitat itself) taking into account ("*on a regional or bioregional basis"*) the area covered by bottom-trawl tow paths, the areas that are not fished, areas that are no longer fished, and the areas that are closed to fishing for protection of the benthic biodiversity.

2.4.2 – 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.	
MSC SG80 Certification Requirements	**(a)** There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above. **(b)** There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved. **(c)** There is some evidence that the partial strategy is being implemented successfully.
MRAG's Findings	The MRAG assessors noted: ● The absence of a formal benthic management plan ● The lack of robust understanding of the distribution of benthic habitats relative to the footprint, ● The lack of robust understanding of the nature of the benthic habitats on various UTFs (that indicate their homogeneity/heterogeneity) ● The lack of information to assess whether unfished areas with remaining habitat is sufficient to prevent serious or irreversible harm to habitats that overlap with fished areas
Responses	● Bring together all relevant information and formalise a comprehensive management strategy for managing the impact of the fishery on habitat types: – Articulate the principles and mechanisms behind the strategy, including BPAs (e.g. percentages of each MEC habitat class) and Seamount Closures (e.g. UTFs of high coral abundance and benthic biodiversity), and incorporate these principles and mechanism into the New Zealand's EEZ Spatial Management component of a comprehensive management strategy. – Articulate a precautionary component of the strategy monitoring and assessing the nature and extent of habitat impacts to avoid, minimise or mitigate interactions with new areas of significant abundance benthic habitat (which is consistent with the requirements of the Fisheries Act 1996). ● Demonstrate that there *"is some objective basis for confidence"* the efficacy of this strategy

3. FIP Remedial Management Action Plan

MSC Principle 1: Stock Status

No.	Proposed Remedial Action	MSC Fisheries Standard PI	Priority	Responsibility	Completion
1.1	Complete Biomass Survey for this orange roughy fishery	1.1.1, 1.1.3, & 1.2.4	High	MPI & DWG	Mar 2014
1.2	Complete a Stock Assessment for this orange roughy fishery using an agreed methodology	1.1.1, 1.2.4	High	MPI, DWG & ISL	Mar 2014
1.3	Acceptance of this stock assessment and outputs by DWFAWG and MPI Plenary processes	1.1.1, 1.2.4	High	MPI & DWG, & ISL	May 2014
1.4	Undertake simulation modelling to test the harvest strategy and harvest control rules against the MSC Fisheries Standard	1.1.2, 1.1.3, 1.2.1, 1.2.2	High	MPI & DWG, & ISL	May 2014
1.5	Undertake a high level review of the New Zealand orange roughy stock assessment process	1.1.2, 1.1.3, 1.2.1, 1.2.2	Medium	MPI, DWG, R Hilborn, P Starr	Jun 2014

MSC Principle 2: Ecosystem Management

No.	Proposed Remedial Action	MSC Fisheries Standard PI	Priority	Responsibility	Completion
2.2	Undertake analyses to provide metrics of main/secondary by-catch species in the orange roughy fishery area and in the EEZ	2.2.1 & 2.2.2	High	MPI, & DWG	May 2014
2.2	Document management strategy for secondary by-catch species in this orange roughy fishery and in the EEZ	2.2.1 & 2.2.2	High	MPI, & DWG	Jun 2014
2.3	Quantitatively determine distributions of protected coral species within this orange roughy fishery and the New Zealand EEZ	2.3.1 & 2.3.3	High	MPI, & DWG	May 2014
2.4	Quantitatively assess nature and extent of impacts on protected corals species by the orange roughy fishery	2.3.1 & 2.3.3	High	MPI, & DWG	May 2014
2.5	Document the management strategy to provide information and outline management measures for ETP coral species	2.3.1, 2.3.2 & 2.3.3	High	MPI, & DWG	Jun 2014
2.6	Assess the nature and extent of impacts by orange roughy bottom trawls on the structure and function of habitats that overlap this fishery	2.4.1 & 2.4.3	High	MPI & DWG	May 2014
2.7	Document the management strategy to provide information and outline management framework for managing benthic habitats that overlap with this orange roughy fishery	2.4.2 & 2.4.3	High	MPI, & DWG	Jul 2014