Fishery Improvement Plan
BOE3A Oreo Trawl Fishery

Version 2: July 2016

Version 1: August 2015

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Overview

Deepwater Group (DWG) and the Ministry for Primary Industries (MPI) are committed to the ongoing sustainable management of New Zealand's deepwater fisheries. To this end we have jointly embarked on a Fisheries Certification Programme (FCP) with the objective of achieving independent certification of New Zealand's key deepwater fisheries (Figure 1). Our FCP is a four-staged work programme and a summary of this process to date can be seen on our website. As part of this programme, three key oreo fisheries are in formal Fishery Improvement Plans (FIP). These are: Black Oreo trawl fishery (BOE3A), Smooth Oreo trawl fishery (SSO3A), and Smooth Oreo trawl fishery (SSO4).

This FIP for BOE3A was provided to MSC Stakeholders for their consideration during June and July 2015. DWG has developed this FIP using tools and templates provided by MSC to establish a public, transparent, inclusive and stepwise approach towards MSC certification.

The objective of this FIP is to ensure the performance of this fishery meets the MSC Fisheries Standard and subsequently achieves MSC certification. This FIP provides external observers the ability to monitor fisheries improvement, to track progress, and to assess fisheries performance against the MSC Fisheries Standard.

The following sections provide further details on BOE3A FIP including a Gap Analysis and Remedial Action Plan.

BOE3A is currently progressing through Stage 2 Phase 2 FIP (see Figure 1 and Table 1). This involves remedial management actions and monitoring progress according to a public, time-bound FIP. This FIP will be updated and made available on our website along with all supporting documentation.

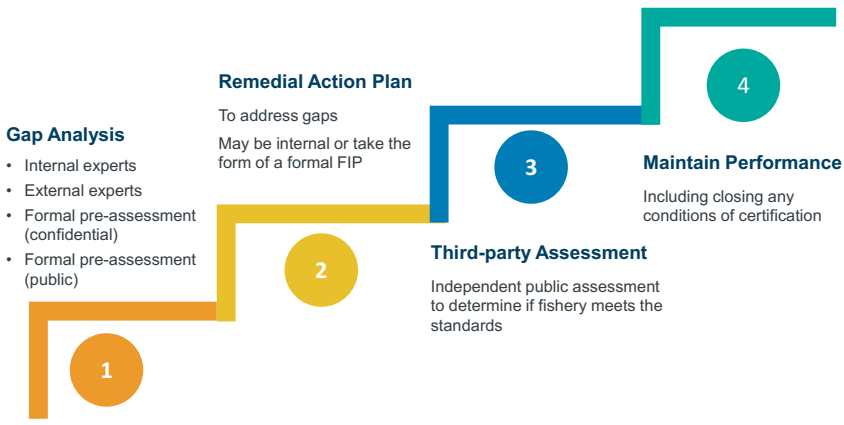

Figure 1 Deepwater Group's Fisheries Certification Programme Stages

Table 1 Timelines and milestones for the Fisheries Certification Programme for BOE3A

Fisheries Certification Stage	Deliverables and Outcomes	Action Lead	Timelines for Milestone	Progress
Gap Analysis 1	**Phase 1 – MSC Confidential Pre-assessments:** In September 2009 a Conformity Assessment Body (CAB) undertook a high level confidential pre-assessment of BOE3A against the MSC Fisheries Standard. The performance of this fishery was reviewed against the MSC Fisheries Standard by DWG and MPI in October 2014 and in April 2015.	DWG & MPI	Sept 2009 Oct 2014 April 2015	Completed ✓
	Phase 2 – Fishery Gap Analysis: Assessed BOE3A against MSC Fisheries Standard to identify potential non-conformities and information gaps.	DWG & MPI	Oct 2014-Apr 2015	Completed ✓
	Phase 3 – Fishery Evaluations: Completed on the 'Fishsource' template. Provided Sustainable Fisheries Partnership (SFP) with current information, for evaluation and for SFP to post to their FishSource™ website. Published relevant documents on the DWG website.	DWG & MPI	Nov 2014-Apr 2015	Completed ✓
Remedial Action Plan 2	**Phase 1 – Fishery Improvement Analysis:** Identified reasons why the CAB pre-assessment identified certain Performance Indicators as unlikely to meet the MSC Fisheries Standard. Identified remedial management actions. Consulted with MSC Stakeholders.	DWG & MPI	Apr 2015	Completed ✓
	Phase 2 – Fishery Improvement Plan: Implement remedial management actions within an agreed and time-bound plan using the MSC Monitoring and Benchmarking FIP Template. Once finalised, posted with SFP for public viewing.	DWG & MPI	Apr 2015-Jul 2021	Remedial Actions In process ⚙
Third Party Assessment 3	**Phase 1 – MSC Assessment:** Undertook formal assessment of BOE3A against the MSC Fisheries Standard.	CAB, DWG & MPI	Oct 2021	
	Phase 2 – MSC Certification: Achieved certification of the BOE3A against the MSC Fisheries Standard.	DWG & MPI	Dec 2023	

Gap Analysis

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The first three phases have been completed:

- Phase 1 MSC Confidential Pre-assessments
- Phase 2 Fishery Gap Analysis
- Phase 3 Fishery Evaluations.

This version of the FIP addresses the outcomes of the pre-assessment and the reviews of these in 2014 and 2015.

Phase 3: MSC Confidential Pre-assessment

In September 2009, Moody Marine Ltd (now Intertek Fisheries Certification Ltd) undertook a confidential pre-assessment of the BOE3A fishery against the MSC Fisheries Standard.

Subsequent reviews of this pre-assessment were undertaken (October 2014 and April 2015) and the fishery was rated for each Performance Indicator (PI) and a detailed rationale was provided. The pre-assessment and reviews identified areas of non-conformity to provide an indication of the work required for the fishery to meet the MSC SG80 and SG60 Certification Requirements.

The compiled outcomes from Intertek Fisheries Certification Ltd's confidential pre-assessment and subsequent October 2014 and April 2015 reviews are summarised in Table 2. This is a snapshot of the fishery and results for each PI are categorised as:

- Red = likely to score below 60
- Orange = likely to score between 60 & 80
- Green = likely to score above 80.

Table 2 BOE3A pre-assessment results

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

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

Remedial Action Plan

2

There are two phases to the Remedial Action Plan:

- Phase 1 Fishery Improvement Analysis
- Phase 2 Fishery Improvement Plan.

Phase 1 Fishery Improvement Analysis

The performance of BOE3A has been considered against the MSC Fisheries Standard to identify non-conformities and information gaps against the MSC Performance Indicators (SG80 and SG60) (Appendix 1).

Phase 2 Fishery Improvement Plan

This involves implementing the remedial management actions and monitoring progress according to a public, time-bound FIP.

Table 3 presents management actions to remedy identified gaps in Phase 1 of the Remedial Action Plan.

Table 4 gives timelines for each of the remedial management actions.

2016 Progress Update

Refer to Table 5 for an update on progress made to July 2016 towards completing remedial management actions.

Table 3 Remedial management actions and links to MSC Performance Indicators

ACTIONS		ACTION LEAD & PARTNERS	Links to MSC Performance Indicators								
			P1 Target stocks							P2 Ecosystem Components	
			1.1.1	1.1.2	1.1.3	1.2.1	1.2.2	1.2.3	1.2.4	2.2.1	2.3.1
1. Stock assessment											
1.1	Review methodologies and undertake biomass surveys.	DWG & MPI									
1.2	Validate ageing information and estimation method.	DWG & MPI									
1.3	Develop and update stock assessment methodology.	DWG & MPI									
1.4	Acceptance of stock assessment methods.	DWG & MPI									
1.5	Conduct and review MSE, HS, and HCR.	DWG & MPI									
1.6	Implement HS and HCR.	DWG & MPI									
1.7	Review the need for, and implement if necessary, a rebuilding plan.	DWG & MPI									
2. Habitats and ecosystems											
2.1	Analyse fish bycatch to identify minor and major species.	DWG & MPI									
2.2	Document the management strategy for main/minor bycatch species.	DWG & MPI									
2.3	Quantitative determine ETP coral distributions within the fishery, the bioregion, and the EEZ.	DWG & MPI									
2.4	Assess the nature and extent of impact by the fishery on ETP corals.	DWG & MPI									
2.5	Document the management strategy for impacts on ETP corals.	DWG & MPI									

Notes: DWG (Deepwater Grup Ltd.) MPI (Ministry for Primary Industries for New Zealand)

Table 4 Timelines for each of the remedial management actions as revised July 2016

		Progress (see key below)													
		2015		2016		2017		2018		2019		2020		2021	
		H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
MSC Principle 1: Stock Status															
1.1	Review methodologies and undertake biomass surveys.														
1.2	Validate ageing information and estimation method.														
1.3	Develop and update stock assessment methodology.														
1.4	Acceptance of stock assessment methods.														
1.5	Conduct and review MSE, HS, and HCR.														
1.6	Implement HS and HCR.														
1.7	Review the need for, and implement if necessary, a rebuilding plan.														
MSC Principle 2: Ecosystem Management															
2.1	Analyse fish bycatch to identify minor and major species.														
2.2	Document the management strategy for main/minor bycatch species.														
2.3	Quantitative determine ETP coral distributions within the fishery, the bioregion, and the EEZ.														
2.4	Assess the nature and extent of impact by the fishery on ETP corals.														
2.5	Document the management strategy for impacts on ETP corals.														

In-progress | Completed | Planned completion date

Table 5 2016 update on remedial management actions

MSC Principle 1: Stock Status		Progress Update 2016
1.1	Review methodologies and undertake biomass surveys.	In progress. The next biomass survey is scheduled for 2019.
1.2	Validate ageing information and estimation method.	In-progress. Results of this work to be considered by DWFAWF in Sept/Oct 2016 and finalised by July 2017.
1.3	Develop and update stock assessment methodology.	Scheduled for 2020 H2.
1.4	Acceptance of stock assessment methods.	
1.5	Conduct and review MSE, HS, and HCR.	Actions are scheduled commence once stock assessment is updated in 2020-21
1.6	Implement HS and HCR.	
1.7	Review the need for, and implement if necessary, a rebuilding plan.	
MSC Principle 2: Ecosystem Management		**Progress Update 2016**
2.1	Analyse fish bycatch to identify minor and major species.	Fish and invertebrate bycatch and discards are reviewed every five years by MPI. The update of this is expected October 2016.
2.2	Document the management strategy for main/minor bycatch species.	Actions are scheduled commence once Action 2.1 is completed.
2.3	Quantitative determine ETP coral distributions within the fishery, the bioregion, and the EEZ.	A coral distribution prediction model was developed in 2015 (see: http://deepwatergroup.org/wp-content/uploads/2014/08/NIWA-2015-Assessment-of-orange-roughy-and-oreo-trawl-footprint-in-relation-to-protected-coral-species-distribution.pdf). This will be applied to the fishery and completed by 2018 H1.
2.4	Assess the nature and extent of impact by the fishery on ETP corals.	The assessment was completed for the oreo fisheries cumulative trawl footprint within the EEZ and bioregion (see above link). An assessment of the fishery specific impact on ETP corals to be undertaken and completed by 2018 H1.
2.5	Document the management strategy for impacts on ETP corals.	This is scheduled to take place in 2017-18

Third-party Assessment

MSC Assessment

Stage 3 of the BOE3A FCP requires the submission of this fishery for full MSC Assessment by an accredited MSC Conformity Assessment Body against the MSC Fisheries Standard. It is anticipated that the BOE3A fishery will be ready for full MSC assessment in October 2021.

MSC Certification

Certification of BOE3A against the MSC Fisheries Standard is achieved, the report is published and appropriate certificate(s) granted. Any Conditions of Certification laid out in the certification report will be addressed by managers within the agreed timeframes. It is anticipated that BOE3A will complete the full MSC assessment process by December 2023.

Appendix 1

BOE3A Fishery Improvement Analysis (Actions are referenced to Tables 3 and 4)

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.	
Gap Analysis Findings	The Gap Analysis found that: • There is no accepted stock assessment. Stock status is unknown.	
Responses	• Develop an appropriate and accepted stock assessment that enables the status of the stock to be determined relative to the stock reference points. Establish that the stock is at or fluctuating about its target reference point, is highly likely to be above the point where recruitment would be impaired, or appropriate remedial action has been taken.	**Action 1.1 - 1.4**
PI 1.1.2 – Limit and target reference points are appropriate for the stock		
MSC SG80 Certification Requirements	c) Reference points are appropriate for the stock and can be estimated. d) The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity. e) 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. f) For key low trophic level species, the target reference point takes into account the ecological role of the stock.	
Gap Analysis Findings	The Gap Analysis found that: • Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category. • The limit reference point is not set above the level at which there is an appreciable risk of impairing reproductive capacity. • 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.	
Responses	• Undertake a Management Strategy Evaluation (MSE) to establish and test Management Procedures and harvest control rules that meet the requirements of PI 1.1.2.	**Action 1.2 & 1.5 - 1.6**

PI 1.1.3 – Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe		
MSC SG80 Certification Requirements	a) 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. b) 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.	
Gap Analysis Findings	The Gap Analysis found that: • No evidence that the stock was depleted therefore this PI was not scored.	
Responses	• Develop and implement a rebuilding plan for the BOE3A fishery. • Test the robustness of the rebuilding plan using the MSE based on the stock assessment model.	**1.1 – 1.2 & 1.5 – 1.7**
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.	
Gap Analysis Findings	The Gap Analysis found that: • 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 a Management Strategy Evaluation to develop and test a Management Procedure and harvest control rules to establish that these are responsive to the state of the stock and the stock management processes.	**Actions 1.2 & 1.5 - 1.6**

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.	
Gap Analysis Findings	The Gap Analysis found 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. • The harvest control rule, as it is implemented for New Zealand fish stocks and for oreos in particular, is consistent with the aims of the harvest strategy standard, although it is not fully-specified at present. • The projections on which management advice is based account for uncertainty regarding the parameters of the "best" model as well as uncertainty in future recruitment success. • Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.	
Responses	• Undertake a Management Strategy Evaluation to establish and test Management Procedures and harvest control rules that meet the requirements of PI 1.2.2	**Actions 1.2 & 1.5 - 1.6**

PI 1.2.3 – Information and Monitoring		
MSC SG80 Certification Requirements	(a) Sufficient relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy. (b) Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule. (c) There is good information on all other fishery removals from the stock.	
Gap Analysis Findings	The Gap Analysis found that: • The fishery lacks information related to stock structure, including validating ageing information and age estimation methodology.	
Responses	• Formalise stock structure information for BOE3A (including information on natural mortality, growth and ageing). • Validate age estimation method for black oreo.	**Actions 1.2**

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. b) The assessment takes uncertainty into account. c) The assessment of stock status is subject to peer review.	
Gap Analysis Findings	The Gap Analysis found the following: • The assessment is appropriate for the stock and for the harvest control rule and takes into account the major features relevant to the biology of the species and the nature of the fishery. • The assessment takes uncertainty into account. Key sources of uncertainty include: (a) uncertainty regarding the target strength of black oreo, (b) some of the assumptions regarding migration processes, and (c) uncertainty in the estimate of natural mortality. • The stock assessment is subject to peer review. The assessment was reviewed by the Deepwater Working Group.	
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.	**Actions 1.1 & 1.3 – 1.5**

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		
MSC SG80 Certification Requirements	a) Main bycatch species are highly likely to be within biologically based limits (if not, go to scoring issue (b) below). b) If main bycatch 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.	
Gap Analysis Findings	The Gap Analysis found that: • There was a lack of information to score the stock status of key bycatch species. • There was a lack of information to determine whether or not a species comprises 5-20% or more of the total catch of that species.	
Responses	• Provide information to demonstrate (semi-quantitatively) that bycatch 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 bycatch that are recorded under generic codes as species. • Provide information (semi-quantitatively) to support findings and to demonstrate the nature and extent of the impacts of the black oreo fishery on bycatch stocks.	**Actions 2.1 & 2.2**

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	1. 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. 2. Direct effects are highly unlikely to create unacceptable impacts to ETP species. 3. Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.	
Gap Analysis Findings	The Gap Analysis found that: • There was a lack of robust distributional information of several cold water coral species (that overlap with the OEO Fishery) outside fished areas. • There was a lack of information describing the level of impacts with fisheries of protected corals, species identification, quantities taken and distribution. • There was a 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 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 a desktop analysis of the distribution of coral genera/species in the New Zealand EEZ and within the BOE3A fishery, coral taken within the BOE3A fishery and determine (where possible) which genera/species are affected most by the BOE3A fishery. • Undertake a 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). Determine if effects of the fishery are: highly likely to be within limits of national (and international) requirements for protection of ETP coral species; highly unlikely to create unacceptable impacts to ETP coral species; and, consider indirect effects.	**Actions 2.3 - 2.5**