



Fishery Improvement Plan

SSO4 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 (BOE 3A), Smooth Oreo Trawl Fishery (SSO3A), and Smooth Oreo Trawl Fishery (SSO4).

This FIP for SSO4 was provided to MSC Stakeholders for their consideration during June and July 2015. DWG has developed this FIP using tools and templates provided by the 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 detail on the SSO4 FIP including a Gap Analysis and Remedial Action Plan.

SSO4 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.

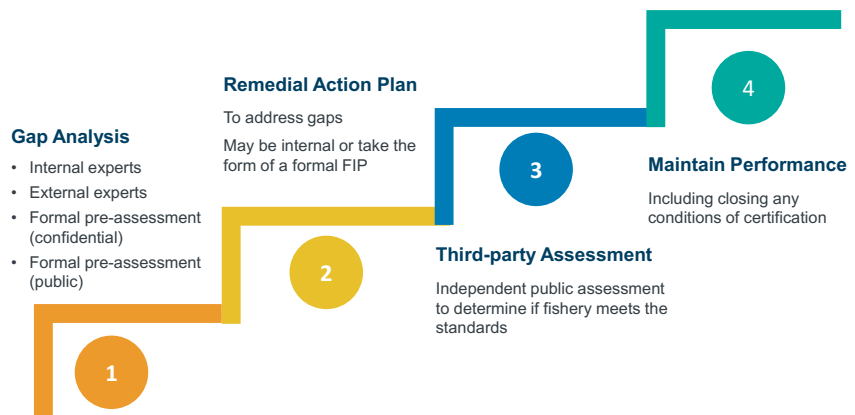










Figure 1 Deepwater Group's Fisheries Certification Programme stages

Table 1 Timelines and milestones for the Fisheries Certification Programme for SSO4

Fisheries Certification Stage	Deliverables and Outcomes	Action Lead	Timelines for Milestone	Progress
Gap Analysis 	Phase 1 – MSC Confidential Pre-assessments: In September 2009 a Conformity Assessment Body (CAB) undertook a high level confidential pre-assessment of SSO4 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 SSO4 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- May 2015	Completed 
Remedial Action Plan 	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: Implemented 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- Nov 2019	Remedial Actions In Progress 
Third Party Assessment 	Phase 1 – MSC Assessment: Formal assessment of the SSO4 fishery against the MSC Fisheries Standard.	CAB, DWG & MPI	Dec 2019	
	Phase 2 – MSC Certification: Achieved certification of the SSO4 fishery against the MSC Fisheries Standard.	DWG & MPI	Dec 2020	

Gap Analysis



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 review 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 SSO4 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.
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Table 2 SSO4 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	Yellow				
	1.1.2	Reference Points: Appropriate limits and reference points for the stock	Yellow				
	1.1.3	Stock Rebuilding: Where stock depleted - there is evidence of rebuilding	Red				
Management	1.2.1	Harvest Strategy: Precautionary and robust harvest strategy in place	Yellow				
	1.2.2	Harvest Control Rules & Tools: Well defined harvest control rules in place	Yellow				
	1.2.3	Information & Monitoring: Relevant Information collected to support harvest strategy	Yellow				
	1.2.4	Assessment of Stock Status: Assessment of stock status is adequate	Green				
	P1 ALL	Sustainability of Exploited Stock	Red				
Retained Species	2.1.1	Retained Species Outcome: Does not cause serious or irreversible harm to retained species	Green				
	2.1.2	Retained Species Management: Strategy in place for managing retained species	Green				
	2.1.3	Retained Species Information: Relevant information to help manage retained species	Green				
Bycatch species	2.2.1	Bycatch Species Outcome: Does not cause serious or irreversible harm to bycatch species	Yellow				
	2.2.2	Bycatch Species Management: Strategy in place for managing bycatch species	Green				
	2.2.3	Bycatch Species Information: Relevant information to help manage bycatch species	Green				
ETP species	2.3.1	ETP Species Outcome: Meets national and international requirements for ETP protection	Yellow				
	2.3.2	ETP Species Management: Precautionary management strategies in place	Green				
	2.3.3	ETP Species Information: Relevant information to support management of impacts	Green				
Habitats	2.4.1	Habitats Outcome: Does not cause serious or irreversible harm to habitat structure	Green				
	2.4.2	Habitats Management: Information is adequate to determine risk to habitat types	Green				
	2.4.3	Habitats Information: Information adequate to determine risk to habitats	Green				
Ecosystem	2.5.1	Ecosystem Outcome: Does not cause serious or irreversible harm to ecosystem	Green				
	2.5.2	Ecosystem Management: Measures are in place to mitigate risk to ecosystem	Green				
	2.5.3	Ecosystem Information: Adequate knowledge of impacts of fishery on the ecosystem	Green				
	P2 ALL	Maintenance of Ecosystem	Light Green				
Governance and Policy	3.1.1	Legal/Customary Framework: Management system exists with legal/customary framework	Green				
	3.1.2	Consultation, Roles & Responsibilities: Management system has clear processes	Green				
	3.1.3	Long Term Objectives: Management policy contains clear long-term objectives	Green				
	3.1.4	Incentives for Sustainable Fishing: Management system has sustainability incentives	Green				
Fishery specific management system	3.2.1	Fishery Specific Objectives: Fishery has clear and specific outcome objectives	Green				
	3.2.2	Decision Making Processes: Management system includes effective decision making	Green				
	3.2.3	Compliance & Enforcement: Monitoring, control and surveillance mechanisms in place	Green				
	3.2.4	Research Plan: Research plan that addresses management needs are in place	Green				
	3.2.5	Management Performance Evaluation: Performance Evaluation processes in place	Green				
	P3 ALL	Effective Management System	Light Green				
Key:	Indicative Assessment Scores	>80 (Pass)	60-80 (Condition)	<60 (Fail)	Indicative Aggregate Scores	Pass	Fail

Remedial Action Plan



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 SSO4 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

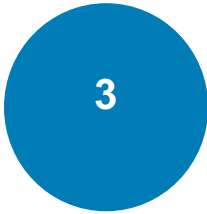
		Progress (see key below)											
		2015		2016		2017		2018		2019		2020	
		H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
MSC Principle 1: Stock Status													
1.1	Review methodologies and undertake biomass surveys.				In-progress	Planned completion date							
1.2	Validate ageing information and estimation method.				In-progress	Planned completion date							
1.3	Develop and update stock assessment methodology.			In-progress	In-progress	Planned completion date							
1.4	Acceptance of stock assessment methods.						Planned completion date						
1.5	Conduct and review MSE, HS, and HCR.					In-progress	Planned completion date						
1.6	Implement HS and HCR.					In-progress	Planned completion date						
1.7	Review the need for, and implement if necessary, a rebuilding plan.					In-progress	Planned completion date						
MSC Principle 2: Ecosystem Management													
2.1	Analyse fish bycatch to identify minor and major species.			In-progress	Planned completion date								
2.2	Document the management strategy for main/minor bycatch species.					In-progress	Planned completion date						
2.3	Quantitative determine ETP coral distributions within the fishery, the bioregion, and the EEZ.	In-progress	In-progress					In-progress	Planned completion date				
2.4	Assess the nature and extent of impact by the fishery on ETP corals.	In-progress	In-progress					In-progress	Planned completion date				
2.5	Document the management strategy for impacts on ETP corals.							In-progress	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. Outputs from the review are to be considered by DWFAWG in August/September 2016. Biomass survey is scheduled in November 2016, results to be considered by DWFAWG in 2017 H1.
1.2	Validate ageing information and estimation method.	In-progress. Results of this work to be considered by DWFAWG mid-late 2017.
1.3	Develop and update stock assessment methodology.	<p>A stock assessment is schedule to be completed 2017 H1 using the biomass survey results of 2016. MSE, HS, and HCR work will take place using the results from the stock assessment.</p>
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		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 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 SSO4 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 SSO4 fishery will be ready for full MSC Assessment in December 2019.

MSC Certification

Certification of SSO4 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 SSO4 will complete the full MSC Assessment process by December 2020.

Appendix 1

SSO4 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: <ul style="list-style-type: none"> The stock is estimated to be below the current management target of 40% B_0 An updated stock assessment for SSO4 was finalised in July 2014. The assessment estimates SSO4 stock status to be 27% B_0. The assessment indicates that, under the current catch, biomass is declining toward the Soft Limit (20% B_0). 	
Responses	<ul style="list-style-type: none"> Develop and implement a Management Strategy Evaluation to better determine the management targets Develop and implement a rebuilding plan for SSO4 Demonstrate through an accepted stock assessment that the stock status is highly likely to be above the point at which recruitment would be impaired. 	Actions 1.1 & 1.3 – 1.4
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.	
Gap Analysis Findings	The Gap Analysis found that: <ul style="list-style-type: none"> The stock demonstrates the limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity. 	
Responses	<ul style="list-style-type: none"> Undertake a Management Strategy Evaluation 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: <ul style="list-style-type: none"> • The current biomass is below the management target and needs rebuilding • The 2014 stock assessment estimates biomass will continue to decline under current catch levels. 	
Responses	<ul style="list-style-type: none"> • Develop and implement a rebuilding plan for the SSO4 fishery • Test the robustness of the rebuilding plan using the Management Strategy Evaluation based on the stock assessment model. 	Action 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: <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> (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	<p>The Gap Analysis found that:</p> <ul style="list-style-type: none"> • 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 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 harvest control rule applied to oreos is less well-specified than that for orange roughy. • There is a lack of documentation of the main uncertainties for the SSO4 fishery and the selection of the harvest control rules to address those uncertainties. • There is a lack of evidence indicating that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules. 	
Responses	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> (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	<p>The Gap Analysis found that:</p> <ul style="list-style-type: none"> • The fishery lacks information related to stock structure, including validating ageing information and age estimation methodology. 	
Responses	<ul style="list-style-type: none"> • Formalise stock structure information for SSO4 (including information on natural mortality, growth and ageing) • Validate age estimation method for smooth oreo. 	Action 1.2

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

<p>MSC SG80 Certification Requirements</p>	<p>a) Main bycatch species are highly likely to be within biologically based limits (if not, go to scoring issue (b) below)</p> <p>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.</p>	
<p>Gap Analysis Findings</p>	<p>The Gap Analysis found that:</p> <ul style="list-style-type: none"> • 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. 	
<p>Responses</p>	<ul style="list-style-type: none"> • 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 smooth oreo fishery on bycatch stocks. 	<p>Actions 2.1 & 2.2</p>

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	<p>(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</p> <p>(b) Direct effects are highly unlikely to create unacceptable impacts to ETP species</p> <p>(c) Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.</p>	
Gap Analysis Findings	<p>The Gap Analysis found that:</p> <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 SSO4 fishery, coral taken within the SSO4 fishery and determine (where possible) which genera/species are affected most by the SSO4 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