



# **Fishery Improvement Plan**

## **New Zealand EEZ Arrow Squid Trawl Fishery**

### **(SQU 6T)**

**Version 3: December 2017**

Version 2: July 2016

Version 1: May 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 deep water 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 deep water fisheries. As part of this programme, two key squid fisheries are in formal Fishery Improvement Plans (FIPs). These are the Auckland Island Squid Trawl Fishery (SQU 6T) and the EEZ Squid Trawl Fishery (SQU 1T).

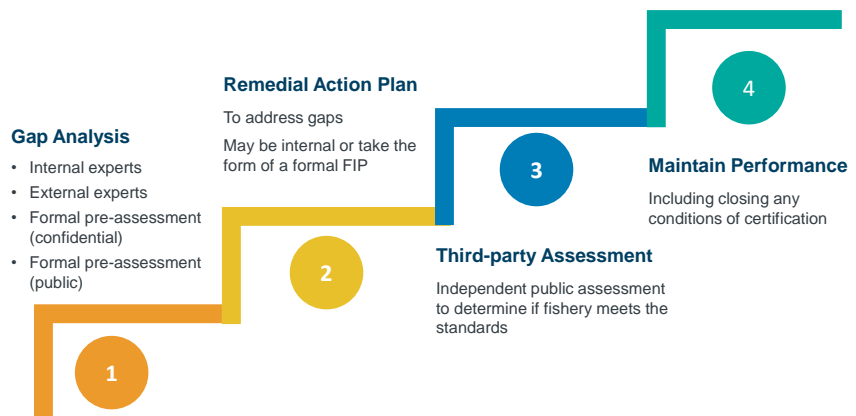
This FIP for SQU 6T has been developed by DWG using tools and templates provided by MSC to establish a public, transparent, inclusive and stepwise approach towards MSC certification.

The FIP objective is to work towards improving the performance of the fishery to the point where it meets the MSC Fisheries Standard and subsequently achieves MSC certification. It also serves as a mechanism which enables external observers to track progress and to assess fisheries performance against the MSC Fisheries Standard.

The following sections provide further details on the SQU 6T FIP including a Gap Analysis and a Remedial Action Plan.









## SQU 6T Current FCP Status

The SQU 6T fishery is currently progressing through the Remedial Action Plan stage of the Fishery Certification Process (FCP) (Figure 1, Table 1), involving the development of stock monitoring and assessment methodologies and the implementation of remedial management actions, within a specified timeframe.



**Figure 1.** The illustrative stages, 1 to 4, of Deepwater Group’s Fisheries Certification Programme.

Table 1. Timelines and milestones for the SQU 6T Fisheries Certification Programme.

Fisheries Certification Stage	Deliverables and Outcomes	Action Lead	Timeline for Milestone	Progress
Gap Analysis  	<b>Phase 1 – Confidential Pre-assessments against the MSC Standard:</b> In September 2008 a Conformity Assessment Body (CAB) undertook a high level confidential pre-assessment of SQU 6T against the MSC Fisheries Standard. The pre-assessment findings were updated in July 2012.	DWG & MPI	Sep 2008 July 2012	Completed 
	<b>Phase 2 – Fishery Gap Analysis:</b> Assessed SQU 6T against the MSC Fisheries Standard to identify potential non-conformities and information gaps.	DWG & MPI	Aug 2012	Completed 
	<b>Phase 3 – Fishery Evaluations:</b> Completed on the 'Fishsource' template. Provided the 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.  Fishery performance was reviewed against the MSC Fisheries Standard v1.3 by DWG and MPI in October 2014, April 2015 and September 2017.	DWG & MPI	Jul 2012 Oct 2014 Apr 2015 Sep 2017	Completed 
Remedial Action Plan  	<b>Phase 1 – Fisheries Improvement Analysis:</b> 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	Oct 2014 – April 2015	Completed 
	<b>Phase 2 – Fishery Improvement Plan:</b> Implementing remedial management actions within an agreed and time-bound plan using MSC's Monitoring and Benchmarking FIP Template. Posted on DWG's website for public viewing.	DWG & MPI	Sep 2017	Remedial Actions In process 
Third Party Assessment  	<b>Phase 1 – MSC Assessment:</b> Formal assessment of the SQU 6T fishery against the MSC Fisheries Standard.  DWG has sought guidance on the development of a revised set of P1 Performance Indicators appropriate for assessment of short-lived species (Aug 2017).	CAB, DWG & MPI	Aug 2019	PI revision in progress 
	<b>Phase 2 – MSC Certification:</b> Achieved certification of the SQU 6T fishery against the MSC Fisheries Standard.	CAB, DWG & MPI	Aug 2020	

## Stage 1 - Gap Analysis



The three phases of the first stage of the Fishery Certification Programme have been completed:

- Phase 1 Fishery Evaluations
- Phase 2 Fishery Gap Analysis
- Phase 3 Confidential Pre-assessment against the MSC Standard.

The outcomes of the pre-assessment against each Performance Indicator (PI), updated in light of progress achieved, are summarised in Table 2. Assessments of 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. Updated SQU 6T pre-assessment, September 2017.**

MSC Component	MSC Performance Indicator	MSC Performance Indicator	Outcome 2015	Outcome 2017
Outcome	1.1.1	<b>Stock Status:</b> Stock at a level which maintains high productivity	<60	<60
	1.1.2	<b>Stock Rebuilding:</b> Where stock depleted, there is evidence of rebuilding	<60	<60
Management	1.2.1	<b>Harvest Strategy:</b> Precautionary and robust harvest strategy in place	<60	<60
	1.2.2	<b>Harvest Control Rules &amp; Tools:</b> Well defined harvest control rules in place	<60	<60
	1.2.3	<b>Information &amp; Monitoring:</b> Relevant Information collected to support HS	60-79	60-79
	1.2.4	<b>Assessment of Stock Status:</b> Assessment of stock status is adequate	<60	<60
	<b>P1 ALL</b>	<b>Sustainability of Exploited Stock</b>	<b>Fail</b>	<b>Fail</b>
Primary Species	2.1.1	<b>Primary Species Outcome:</b> Does not cause serious or irreversible harm to primary species	≥80	≥80
	2.1.2	<b>Primary Species Management:</b> Strategy in place for managing primary species	≥80	≥80
	2.1.3	<b>Primary Species Information:</b> Relevant information to help manage primary species	≥80	≥80
Secondary Species	2.2.1	<b>Secondary Species Outcome:</b> Does not cause serious or irreversible harm to secondary species	≥80	≥80
	2.2.2	<b>Secondary Species Management:</b> Strategy in place for managing secondary species	≥80	≥80
	2.2.3	<b>Secondary Species Information:</b> Relevant information to help manage secondary species	60-79	≥80
ETP species	2.3.1	<b>ETP Species Outcome:</b> Meets national and international requirements for ETP protection	60-79	≥80
	2.3.2	<b>ETP Species Management:</b> Precautionary management strategies in place	≥80	≥80
	2.3.3	<b>ETP Species Information:</b> Relevant information to support management of impacts	≥80	≥80
Habitats	2.4.1	<b>Habitats Outcome:</b> Does not cause serious or irreversible harm to habitat structure	≥80	≥80
	2.4.2	<b>Habitats Management:</b> Information is adequate to determine risk to habitat types	≥80	≥80
	2.4.3	<b>Habitats Information:</b> Information adequate to determine risk to habitats	≥80	≥80
Ecosystem	2.5.1	<b>Ecosystem Outcome:</b> Does not cause serious or irreversible harm to ecosystem	≥80	≥80
	2.5.2	<b>Ecosystem Management:</b> Measures are in place to mitigate risk to ecosystem	≥80	≥80
	2.5.3	<b>Ecosystem Information:</b> Adequate knowledge of impacts of fishery on the ecosystem	≥80	≥80
	<b>P2 ALL</b>	<b>Maintenance of Ecosystem</b>	<b>Pass</b>	<b>Pass</b>
Governance and Policy	3.1.1	<b>Legal/Customary Framework:</b> Management system exists with legal/customary framework	≥80	≥80
	3.1.2	<b>Consultation, Roles &amp; Responsibilities:</b> Management system has clear processes	≥80	≥80
	3.1.3	<b>Long Term Objectives:</b> Management policy contains clear long-term objectives	≥80	≥80
Fishery specific management system	3.2.1	<b>Fishery Specific Objectives:</b> Fishery has clear and specific outcome objectives	60-79	60-79
	3.2.2	<b>Decision Making Processes:</b> Management system includes effective decision making	60-79	60-79
	3.2.3	<b>Compliance &amp; Enforcement:</b> Monitoring, control and surveillance mechanisms in place	≥80	≥80
	3.2.4	<b>Management Performance Evaluation:</b> Performance evaluation processes in place	≥80	75
	<b>P3 ALL</b>	<b>Effective Management System</b>	<b>Pass</b>	<b>Pass</b>
<b>Total number of PIs equal to or greater than 80</b>			<b>18</b>	<b>19</b>
<b>Total number of PIs 60-79</b>			<b>5</b>	<b>4</b>
<b>Total number of PIs less than 60</b>			<b>5</b>	<b>5</b>
<b>Overall BMT Index</b>			<b>0.73</b>	<b>0.77</b>

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## Stage 2 - Remedial Action Plan



The first phase of the second stage of the Fishery Certification Programme has been completed.

### Phase 1 Fishery Improvement Analysis

The performance of SQU 6T has been assessed against the MSC Fisheries Standard (v1.3) to identify non-conformities and information gaps against the MSC Performance Indicators (SG60 and SG80) (Appendix 1).

### Phase 2 Fishery Improvement Plan (FIP)

The second phase involves implementing the required remedial management actions and monitoring progress according to a public, time-bound FIP.

The management actions being implemented to remedy the gaps identified in Phase 1 are provided in Table 3.

Projected timelines for each of the remedial management actions are provided in Table 4.

### 2017 Progress Update

An update on progress towards completing the remedial management actions is provided in Table 5. Remedial actions have been completed for Ecosystem Performance Indicators 2.2.3 and 2.3.1, associated with assessment and management of primary, secondary and ETP (Endangered Threatened or Protected) species.

**Table 3. Updated remedial management actions and links to MSC Performance Indicators, September 2017**

ACTIONS	ACTION LEAD & PARTNERS	Links to MSC Performance Indicators									
		P1 Target stocks					P2 Ecosystem Components		P3 Management System		
		1.1.1	1.1.2	1.2.1	1.2.2	1.2.3	1.2.4	2.3.3	2.4.3	3.2.1	3.2.2
<b>1. Stock assessment</b>											
1.1	Develop and update stock assessment methodology.	DWG & MPI									
1.2	Acceptance of stock assessment methods by MPI.	DWG & MPI									
1.3	Develop and test near-real time collections.	DWG & MPI									
1.4	Undertake annual in-season stock assessments.	DWG & MPI									
1.5	Conduct MSE (Management Strategy Evaluation) and review HS (Harvest Strategy) and HCR (Harvest Control Rule).	DWG & MPI									
1.6	Implement HS and HCR.	DWG & MPI									
1.7	Undertake near-real time stock assessments.	DWG & MPI									
1.8	Review data provision, assessment and management processes.	DWG & MPI									
<b>2. Ecosystem</b>											
2.1	Evaluate quantitative information to assess impact on ETP species and effectiveness of the strategy to manage impacts.	DWG & MPI									
2.2	Assess vulnerability of the main habitats and ensure information is adequate to identify and assess risks to main habitats.	DWG & MPI									
<b>3. Management System</b>											
3.1	Update fisheries management planning documentation.	DWG & MPI									
3.2	Develop and implement decision making processes.	DWG & MPI									

Notes: DWG - Deepwater Group Ltd, MPI - Ministry for Primary Industries

Table 4. Revised timelines for each of the remedial management actions, September 2017.

SQU 6T										
		2017		2018		2019		2020		
		H1	H2	H1	H2	H1	H2	H1	H2	
<b>MSC Principle 1: Stock Status</b>										
1.1	Develop and update stock assessment fishery evaluation methodology.			In-progress	In-progress	Planned completion date				
1.2	Acceptance of stock assessment and fishery evaluation methods by MPI and MSC respectively.					In-progress	Planned completion date			
1.3	Develop and test near-real time abundance estimation methods.					In-progress	Planned completion date			
1.4	Undertake annual in-season stock assessments.					In-progress	Planned completion date			
1.5	Conduct MSE and review HS and HCR.					In-progress	Planned completion date			
1.6	Implement HS and HCR.					In-progress	Planned completion date			
1.7	Undertake near-real time stock assessments of the SQU stock during an active fishery.						In-progress	Planned completion date		
1.8	Review data provision, assessment and management processes.							In-progress	Planned completion date	
<b>MSC Principle 2: Ecosystem Management</b>										
2.1	Analyse fishery catch to identify 'main' bycatch species.		Completed							
2.2	Review and respond to stock status of 'main' bycatch species.		Completed							
2.3	Review and report on impacts of the fishery on relevant ETP species.		Completed							
<b>MSC Principle 3: Management System</b>										
3.1	Update fisheries management planning documentation.					In-progress	Planned completion date			
3.2	Develop and implement clear decision-making processes.					In-progress	Planned completion date			

In-progress
Planned completion date
Completed



**Table 5.** Updates on remedial management actions, September 2017.

MSC Principle 1: Stock Status		Progress Update 2017
1.1	Develop and update stock assessment methodology.	<b>Stage 1:</b> A stock assessment method was developed in 2015 but was not accepted by MPI's stock assessment working group (McGregor & Large, 2016 [ <a href="http://www.mpi.govt.nz/document-vault/12822">http://www.mpi.govt.nz/document-vault/12822</a> ]; McGregor & Tingley, 2016 [ <a href="http://www.mpi.govt.nz/document-vault/12174">http://www.mpi.govt.nz/document-vault/12174</a> ]). Development of an appropriate method is on-going.
1.2	Acceptance of stock assessment methods by MPI.	<b>Stage 2:</b> Evaluation of stock assessment method/s currently under development is expected in late-2018/early-2019.
1.3	Develop and test near-real time abundance estimation methods.	<p>Harvest strategy and harvest control rule development will be undertaken once there is an acceptable stock assessment. Timelines have been changed to align with Stage 2 of the stock assessment development.</p>
1.4	Undertake annual in-season stock assessments.	
1.5	Conduct and review MSE, HS, and HCR.	
1.6	Implement HS and HCR.	
1.7	Undertake near-real time stock assessments of the SQU 6T stock during an active fishery.	
1.8	Review data provision, assessment and management processes.	
MSC Principle 2: Ecosystem Management		Progress Update 2017
2.1	Analyse fishery catch to identify 'main' primary and secondary species.	<b>Completed:</b> An updated analysis of fish and invertebrate bycatch and discards for the SQU 1T and SQU 6T trawl fisheries combined, for the 2013-14 fishing year was undertaken by Anderson (2017, [ <a href="http://fs.fish.govt.nz/Page.aspx?pk=113&amp;dk=24284">http://fs.fish.govt.nz/Page.aspx?pk=113&amp;dk=24284</a> ]). The analysis revealed there is a single 'main' primary species and a single 'main' secondary species: Barracouta (BAR, <i>Thyrsites atun</i> ), makes up ~19.5% of the total catch and is a Primary species. Spiny dogfish (SPD, <i>Squalus acanthias</i> ), considered a 'low resilience' species, makes up ~2.8% of the total catch and is a Secondary 'main' species.
2.2	Review and respond to stock status of 'main' bycatch species.	<b>Completed:</b> <ol style="list-style-type: none"> <li>1. BAR: Four barracouta stocks are recognised (BAR1, BAR4, BAR5, BAR7). Only BAR5 overlaps with the SQU 6T fishery. A level 2, partial quantitative stock assessment of BAR5 in 2016 estimated it was 'Very Unlikely' the stock was below the soft limit of 20%B<sub>0</sub> (&lt; 10% probability) (MPI, 2017 [<a href="http://fs.fish.govt.nz/Page.aspx?pk=113&amp;dk=24291">http://fs.fish.govt.nz/Page.aspx?pk=113&amp;dk=24291</a>]). The stock is therefore likely to be above the PRI.</li> <li>2. SPD: Six spiny dogfish stocks are recognised (SPD1, SPD3, SPD4, SPD5, SPD7, SPD8). Only SPD5 overlaps with the SQU 6T fishery. Catches over the last 12 years has been stable, ranging between 1,400 – 2,500 t, well below the TACC of 3,700 t (MPI, 2017a [<a href="http://fs.fish.govt.nz/Page.aspx?pk=113&amp;dk=24381">http://fs.fish.govt.nz/Page.aspx?pk=113&amp;dk=24381</a>]). A qualitative level 1 risk assessment classified SPD as having a relatively large population in New Zealand, as having moderate productivity and as showing some resilience to the effects of fishing (Ford <i>et al.</i>, 2015 [<a href="http://fs.fish.govt.nz/Page.aspx?pk=113&amp;dk=23934">http://fs.fish.govt.nz/Page.aspx?pk=113&amp;dk=23934</a>]). Around 80% of SPD caught in the squid fisheries is legally discarded at sea either alive or dead. While there is no information on survival rates for discarded animals there is no evidence of population decline in SPD5. (MPI, 2017b [<a href="http://fs.fish.govt.nz/Page.aspx?pk=113&amp;dk=24290">http://fs.fish.govt.nz/Page.aspx?pk=113&amp;dk=24290</a>]).</li> </ol>

2.3 Review and report on impacts of the fishery on relevant ETP species.

**Completed:**

1. Seabirds: There were 102 observed seabird captures in 2014-15 and 139 in 2015-16. The species captured most frequently were white-chinned petrel (55), white-capped albatross (40), southern Buller's albatross (26) and sooty shearwater (15) (Dragonfly, 2017) [<https://psc.dragonfly.co.nz/2017v1/released/birds/squid-trawl/all-vessels/eez/2015-16/>]. MPI's Level 2 Risk Assessment (L2RA) (Richard & Abraham, 2015; 2015a), lists white-chinned petrels as 'medium' risk, white capped and southern Buller's albatross as 'very high' risk, and sooty shearwater as 'negligible' risk.
  - The white-capped albatross population has been monitored over the last 10 years and shows no sign of persistent decline (Baker et al., 2014). Most of the capture events in 2015-16 were net-captures and ~70% were released alive. Observers monitored over 90% of tows. [<https://psc.dragonfly.co.nz/2017v1/released/white-capped-albatross/rawl/43m-vessels/auckland-islands/2015-16/>].
  - The population of Southern Buller's albatross ('very high' L2RA risk status), is expected to grow by 5.7% over the next 10 years (Fu & Sagar, 2016). The L2RA risk assessment is confounded by difficulties in identifying southern and northern Buller's albatross by necropsy (northern Buller's albatross inhabit islands near the Chatham Rise as opposed to southern Buller's albatross which breed on sub-Antarctic islands). The Department of Conservation (DoC) currently has a project aimed at resolving this identification issue with genetic analysis tools, which will reduce this uncertainty (Wold *et al.*, 2016).
2. New Zealand fur seal: population status 'least concern'. There were 19 observed captures in 2014-15 and 10 in 2015-16. [<http://www.doc.govt.nz/nature/native-animals/marine-mammals/seals/nz-fur-seal/>]
3. New Zealand sea lion: population status 'critically endangered'. There was 1 observed capture in 2014-15, none in 2015-16 and 3 in 2016-17. The annual FRML for the fishery is 38 sea lions. Use of approved SLEDs in trawls is mandatory to facilitate live release. A quantitative risk assessment (Roberts and Doonan 2016) [<https://mpi.govt.nz/dmsdocument/11665-aabr-166-quantitative-risk-assessment-of-threats-to-new-zealand-sea-lions>] and Threat Management Plan (DoC, 2017) [<http://www.doc.govt.nz/nature/native-animals/marine-mammals/seals/new-zealand-sea-lion/docs-work/new-zealand-sea-lion-rapoka-threat-management-plan/>] for sea lions provide tools to counter the population decline. The fishery operates subject to an agreed Operational Plan to manage incidental captures of sea lions in the SQU 6T fishery [[http://deepwatergroup.org/wp-content/uploads/2017/06/SQU\\_6T-Operational-Plan-decision-document-2016-17.pdf](http://deepwatergroup.org/wp-content/uploads/2017/06/SQU_6T-Operational-Plan-decision-document-2016-17.pdf)].

Observer coverage: in the SQU 6T fishery 70% of the 1,294 tows were monitored by MPI observers in 2016-17 (MPI Annual Review Report 2015-16) [[https://www.mpi.govt.nz/mpiresearch/?site-search=annual+review+report+2015-16&action\\_doSimpleSearch=](https://www.mpi.govt.nz/mpiresearch/?site-search=annual+review+report+2015-16&action_doSimpleSearch=)].

Operational Procedures: all vessels in the SQU 6T fishery operate in accordance with an agreed Vessel Operational Procedure which specifies mitigation methods and devices to be employed, real-time reporting requirements following any ETP species captures and avoidance actions to be taken consequent to ETP capture events.

MSC Principle 3: Management System		Progress Update 2017
3.1	Update fisheries management planning documentation.	} Actions are scheduled to commence once a stock assessment is completed.
3.2	Develop and implement clear decision-making processes.	

### Third-party Assessment



#### MSC Assessment

DWG's objective is to manage the SQU 6T fishery towards achieving SG80 against all Performance Indicators. Stage 3 of the SQU 6T FCP requires the submission of this fishery for full MSC Assessment by an accredited MSC Conformity Assessment Body against the MSC Fisheries Standard.

#### MSC Certification

DWG will consider submitting the fishery for MSC assessment once an accepted in-season stock assessment method has been developed and tested, and the harvest strategy has been fully implemented.

## Appendix 1

### New Zealand's EEZ (SQU 6T) Squid Trawl 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		
<b>MSC SG80 Certification Requirements</b>	<ul style="list-style-type: none"> <li>a) It is highly likely that the stock is above the point where recruitment would be impaired.</li> <li>b) The stock is at or fluctuating around its target reference point.</li> </ul>	
<b>Gap Analysis Findings</b>	<p>The Gap Analysis found that:</p> <ul style="list-style-type: none"> <li>• There is currently no assessment for the SQU 6T stock.</li> <li>• There are currently no stock specific limit or target reference points defined for the SQU 6T stock.</li> <li>• Therefore, it is currently not possible to demonstrate that it is <u>highly likely</u> that the stock is above the point where recruitment would be impaired (i.e. above the limit reference point) or that the stock is at or fluctuating around its target reference point.</li> </ul>	
<b>Responses</b>	<ul style="list-style-type: none"> <li>• Develop and implement an assessment approach that will inform on the status of the SQU 6T stock relative to appropriate limit and target reference points.</li> <li>• Demonstrate, using an appropriate and accepted stock assessment methodology, that the stock status is either at or above an appropriate target reference point or it is highly likely that the stock is above the point where recruitment would be impaired.</li> </ul>	<b>Actions 1.1-1.4 &amp; 1.7-1.8</b>
PI 1.1.2 – Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe		
<b>MSC SG80 Certification Requirements</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	
<b>Gap Analysis Findings</b>	<p>The Gap Analysis found that:</p> <ul style="list-style-type: none"> <li>• There is currently no evidence that this stock has ever been depleted.</li> <li>• As this is essentially an annual stock, should rebuilding be necessary at any point, effective rebuilding would require rapid implementation of a rebuilding plan.</li> <li>• There is no formal harvest strategy which provides for a rebuild consistent with the biology of this species.</li> <li>• Any defined rebuilding timeframe should be consistent with the essentially annual population dynamics of the stock.</li> <li>• Recruitment in invertebrate stocks is usually substantially driven by environmental factors.</li> </ul>	
<b>Responses</b>	<ul style="list-style-type: none"> <li>• Develop and formalise a rebuilding plan for the SQU 6T stock which would be applicable should the stock become depleted.</li> <li>• Define the target and time-frame for rebuilding appropriate to the biology and population dynamics of the species.</li> <li>• Use the stock assessment methodology developed to address PIs 1.1.1 and 1.2.4, to run simulations to support the development and testing of the rebuilding plan.</li> </ul>	<b>Action 1.5</b>
PI 1.2.1 – There is a robust and precautionary harvest strategy in place		
<b>MSC SG80 Certification Requirements</b>	<ul style="list-style-type: none"> <li>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.</li> <li>b) The harvest strategy may not have been fully tested but monitoring is in place and evidence exists that it is achieving its objectives.</li> </ul>	

<b>Gap Analysis Findings</b>	<p>The Gap Analysis found that:</p> <ul style="list-style-type: none"> <li>• There is no formal harvest strategy which is “responsive to the state of the stock” and demonstrates that the harvest strategy elements successfully “work together towards achieving management objectives reflected in the target and limit reference points.”</li> <li>• With no harvest strategy, no evidence of achievement of harvest strategy objectives exists.</li> </ul>	
<b>Responses</b>	<ul style="list-style-type: none"> <li>• Conduct a Management Strategy Evaluation to define appropriate harvest strategy and harvest control rule. Review the SQU 6T harvest strategy and harvest control rule to align with Management Strategy Evaluation.</li> <li>• Implement harvest strategy and harvest control rule through a Management Procedure.</li> </ul>	<b>Actions 1.5 - 1.6</b>
<b>PI 1.2.2 – There are well defined and effective harvest control rules in place</b>		
<b>MSC SG80 Certification Requirements</b>	<ul style="list-style-type: none"> <li>(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.</li> <li>(b) The selection of the harvest control rules takes into account the main uncertainties.</li> <li>(c) Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.</li> </ul>	
<b>Gap Analysis Findings</b>	<p>The Gap Analysis found that:</p> <ul style="list-style-type: none"> <li>• Neither a harvest strategy nor a defined harvest control rule (HCR) that “is consistent with the harvest strategy that would ensure that the exploitation rate is reduced as the limit reference point is approached” are in place.</li> <li>• There is no formal documentation of the main uncertainties that the HCR will need to address.</li> </ul>	
<b>Responses</b>	<ul style="list-style-type: none"> <li>• Develop, formalise, test and implement a “well defined” HCR that is consistent with the harvest strategy and ensure that this will reduce the exploitation rate as the limit reference point is approached.</li> <li>• The HCR will demonstrably address the main uncertainties relating to the fishery, its assessment and management.</li> </ul>	<b>Actions 1.4-1.7</b>
<b>PI 1.2.3 – Information and Monitoring</b>		
<b>MSC SG80 Certification Requirements</b>	<ul style="list-style-type: none"> <li>(a) Sufficient relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.</li> <li>(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.</li> <li>(c) There is good information on all other fishery removals from the stock.</li> </ul>	
<b>Gap Analysis Findings</b>	<p>The Gap Analysis found that:</p> <ul style="list-style-type: none"> <li>• The fishery has no shortage of “sufficient relevant information related to stock structure, stock productivity and fleet composition.”</li> <li>• The timescales for collecting and handling of some of the fishery data collection will not support in-season (near-real time) stock assessments.</li> <li>• With no Harvest Strategy or HCR, the adequacy of the information to adequately support and monitor the stock, the fishery in relation to the HCR cannot be evaluated.</li> <li>• There is good information on all other fishery removals from the stock through the quota management and monitoring, control and surveillance systems.</li> </ul>	
<b>Responses</b>	<ul style="list-style-type: none"> <li>• Develop, test and implement protocols to collect and handle those fishery data necessary for near-real time, in-season stock assessments in a timely manner.</li> <li>• Available information and indicators, and on-going information collection programme, should be reviewed following development of the Harvest Strategy and HCRs. This is to ensure both will</li> </ul>	<b>Actions 1.3 &amp; 1.8</b>

	<p>be adequately monitored and supported by the information that will continue to be collected from the fishery.</p> <ul style="list-style-type: none"> <li>Any deficits found in the type, quality or quantity of information to support the Harvest Strategy and HCR will be addressed.</li> </ul>	
<b>PI 1.2.4 – Assessment of Stock Status</b>		
<b>MSC SG80 Certification Requirements</b>	<ul style="list-style-type: none"> <li>a) The assessment is appropriate for the stock and for the harvest control rule.</li> <li>b) The assessment takes uncertainty into account.</li> <li>c) The assessment of stock status is subject to peer review.</li> </ul>	
<b>Gap Analysis Findings</b>	<p>The Gap Analysis found the following:</p> <ul style="list-style-type: none"> <li>There is currently no assessment for the SQU 6T stock.</li> </ul>	
<b>Responses</b>	<ul style="list-style-type: none"> <li>Develop and implement an assessment approach that is appropriate for the stock and for the HCR and will inform on the status of the SQU 6T stock relative to appropriate biological and management reference points.</li> <li>Characterise the nature and relative scale of assessment uncertainties and ensure that the assessment takes the principal uncertainties into account in an appropriate way.</li> </ul>	<b>Actions 1.1-1.3 &amp; 1.7-1.8</b>
<b>PI 3.2.1 – The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC’s Principles 1 and 2</b>		
<b>MSC SG80 Certification Requirements</b>	<ul style="list-style-type: none"> <li>a) Short- and long-term objectives, which are consistent with achieving the outcomes expressed by MSC’s Principles 1 and 2, are explicit within the fishery’s management system.</li> </ul>	
<b>Gap Analysis Findings</b>	<p>The Gap Analysis found that:</p> <ul style="list-style-type: none"> <li>While there are general fishery objectives within the Fish Plan, the detailed fishery specific objectives that match the harvest strategy and HCR have not been documented.</li> </ul>	
<b>Responses</b>	<ul style="list-style-type: none"> <li>Update the fisheries management planning documentation to clearly express the short- and long-term objectives for this fishery such that they are consistent with the HS and HCR developed to address the needs of MSC Principle 1.</li> </ul>	<b>Action 3.1</b>
<b>PI 3.2.2 – The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives and has an appropriate approach to actual disputes in the fishery under assessment.</b>		
<b>MSC SG80 Certification Requirements</b>	<ul style="list-style-type: none"> <li>a) There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.</li> <li>b) Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.</li> <li>c) Decision-making processes use the precautionary approach and are based on best available information.</li> <li>d) Information on fishery performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring evaluation and review activity.</li> <li>e) The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.</li> </ul>	
<b>Findings from Gap Analysis</b>	<p>The Gap Analysis found that:</p> <ul style="list-style-type: none"> <li>Appropriate decision making processes for managing in-season assessments and implementing necessary in-season management have not been agreed and formalised.</li> </ul>	
<b>Proposals for Fisheries Improvement</b>	<ul style="list-style-type: none"> <li>To develop, agree, document and implement clear decision making processes that will enable successful implementation of in-season stock assessment and management for this fishery.</li> </ul>	<b>Action 3.2</b>

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|  | <ul style="list-style-type: none"><li>• To ensure that, as appropriate, this implementation also addresses serious and important issues (b), meets precautionary decision making objectives (c), is available to those interested (d) and supports the existing approach to compliance with judicial decisions (e) above.</li></ul> |  |
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