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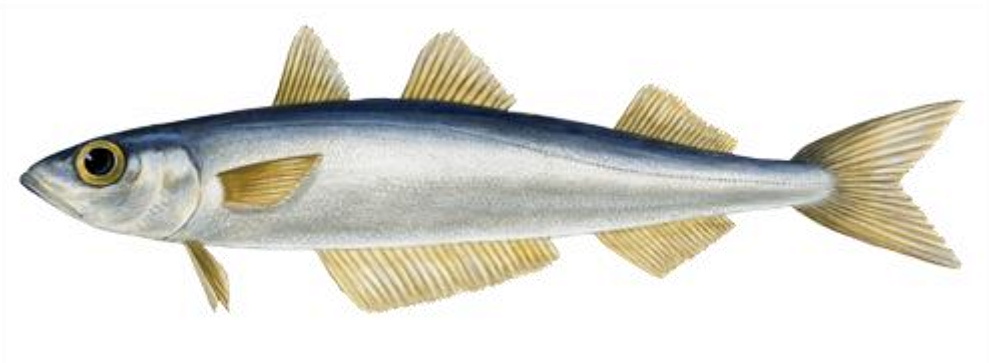
MSC SUSTAINABLE FISHERIES CERTIFICATION

On-Site Surveillance Visit - Report for New Zealand Southern Blue Whiting Fishery



4th Surveillance Audit

November 2016

Certificate Code	F-ACO-0045
Prepared For:	**Deepwater Group Limited**
Prepared By:	**Acoura Marine**
Authors:	Jo Akroyd, Graham Pilling & Rob Blyth-Skyrme

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1 Introduction

1.1 Scope of Surveillance

This report outlines the findings of the 4th Annual Surveillance of the New Zealand Southern Blue Whiting fishery. The scope of the certified fishery and therefore of this surveillance is specified in the Units of Certification set out below:

UoC 1

Species:	Southern Blue Whiting *(Micromesistius australis)*
Geographical area:	Bounty Platform New Zealand, SBW 6B
Method of capture:	Trawl: Mid-water trawling and bottom trawling
Stock:	Southern Blue Whiting, NZ Area SBW 6B
Management System:	Ministry of Fisheries, New Zealand
Client Group:	Deepwater Group Limited

UoC 2

Species:	Southern Blue Whiting *(Micromesistius australis)*
Geographical area:	Campbell Island Rise New Zealand, SBW 6I
Method of capture:	Trawl: Mid-water trawling and bottom trawling
Stock:	Southern Blue Whiting, NZ Area SBW 6I
Management System:	Ministry of Fisheries, New Zealand
Client Group:	Deepwater Group Limited

UoC 3

Species:	Southern Blue Whiting *(Micromesistius australis)*
Geographical area:	Pukaki Rise New Zealand, SBW 6R
Method of capture:	Trawl: Mid-water trawling and bottom trawling
Stock:	Southern Blue Whiting, NZ Area SBW 6R
Management System:	Ministry of Fisheries, New Zealand
Client Group:	Deepwater Group Limited

1.2 Aims of the Surveillance

The purpose of the annual Surveillance Report is fourfold:

1. to establish and report on whether or not there have been any material changes to the circumstances and practices affecting the original complying assessment of the fishery;
2. to monitor the progress made to improve those practices that have been scored as below “good practice” (a score of 80 or above) but above “minimum acceptable practice” (a score of 60 or above) – as captured in any “conditions” raised and described in the Public Report and in the corresponding Action Plan drawn up by the client;
3. to monitor any actions taken in response to any (non-binding) “recommendations” made in the Public Report;
4. to re-score any Performance Indicators (PIs) where practice or circumstances have materially changed during the intervening year, focusing on those PIs that form the basis of any “conditions” raised.

Please note: The primary focus of this surveillance audit is to assess changes made in the previous year. For a complete picture, this report should be read in conjunction with the Public Certification Report for this fishery assessment, which can be found here:

https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/pacific/new_zealand_southern_blue_whiting_fishery/assessment-downloads-1/20120501_PCR.pdf

1.3 Certificate Holder Details

Fishery name	New Zealand Southern Blue Whiting		
Species and Stock	Southern Blue Whiting (*Micromesistius australis*) NZ Area SBW 6B, 6I & 6R		
Date certified	1st May 2012	Date of expiry	1st June 2018 (Extended through Variation)
Surveillance level and type	Level 1 – On-site		
Date of surveillance audit	21st-23rd November 2016		
Surveillance stage (tick one)	1st Surveillance		
	2nd Surveillance		
	3rd Surveillance		
	4th Surveillance	✓	
	Other (expedited etc)		
Surveillance team	Lead assessor: Jo Akroyd Assessor(s): Graham Pilling & Rob Blyth-Skyrme		
CAB name	Acoura Marine		
CAB contact details	Address	6 Redheughs Rigg Edinburgh EH12 9DQ	
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Client contact details	Address	Deepwater Group Ltd. PO Box 5872, Wellesley Street, Auckland, 1141, New Zealand	
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	Email	george@deepwatergroup.org	
	Contact name(s)	George Clement	

2 Surveillance Process

2.1 Findings of the original assessment

As a result of the assessment, the assessment team raised one condition of certification. There were no recommendations. The condition was closed at the first annual surveillance in 2013. In the previous audit (2015) two recommendations were made which, whilst not obligatory, the client is encouraged to act upon within the spirit of the certification. These were assessed during this audit.

2.2 Surveillance Activity

2.2.1 Surveillance team details

This on-site surveillance visit was carried out by Jo Akroyd, and Rob Blyth-Skyrme with Graham Pilling remote for P1. The Team Leader was Jo Akroyd.

Jo Akroyd (P3 & TL)

Jo is a fisheries management and marine ecosystem consultant with extensive international and Pacific experience. She has worked at senior levels in both the public and private sector as a fisheries manager and marine policy expert. Jo was with the Ministry of Agriculture and Fisheries in New Zealand for 20 years. Starting as a fisheries scientist, she was promoted to senior chief fisheries scientist, then Fisheries Management Officer, and the Assistant Director, Marine Research. She was awarded a Commemoration Medal in 1990 in recognition of her pioneering work in establishing New Zealand's fisheries quota management system. Among her current contracted activities, she is involved internationally in MSC fishery certification of offshore, inshore and shellfish fisheries as Fisheries Management Specialist and Lead Assessor. She has carried out the Marine Stewardship Council's (MSC) certification assessment for sustainable fisheries. Examples include New Zealand (hoki, southern blue whiting, albacore, scallops), Fiji (longline albacore), Japan (pole and line tuna, flatfish, snowcrab, scallops), China (scallops), and Antarctica (Ross Sea tooth fishery). Jo is a member of the MSC's Peer Review College, and has completed the MSC v1.3 and v2.0 training modules.

Graham Pilling (P1)

Currently the principal fisheries scientist (stock assessment and modelling section) at the Pacific Community (SPC), Graham has over twenty years' experience working in tropical, temperate and polar marine and freshwater ecosystems, gaining in depth experience in the practical assessment and management of pelagic and demersal fisheries through a wide range of methodologies, and the provision of scientific advice to fisheries managers around the world. Fisheries studied include industrial tuna fisheries and artisanal reef fisheries in the tropics and Arabian Gulf. The impacts of anthropogenic influences such as oil spill events and climate change on fish stocks and fisheries have been examined. Graham has designed and developed models to simulate the long-term impacts of uncertainty in stock biology and assessments on fisheries management, and methods to assess and manage data poor fisheries. He has also reviewed international biological stock assessments for scientific rigor. Chair of STECF SGMED (2008) and FAO GFCM stock assessment meetings for assessment of demersal species within the Mediterranean Sea (2008 and 2009), and chair of the FAO meeting on data poor fisheries (2010). Member of a large number of Marine Stewardship Council accreditation teams assessing fisheries for sustainability against the MSC principles. Has played a key role at international commissions in tropical and polar regions. His work has contributed significantly to the institutional strengthening of fisheries institutions in the tropics.

Rob Blyth-Skyrme (P2)

Rob started his career in commercial aquaculture, but prior to undertaking his PhD he shifted focus to the sustainable management of wild fisheries. After his PhD he went to the Eastern Sea Fisheries Joint Committee, one of the largest inshore fisheries management bodies in England, where he became the Deputy Chief Fishery Officer. He then moved to Natural England, the statutory adviser to UK Government on nature conservation in English waters, to lead the team dealing with fisheries policy, science and nationally significant fisheries and environmental casework. Rob now runs Ichthys Marine Ecological Consulting Ltd., a marine fisheries and environmental consultancy. As well as carrying out general consultancy, he has undertaken all facets of MSC work as a lead assessor, expert team member and peer reviewer across a wide range of fisheries, including those targeting groundfish. Rob

is a member of the MSC's Peer Review College, and has completed the MSC v1.3 and v2.0 training modules.

2.2.2 Date & Location of surveillance audit

The onsite audit was carried out from the 21st to the 23rd November 2016. The meetings were scheduled to take place in Wellington but due to recent earthquake events and safety concerns the meetings were transferred to Auckland. This meant some stakeholders participated via video link and conference calls.

2.2.3 Stakeholder consultation & meetings

All stakeholders were invited to participate in the audit process. They were sent an email inviting them to participate and/or send a written submission.

2.2.4 What was inspected

For P1, stock status and catch status were reviewed.

For P2, a focus of the audit was on the interaction between the fishery and ETP species, in particular sea lions with respect to the recommendation on the fishery, but also fur seals and seabirds. Updated capture data were presented and considered by the audit team.

For P3, management, legislation and compliance were reviewed.

2.2.5 Stakeholder Consultation

A total of nine stakeholder organisations and individuals having relevant interest in the assessment were identified and consulted during this surveillance audit. The interest of others not appearing on this list was sought through the postings on the MSC website.

The stakeholders who attended the meetings included the Ministry for Primary Industries (in person and via conference calls), NIWA research scientists (via video link), Department of Conservation (via conference call) and Forest and Bird (in person).

No written submissions were received.

2.3 Surveillance Standards

2.3.1 MSC Standards, Requirements and Guidance used

This surveillance audit was carried out according to the MSC Fisheries Certification Requirements v.1.3 using process v2.0.

2.3.2 Confirmation that destructive fishing practices or controversial unilateral exemptions have not been introduced

No indication was given or suggested during the surveillance audit to suggest that either of these practices is in evidence for this fishery.

3 Updated Fishery Background

3.1 Changes in the management system

There have been no substantial changes in the management system.

The government is in the process of consulting on a number of proposals to ensure the management system promotes sustainable fishing practices (see https://www.mpi.govt.nz/news-and-resources/consultations/future-of-our-fisheries/). The proposed changes include the progressive implementation of a new Integrated Electronic Monitoring and Reporting System (IEMRS) across all fishing vessels. VMS (Vessel Monitoring System) is already required on all vessels greater than 28m in length, and the majority of deepwater vessels already utilise an electronic reporting system. However, the IEMRS proposal includes a new electronic reporting system and a roll out of CCTV monitoring from 1 October 2018.

3.2 Changes in relevant regulations

Changes in regulations for foreign charter vessels means that since 31 May 2016 all vessels fishing in New Zealand waters must be NZ flagged and consequently be subject to all NZ legislative requirements in any waters.

3.3 Compliance

An Initial risk assessment was undertaken in 2012, updated in 2013, reviewed in 2015 and updated in 2016. Significant compliance improvements regarding product state definition, glaze testing and quantification of whole and processed fish to meal were observed.

10 vessels completed 17 trips during the period under review. 100% were observed, half had sole and half had dual observers.

The Compliance Manager reports no compliance concerns in this fishery. There have been no recent prosecutions.

3.4 Changes to personnel involved in science, management or industry

MPI have appointed two new important personnel, Manager Fisheries Science and Manager Fisheries Stock Assessment.

Ongoing work at MPI has not been affected by these changes and they continue to support the DWG initiative to maintain certification of the NZ deepwater fisheries.

3.5 Changes to scientific base of information including stock assessments

The stock status is reported by UoC. No new assessments have been agreed for the UoCs since the last audit (see Dunn and Hanchet, 2011a, b); current advice is reported below.

UoC 1: Bounty Platform (SBW6B)

A stock assessment was completed for the Bounty Platform stock in 2014 using data up to 2013 from local area acoustic surveys of aggregations. Data from the most recent survey in 2013 were broadly consistent with observations in 2007–2008, but not consistent with the observed abundances in 2009–2012. The general purpose stock assessment program, CASAL (Bull *et al.* 2012) was used, with Bayesian estimation. Five runs were considered by the working group, being the (6.3) Base case, Down weighted 2009–2013 acoustic indices and estimated catchability with lognormal prior mean = 0.41, CV = 0.2; (4.2), Down weighted 2007–2008 acoustic indices (ignoring the high acoustic biomass estimates in these years); (4.3), Down weighted 2009–2013 acoustic indices (ignoring the recent low acoustic biomass estimates); (6.6), Down weighted 2009–2013 acoustic indices and estimated catchability with lognormal prior mean = 0.41, CV = 0.1; (6.7), Down weighted 2009–2013 acoustic indices and estimated catchability with lognormal prior mean = 0.41, CV = 0.3. The results are presented in Table 1.

Table 1. Bayesian median and 95% credible intervals of equilibrium initial biomass (B_0), current biomass (B_{2014}) and stock status (%B_{2014} B_0) for the model runs 6.3 (base case), 6.6 (q prior CV=0.1) and 6.7 (q prior CV=0.3). Models 4.2 and 4.3 had q fixed at 0.5).

Run	B_0	B_{2014}	B_{2014}(%B_0)
6.3 (base case)	150120 (126140-189050)	66977 (46837-102237)	45 (36-54)
4.2	126350 (118880-140110)	46208 (42635-50294)	36 (34-39)
4.3	164300 (151770-179920)	77370 (64240-94477)	47 (42-54)
6.6	180060 (159890-205860)	91383 (73509-114100)	51 (45-57)
6.7	133170 (112380-169380)	52358 (34126-82344)	39 (30-50)

The management reference points for each of these three stocks are: target range of 40% B_0; *"Soft Limit"* of 20% B_0 (requiring a rebuilding plan if breached); "Hard Limit" of 10% B_0 (requiring consideration of closure if breached).

In the 2014 assessment, B_{2013} was estimated to be between 40% B_0 and 50% B_0, and About as Likely As Not (40–60%) to be at or above the target. It was Unlikely (< 40%) that the current biomass was below the Soft Limit, and Very Unlikely (< 10%) that the current biomass was below the Hard Limit. Overfishing was Unlikely (< 40%) to be occurring.

Projections were performed assuming fixed catch levels of 6860, 8000 and 10,000 t. The probability of dropping below the threshold biomass at a catch level of 6860 t is less than 5% for all years and for catch levels of 8000 and 10 000 t is less than 10% for all years. Under average recruitment conditions the biomass is expected to decline slowly. Therefore it was Very Unlikely (< 10%) that biomass would fall below the soft limit over the next 3 years, and Exceptionally Unlikely (< 1%) to do so relative to the hard limit over next 3 years.

The next assessment is planned for early 2017.

UoC 2: Campbell Rise (SBW6I)

An updated assessment of the Campbell Island Rise stock was completed in 2014, using research time series of abundance indices from wide-area acoustic surveys from 1993 to 2013 and proportion-at-age data from the commercial fishery. New information included a wide area acoustic survey of the Campbell Island Rise carried out in August–September 2013. The general-purpose stock assessment program, CASAL (Bull *et al.* 2012) was used and the approach, which used Bayesian estimation, was similar to that in previous assessments (Dunn & Hanchet 2011a, b). Three runs were presented in advice: the base case, and 2 sensitivities. The base case included all of the acoustic biomass indices, the sensitivities excluded the 2009 acoustic biomass index and allowed for the estimation of the natural mortality rate for males and females. The results are presented in Table 2.

Table 2. Bayesian median and 95% credible intervals of equilibrium (B_0), initial, and current biomass for the model runs 1.1 (base case), 1.2 (exclude 2009 index), and 1.3 (estimate M).

Run	B_0	B_{2014}	B_{2014}(%B_0)
1.1 (base case)	342 290 (307 800–391 080)	205 532 (145 856–284 562)	60 (48–74)
1.2	327 020 (295 550–368 730)	175 098 (123 444–239 085)	54 (42–65)
1.3	346 990 (297 650–433 560)	262 977 (167 817–406 478)	76 (54–97)

Therefore B_{2014} was estimated to be at or above 50%B_0 and was Very Likely (> 90%) to be at or above the target. B_{2014} was Exceptionally Unlikely (< 1%) to be below soft or hard limits. Overfishing was Very Unlikely (< 10%) to be occurring.

Projections were made assuming fixed catch levels of 30 000 t (i.e. the TACC current at the time). The probability of dropping below the threshold biomass at catch levels of 30 000 t is less than 10% for all models and all years. Under average recruitment conditions the biomass is expected to increase in the next year, then decline. Therefore, the stock was Exceptionally Unlikely (< 1%) to fall below either the soft limit or hard limit over next 2–3 years. It was also Unlikely (< 40%) to cause overfishing.

Management Strategy Evaluation analyses were commenced for southern blue whiting on the Campbell Plateau in 2015. The underlying assessment model had two major changes (1) in the prior on the acoustic q (revised TS), and (2) M no longer fixed but estimated with a prior, which led to a higher stock status, although confidence in this result was not shared by all researchers (there is a need to account for patterns in fish movement). The revised model was not used for stock assessment, only MSE. These two changes in the assessment process will be evaluated next year, and if accepted by the WG, will go into a revised model. The HCR identified from the MSE will then be tested with the updated and accepted assessment model.

The biennial survey at Campbell was delayed by one year and was undertaken in September 2016 (previous survey was 2013). The uncertainty in science advice increases as the time window moves further from the last fishery independent survey data point.

The next assessment is scheduled for early 2017.

UoC 3: Pukaki Rise (SBW 6R)

An assessment for 2014 was planned for the Pukaki Rise stock but the Working Group did not accept that the 2012 acoustic survey provided an acceptably realistic biomass estimate for the stock, so no assessment was possible.

The last assessment of the Pukaki Rise stock was carried out in 2002. The sSPA model was used to estimate the numbers at age in the initial population in 1989 and subsequent recruitment. The model estimates selectivity for ages 2, 3, and 4 and assumes that the selectivity after age 4 is 1.0. No stock-recruitment relationship is assumed in the sSPA.

Based on the range of stock biomass modelled in the assessment, the average catch level since 2002 (380 t) is unlikely to have made much impact on stock size. A more intensive fishery or more consistent catches from year to year would seem to be required to provide any contrast in the biomass indices. This stock has been only lightly exploited since 1993, when over 5000 t was taken in the spawning season. Based on the assumption for the level of fixed acoustic q value, Table 3 presents biomass estimates.

Table 3. Parameter estimates for the Pukaki stock as a result of fixing the adult 4+ acoustic q at various values. B_{mid}, mid-season spawning stock biomass; N_2,1992 size of the 1990 year class (millions). All values in t x 10^3.

Fixed value of acoustic q	B_0	B_{mid89}	B_{mid00}	$N_{2,1992}$	B_{mid00} (%B_0)	B_{mid00}(%B_{may})
q=0.65	54	36	48	63	88	246
q=1.4	22	22	13	28	58	161
q=2.8	18	19	8	23	44	123

Therefore, the current status is unknown, but believed to be only lightly exploited between 1993 and 2002. Catch at age data available for 2007 and 2009 suggest the catch is dominated by relatively young fish from the 2003–2006 year classes.

There was highly limited fishing in this region in the 2013-2015 fishing years. No assessment is currently planned for this stock, given the low level of fishing and hence lack of perceived risk to the stock.

3.6 Traceability

No issues in this fishery. All southern blue whiting caught are included in the UoCs.

3.7 TACC and catch data

Table 3.7-1 TACC and Catch Data

TACC	**Year**	**2016-17**	**Amount**	**UoC1: 2,940t** **UoC2: 39,200t** **UoC3: 5,500t**
UoA share of TACC	**Year**	**2016-17**	**Amount**	**UoC1: 2,940t** **UoC2: 39,200t** **UoC3: 5,500t**
UoC share of TACC	**Year**	**2016-17**	**Amount**	**UoC1: 2,940t** **UoC2: 39,200t** **UoC3: 5,500t**
Total green weight catch by UoC	**Year (most recent)**	**2015-16**	**Amount**	**UoC1: 2,405t** **UoC2: 22,100t** **UoC3: 12t**
	Year (second most recent)	**2014-15**	**Amount**	**UoC1: 7,054t*** **UoC2: 24,592t** **UoC3: 34t**

* In addition to the TACC of 6,860 t, an MPI Special Permit provided for up to 2,000 tonnes of SBW 6B catch to be taken without the requirement to be balanced against ACE, thereby increasing the allowable catch to 8,860 t.

3.8 Summary of Assessment Conditions

There are no conditions

4 Results

4.1 Recommendation 1

Performance Indicator (PI) & Score	**Relevant PI**	**Relevant scoring issue/ scoring guidepost text**	**Score**
	1.1.1	N/A	N/A
Recommendation	At the next annual surveillance particular attention will be given to the most recent stock estimates and, if there is a sustainability issue (especially for the Bounty stock 6B and 6I), the management action that has been taken to address this.		
Progress on Recommendation: **Year 3**	This recommendation is carried over to the next annual surveillance audit, where any new information relating to stock status will be reviewed and in particular for SBW 6B and SBW 6R.		

Progress on Recommendation: **Year 4**	No new assessments were performed for these regions in 2016, but new assessments for SBW 6B and SBW 6I are scheduled for early 2017. At present no assessment is scheduled for SBW 6R, and it is assumed that there is a low likelihood of overexploiting this stock given the low levels of fishing occurring (see Table 3.7-1). This recommendation is carried over to the next annual surveillance audit, where any new information relating to stock status will be reviewed and in particular for SBW 6B and SBW 6R.
Status of recommendation: **Year 4**	This recommendation remains open.

4.2 Recommendation 2

Performance Indicator (PI) & Score	**Relevant PI**	**Relevant scoring issue/ scoring guidepost text**	**Score**
	2.3.1	N/A	N/A
Recommendation	Following the conclusion of 2014 fishing activity in SBW 6I, it is recommended that the client conducts a review of management measures developed and implemented in 2014 and sea lion interactions with the fishery, and compares these with previous years to determine (to the extent possible) the efficacy of approaches employed in reducing sea lion captures, and how measures deemed to be effective will be rolled out in future.		
Progress on Recommendation: **Year 3**	Action has been undertaken in light of this recommendation. Further time will be needed in order to confirm the efficacy of the mitigation measures and so the team will review any further information at the next audit.		
Progress on Recommendation: **Year 4**	Following the 2013 season when 21 sea lion captures were recorded, the use of sea lion exclusion devices (SLEDs) became a requirement for all SBW vessels, along with 100% observer coverage. The number of sea lions captured has subsequently remained at a low level, with 2 and 6 sea lions recorded captured in 2014 and 2015, and 3 in the 2016/17 fishing season (DWG 2016a). Prior to the start of the 2016-17 fishing season in April 2016, DWG ensured all vessels had aboard up-to-date Vessel Management Plans (VMPs), VMP Operational Procedures and Marine Mammal Operational Procedures (DWG 2014a), and provided vessel owners and operators with the following information as a reminder of the strategies and actions required to reduce the fleet's interactions with sea lions: • DWG memo to SBW operators and vessel skippers: ETP species mitigation 2016-17 (DWG 2016b) • DWG memo to SBW 6I vessel skippers: sea lion risk management actions (DWG 2016c) Skippers were also reportedly provided with the MPI Operational Plan for SBW 6I sea lion risk mitigation, and a summary of performance against this plan noted the following (MPI, 2016a):		

	• Eight vessels participated in the SBW 6I fishery (10 vessels participated in 2015), and each carried at least one MPI observer • Observers reported a high level of adherence with VMPs and MMOPs. SLEDs were used on all vessels and during all tows • Sea lion trigger reports to DWG and MPI for each sea lion capture were made as required. Overall, it is apparent that the client has introduced apporpriate measures to minimise the potential for interactions with sea lions across the fleet, and although these will not entirely prevent sea lion captures from occurring, the impacts are controlled and accounted for in a robust and rigorous manner.
Status of recommendation: **Year 4**	This recommendation is closed.

5 Conclusion

5.1 Summary of findings

This fishery remains certified.

6 References

P1

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Appendix 1 – Re-scoring evaluation tables (if necessary)

None

Appendix 2 - Stakeholder submissions

None received

Appendix 3 - Surveillance audit information

N/A

Appendix 4 - Additional detail on conditions/ actions/ results

NA

Appendix 5 - Revised Surveillance Program

It is proposed that this fishery enters the reassessment process in April 2017 with a NZ site visit in June 2017.