Surveillance Report
Southern Blue Whiting Fishery

Certificate No.: **MML-F-121**

Intertek Moody Marine
September/October 2013

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1.0 GENERAL INFORMATION

Scope against which the surveillance is undertaken: MSC Principles and Criteria for Sustainable Fishing as applied to the Southern Blue Whiting Fishery

Species: *Micromesistius australis*

Area: NZ EEZ

Unit of Certification 1: Bounty Platform, (SBW 6B)
Unit of Certification 2: Campbell Island Rise (SBW 6I)
Unit of Certification 3: Pukaki Rise (SBW 6R)

Method of capture: trawl

Date of Surveillance Visit:	**9-11 September 2013**	
Initial Certification	**Date: April 2012**	**Certificate Ref: MML-F-121**
Surveillance stage	**Expedited audit**	
Surveillance team:	**Lead Assessor:** **Jo Akroyd** **Assessor(s):** **Graham Pilling**	
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2.0 RESULTS, CONCLUSIONS AND RECOMMENDATIONS

This report contains the findings of an expedited audit.

Following the mortality of an unprecedented number of New Zealand sea lion (*Phocarctos hookeri*) over a short period of the 2013 season, within the southern blue whiting fishery (Campbell Island (SBW6I), an expedited audit to gather information associated with this issue was requested by the client.

The MSC Certification Requirements v1.3 says the following about expedited audits:

27.22.17. The CAB shall undertake an "expedited audit", including as it determines necessary review of documents and an on-site audit if:

27.22.17.1 The CAB becomes aware of major changes in relation to the circumstances of the fishery.
a. A 'major change' is one that is likely to have a material difference on the certification status. A PI score falling below 60 or outcome PI score falling below 80, or a change that could bring about a Principle Level aggregate score to drop below 80 shall be considered material differences to certification status

27.22.17.2 Significant new information becomes available in relation to the circumstances of the fishery including during the period between the original assessment and the issue of a certificate.
a. Significant new information is that which is likely to have a material difference on the certification status. A PI score falling below 60 outcome PI score falling below 80, or a change that could bring about a Principle Level aggregate score to drop below 80 shall be considered material differences to certification status

The New Zealand southern blue whiting (SBW) fisheries were certified to the Marine Stewardship Council's (MSC) environmental standards in April 2012. One condition of certification was placed on the SBW fishery at Campbell Island (SBW6I), which was closed during the first audit following no interactions with sea lions within the fishery in 2012.

In 2013 a relatively large number of sea lion interactions occurred within the SBW6I fishery early in the season. DWG called for an expedited audit of PI 2.3.2 to examine whether the management strategy remained consistent with MSC guideposts.

The surveillance audit methodology, as defined in the current version of the MSC Certification Requirements is followed in this audit.

During the on-site surveillance audit, the audit team sought the views of the client and stakeholders concerning : PI 2.4.3 Management strategy
"The fishery has in place precautionary management strategies designed to:
- meet national and international requirements;
- ensure the fishery does not pose a risk of serious or irreversible harm to ETP species;
- ensure the fishery does not hinder recovery of ETP species; and
- minimise mortality of ETP species".

Meetings were held with the client group, representatives of the deepwater fishery (Deepwater Group Ltd), the Government (Ministry for Primary Industries - Compliance, Science and Fisheries Management – and Department of Conservation), research providers (Dragonfly Science and NIWA), and eNGOs (WWF, Royal Forest and Bird Protection Society, and ECO).

As a result of this audit, two recommendations have been made and it is important that the client address these. Progress against them will be assessed at future audits.

Information Sources:

Meetings
(NB all stakeholders from the full assessment were contacted prior to the surveillance audit taking place)
Meetings took place with:

- Ministry for Primary Industries
- Dragonfly and NIWA research providers
- Department of Conservation
- eNGOs – Forest and Bird, WWF and ECO

References cited

Baker, B., Hamilton, S. (2012). Assessment of the impact of incidental fisheries mortality on the Campbell Island New Zealand sea lion *Phocarctos hookeri* population using the Potential Biological Removal technique. Report for the Deepwater Group Ltd.

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MPI (2012). SQU6T Final Advice paper

NMFS (2005). Revisions to Guidelines for Assessing Marine mammal Stocks. 24pp. Available at: http://www.nmfs.noaa.gov/pr/pdfs/sars/gamms2005.pdf

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Standards and Guidelines used:

1. MSC Principles and Criteria
2. MSC Certification Requirements v1.3
3. Guidance to the MSC Certification Requirements, v 1.3

Timeline of events

Timeline of key events between 17 August and 3 Sept (actions/responses underlined)

- **15/16 Aug** - Arrival of the first vessel in the region.
- **17 Aug** – First capture event, a multiple of five animals, then a second single animal event
- **19 Aug** – Observer re-identified captures as New Zealand sea lions (previously thought to be New Zealand fur seals due, in part, to their small size).
- **21 Aug** - Vessel redeployed to Pukaki. Another vessel arrived on Campbell Island grounds, caught two animals and released both alive.
- **21 Aug** - DWG talked to all operators in the SBW6I fishery and those about to enter and ensured SLEDs aboard all vessels (including transport of SLEDs to vessels already on the grounds) as contingency to their required use.
- **22 Aug** - Daily reporting of position and captures/sightings instigated. Reports show large numbers of very aggressive sea lions feeding in close proximity to nets during hauling.
- More captures lead to two vessels moving to eastern and then to southern grounds. Sea lions were present in numbers and equally aggressive in these areas.
- Further vessels joined the fishery and further capture events (including another multiple capture event - 4 dead).
- **24 Aug** - MPI observers and DWG alerted all vessels to take all precautions to reduce offal loss from factory floors overboard.
- **29 Aug** - The SBW6I fleet was advised to cease making 'doors up' turns on concern that this may serve to increase the risk of capture, and reiterated on the requirement to avoid unnecessary gear time in water.
- **29 Aug** - DWG circulated net binding instructions if animals are present during shooting although, at this time, this is not seen as a high risk.
- **29 Aug** - A SLED trial was arranged in consultation with operators and MPI. Explicit instructions were drafted including the need for trials to be undertaken with MPI observer knowledge and oversight and to be fully documented.
- **30 Aug** - MPI met with DOC and advised/discussed situation.
- Following another capture, one vessel again moved to eastern grounds in search of sea lion free fishing. After 24 hours of trouble free fishing this vessel then captured two sea lions from another gathering congregation. Subsequently the vessel moved back to the north to join the rest of the fleet.
- **31 Aug** - Two trial tows were undertaken using SLEDs and results provided to DWG and MPI. The trial was not problematic with one shot being 30 tonnes.
- **2 Sep** - DWG circulated results of trial of SLED and instructions regarding SLED use to operators. These were deployed (on voluntary basis) across most vessels starting 3 September.
- **4 Sep** – Minsters of Conservation and for Primary Industries wrote to DWG to seek agreement for all vessels to trial SLEDs in the hope that this will mitigate further capture /deaths.
- **5 Sep** – DWG agrees to this – trials will now be implemented and issued a press/information release .
- **8 Sep** – Call for expedited audit of SBW6I PI2.3.2.

Background information from the 2013 expedited audit

The number of sea lion interactions within the fishery is routinely modelled based upon observer information (Table 1). The model (Thompson et al., 2013) used to estimate these numbers has been reviewed and accepted by the Aquatic Environment Working Group. The estimates show that considerable inter-annual variability in interactions occurs, and that historical levels of interaction, notably 2007, 2010 and 2011, have reached similar levels to those currently seen in 2013, while the confidence intervals in other years have also reached those levels. It is noted that in 2013 there was 100% observer coverage on the vessels, with those observers tasked to watch all haul events during the

season. While this level of coverage is not expected to improve the mean estimates of interactions, it will reduce the confidence intervals around those estimates for 2013, i.e. greater precision.

Table 1: Sea lion captures in the Campbell Island southern blue whiting fishery: Annual trawl effort, observer coverage, observed sea lion captures, modelled estimates of total sea lion captures.[1] (Thompson et al., 2013).

Year	Total tows	% tows observed	Observed captures	Estimated captures	
				Mean	95% c.i.
1996	474	27	0	0	0-3
1997	641	34	0	0	0-3
1998	963	29	0	1	0-5
1999	788	28	0	1	0-5
2000	447	52	0	0	0-2
2001	672	60	0	0	0-2
2002	980	28	1	3	1-11
2003	599	43	0	0	0-3
2004	690	34	1	3	1-9
2005	726	37	2	5	2-12
2006	521	28	3	9	3-21
2007	544	32	6	15	5-29
2008	557	41	2	8	5-14
2009	627	20	0	1	0-6
2010	550	43	11	24	15-36
2011	886	39	6	14	8-25
2012	575	76	0	1	0-3

A value used to relate the level of sea lion interactions to the sea lion population is the PBR ('Potential Biological Removal). The calculation of the PBR is numerically straight forward, but requires a number of assumptions and hence resulting values are uncertain. As a result, a range of PBR values have been estimated for SBW 6I sea lion interactions.

Key areas of uncertainty within the PBR calculation include:

- the estimate of R_{max} (maximum theoretical/estimated net productivity of the stock at small population size), which may be considered reasonably consistent between marine mammal populations (Dragonfly interview);
- N_{min} (minimum population estimate, commonly derived using an equation within the paper by Wade (1998), and which itself includes parameters than may need to be assumed). It was noted that estimates of pup population numbers and the influence of mortality, in particular after census, on those numbers is an area of uncertainty (Dragonfly interview, DOC interview);
- the estimate of F_R (recovery factor), which introduces an extra level of precaution (Wade, 1998). Further uncertainty arises due to the skewed sex ratio of interactions with the fishery in SBW6I, which was confirmed as 100% males in 2013 at the time of the audit. While this is likely to reduce the overall impact of interactions on population sustainability, it was noted that the removal of males can have an impact on population through reduced competition for females and hence population rigor (DoC interview). The potential for significant reductions in male numbers to affect population breeding success was noted by one stakeholder (citing the work of Millner-Gulland et al., 2003). We note that the sea lion population on the Campbell Islands is a very different species to that examined in the publication, and the potential reproductive failure

[1] The model used to generate the time-series in Table 1 has been accepted by the Aquatic Environment Working Group and is described in Thompson *et al.* 2013. The time-series in Table 1 includes new data from the 2012 SBW season and is currently being reviewed by this group.

that occurred in that mammal population resulted from an extremely female-biased sex ratio. There is no evidence for such a severe bias in the sex ratio of the Campbell Islands sea lion population, and the sex ratio can be monitored through the population surveys

Estimates of PBR for the Campbell Island population in the draft Population Management Plan (DOC, 2007) were between 4 and 48, dependent on the value chosen for the sea lion population's maximum annual rate of increase (a value of 12 calculated using the input parameters used to define MALFiRM values in the plan). The sea lion Population Management Plan has not proceeded further, following consideration by DOC of all comments from stakeholders, and hence the PBRs are not in place for 6I. New PBR estimates were derived by Baker and Hamilton (2012), which range from 4-16, dependent upon the assumptions, made for input values.

Peer review of the Baker and Hamilton (2012) work by an independent scientist familiar with sea lion issues in New Zealand noted the use of a small range of highly precautionary parameter values within the Baker and Hamilton work. In particular, the reviewers considered that the selection of parameter values for both the recovery factor (Fr) and the maximum net productivity rate of the population (Rmax) were conservative. For example, Baker and Hamilton used estimates of Rmax that were generated through the Bayesian modelling approach used to manage the population of New Zealand sea lions at the Auckland Islands (Breen et al. 2012). The values (0.039-0.056) were significantly lower than both the recommended default value of 0.12 for pinnipeds (NMFS 2005), and the value of 0.08 that was recommended during previous work in New Zealand on sea lion PBR. Use of the latter value would increase PBR estimates by over 40% (Fletcher, 2004). Further PBR estimates were developed by MPI using different input parameter assumptions.

This demonstrates the difficulty in interpreting PBR values relative to interaction levels. It is clear given the influence parameter uncertainty can have on PBR estimates, that the range of PBR values for sea lions in SWG6I requires review by the Aquatic Environment Working Group to agree the most appropriate (range of) settings. It is noted, however, that the average annual number of interactions are within the general range of estimates provided, noting that upper bounds on the confidence intervals indicate there is a potential for interactions in particular years to be high.

During interview with MPI Deepwater, the role of the PBR within the management system was discussed. It was noted that the Fisheries Act (section 15(2) ii) presents an obligation for managing interactions with protected species, along with guidance in Section 9. However, neither presents specific numbers or statutory targets for specific protected species. In general, the Minister may take measures considered necessary to avoid, remedy or mitigate the effect of fishing on any protected species, including closure of the fishery if necessary (as in the squid SQU6T fishery in some years due to the numbers of sea lion captures observed or estimated to have occurred), and this sanction could be extended to other fisheries if deemed necessary. Trigger values are available under the Fisheries Act but require a formal process to be established. Currently, PBR levels within the SBW6I fishery were considered to act as one indicator for action, rather than absolute trigger values. Trigger values have not been set in the fisheries in question as it has been deemed unnecessary based on historical catch of protected species. It was noted that one interaction itself acts as a trigger for action.

Several sea lion pup counts have taken place on Campbell Island in recent years (Cawthorn 1993, McNally et al. 2001, Childerhouse et al. 2005). There are methodological differences that mean pup production from these counts cannot readily be compared nor a long-term trend established (DOC interview). The two most recent pup counts in 2008-09 (Maloney et al. 2009) and 2009-10 (Maloney et al. 2012) did aim to use comparable methodology to see if a trend could be established. The results from these two recent pup counts showed that pup production had increased by 17% between these consecutive years. While this does not provide a definitive population trend, the most recent count (Maloney et al. 2012) was considered to provide a reasonably reliable estimate of minimum pup

production in 2009-10 (n=681), noting the difficulties in accessing particular areas of the Island which may negatively bias the estimate.

Tagging information shows that males (which represent the overwhelming majority of interactions with the SBW6I fishery) may move between the Auckland Islands and Campbell Island (Geschke and Chilvers, 2009). Available information shows no evidence of female sea lions foraging/moving between the Auckland Islands and Campbell Island. Given knowledge of their movement, biology and distances between breeding sites, DOC treats sea lions from the Auckland Islands and Campbell Island as separate sub-populations (or rookeries) for the purposes of assessing any effects of fisheries interactions. However, the male population component interacting with the fishery may be different to this assumption. Consideration of the smaller Campbell Island population unit alone within the PBR calculation may be more precautionary, noting that interactions in the wider fishery would otherwise need to be incorporated.

Audit of PI 2.3.2 ETP Management Strategy

Based on the interviews undertaken and evidence provided during the expedited audit site visit for the SBW6I fishery, PI 2.3.2 was re-assessed relative to the scoring guidepost text, focusing on management strategies for mitigating or avoiding incidental captures of New Zealand sea lions.

PI 2.3.2	Management strategy The fishery has in place precautionary management strategies designed to: - meet national and international requirements; - ensure the fishery does not pose a risk of serious or irreversible harm to ETP species; - ensure the fishery does not hinder recovery of ETP species; and - minimise mortality of ETP species.
SG 60	There are measures in place that minimise mortality, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species. The measures are considered likely to work, based on plausible argument (eg general experience, theory or comparison with similar fisheries/species).
SG 80	There is a strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality that is designed to be highly likely to achieve national and international requirements for the protection of ETP species. There is an objective basis for confidence that the strategy will work, based on some information directly about the fishery and/or the species involved. There is evidence that the strategy is being implemented successfully.
SG 100	There is a comprehensive strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality that is designed to achieve above national and international requirements for the protection of ETP species. The strategy is mainly based on information directly about the fishery and/or species involved, and a quantitative analysis supports high confidence that the strategy will work. There is clear evidence that the strategy is being implemented successfully, and intended changes are occurring. There is evidence that the strategy is achieving its objective.
Score	85
Observations	Key legislation for ETP species (specifically New Zealand sea lions for this expedited audit, a critically endangered, endemic species) include the Fisheries Act (1996), Wildlife Act (1953) and Marine Mammals Protection Act (1978). The Fisheries Act (section 15(2)) presents an obligation on protected species, along with guidance in section 9. However, neither section presents specific numbers or statutory targets for specific protected species. In general, the Minister may take measures considered necessary to avoid, remedy or mitigate the effect of fishing on any protected species. It was noted that one interaction itself acts as a trigger for increased monitoring and, if necessary, intervention by MPI. Combined with the requirement to report injury or mortality of protected species to the Department of Conservation (without offence), and the observer programme on board trawler vessels (100% coverage in 2013), these provide a strategy to monitor the legislative requirements.

	MPI and DWG remain committed to reducing the level of sea lion interactions within this fishery to the greatest extent practicable. This commitment is detailed within Operational Objective 2.2 in the Southern Blue Whiting Fisheries Plan Chapter which requires sea lion interactions in SBW6I to be minimised. General mitigation approaches for all trawlers >28 m LOA, supported through legislation, include industry-required codes of practice. These include all vessels in the SBW6I fishery each of which are required to develop and implement a Vessel Management Plan (VMP). Vessel operational performance at sea against each VMP is audited by MPI observers. All vessels in this season's SBW6I fishery had an MPI observer on-board. Mitigation processes are prescribed in the industry Operational Procedures (OPs), which are implemented by agreement between quota owners, DWG and MPI rather than through legislation. Since 2008, MPI Observers have audited the performance of deepwater trawl vessels against the Marine Mammal OPs, developed and implemented by the DWG. Key elements of these OPs relate to minimising the time the fishing gear is on the sea surface during shooting and hauling and managing offal and whole fish discards to reduce the risk of incidental interactions to the greatest extent practicable for each vessel. MPI and DWG consider that when fishing operations are conducted in line with all of the guidelines within these OPs, vessels can effectively minimise interactions with protected species. However, it is also clear that adhering to the OPs is more challenging in certain fisheries or at certain times, due to the characteristics of the required fishing operations or due to adverse weather conditions. Observer audits of performance against the OPs are also used to identify particular vessels that experience difficulties achieving total adherence to the agreed OP guidelines. To increase awareness among vessel operators and skippers of the risk of sea lion interactions in this fishery, MPI and DWG agreed to work with individual vessels to come up with practical approaches to minimise the losses of offal from the factories, seen as a key driver of interactions. These include: a) a pre-season briefing memo to all vessels highlighting operational guidelines to be employed to reduce interactions and minimise the danger period when the trawl net is close to the surface, shallow turns while trawling, and to avoid discharging offal; b) Pre-season meetings with selected vessels with relatively high historical interaction rates; c) Pre-trip briefings of MPI Observers on mitigation approaches and specific monitoring of the numbers of sea lions at different stages of the fishing process; d) In-season monitoring with vessel positions in SBW6I monitored daily during the season through the vessel monitoring system, and when operating in perceived higher risk areas, vessels were advised and mitigation approaches reiterated. From the information available during the audit, the events of 2013 appear unusual in that previously 'sea lion free' areas and vessels whose interactions with sea lions have historically been minimal showed notable interactions in 2013. Male sea lions were reported by observers further offshore than seen historically and acting more aggressively around nets. The unusual nature of the interactions, with multiple animals being caught in two specific tows, suggests a different phenomenon to the more chronic form of interactions seen in previous years. That being said, the 2013 season shows that the existing operational plans were not robust to the conditions encountered, and did not eliminate the interactions with sea lions (unlike the 2012 season). Rapid reporting practices are in place, so that marine mammal captures trigger action by DWG and these interactions are reported to MPI. The activities and

	actions of DWG and MPI during the 2013 SBW6I fishing season demonstrate that the strategy of information exchange on this management issue between the two organisations was timely, and provided a good basis for the development of in-season mitigation measures when interactions occurred. It was noted that communications with some of the wider stakeholder group were less timely. Specifically, the eNGOs raised concerns that they were not involved in dialogue with MPI or DWG from the beginning of the sea lion captures in this fishery but there were discussions between MPI and DOC, as noted above. The eNGOs were alerted to the situation via the media which they viewed as unsatisfactory. The lack of communication with NGOs is frequently raised during audits of NZ fisheries. It is recommended that mechanisms to improve communication of rapidly emerging events are considered. There are no regulations defining mitigation approaches for marine mammal interactions (SLEDs are not required in this fishery, although as discussed below they were implemented as a potential operational mitigation measure following the mortalities seen), unlike those within the squid fishery. The implementation of the use of SLEDs within the fishery occurred 5-6 days after the reporting of the sea lion fatalities within the fishery. SLEDs were designed for the squid fishery operating in a region where the interactions are, on average, with smaller sized sea lions (due to the sex ratio of captures there being biased towards females, while captures in the SBW6I fishery are of males). While SLEDs were trialled in the SBW6I fishery this year subsequent to the last identified interaction event, their efficacy has been called into question by some stakeholders, along with the potential for cryptic mortality. We note that estimates of cryptic mortality resulting from SLED use in the SQU6T fishery incorporate reductions in sea lion mortalities due to SLED use of 82% based on recent research, suggesting that SLEDs may be effective in that fishery.[2] It is recommended that the design of SLEDs and their implementation should be reviewed before regular use within the SBW6I fishery. The relatively high level of interactions seen to date in the 2013 season (still underway at time of audit) is of concern, although it is noted that the level of interactions to date is comparable with those estimated in some of the previous years. While it may be difficult to pre-empt the unusual set of behavioural interactions that were seen in 2013, the management responsiveness to the event was timely and appropriate. However, the potential reasons behind the levels of interaction in 2013 are not yet fully understood. These are being investigated and where identified contributing factors are controllable, it is recommended that operational plans and risk briefing information be updated to mitigate them for the 2014 fishing season and beyond. There is a clear intention that the mitigation strategies aim to conserve populations of ETP species. The operational mitigation methods generally appear to be effective at delivering reduced impacts and measures are expected to be highly likely to achieve national and international requirements for the protection of ETP species. There is objective basis for confidence that these strategies will achieve the intention of the management strategy, for which the legislation states that fisheries will have no adverse effects on ETP species. While the PBR estimates provides a context for the level of interactions, the role of PBRs within the management system are

[2] MPI (2011) SQU6T operational plan: initial position paper. 14p and MPI (2012) SQU6T Final Position paper

	viewed by MPI as indicators, given there has been no need to instigate a formal process to identify trigger values for the fishery. The range of PBR values, and the assumptions underpinning those calculations, increases the uncertainty in these indicators and their utility within the management framework. It is noted that the values used within the PBR calculations have not yet been reviewed by the AEWG. While the zero interaction level in 2012 was viewed as sufficient to remove the original condition on this PI, the 2013 interaction level highlights the uncertainty over the potential impact of the fishery on the sea lion population. An adaptive approach to management able to quickly react to such instances is therefore required and is being applied in the fishery. It is recommended that as part of developing a more cohesive management strategy, the range of PBR estimates and the assumptions underpinning them should be reviewed through the AEWG to provide clarity to which PBR value to relate to the fishery, and how the level of interaction events identified over time are related to that PBR level. It is also recommended that the best possible estimates of cryptic mortalities resulting from the deployment of SLEDs within the SBW6I fishery this year be incorporated within estimates of sea lion interactions for this year.[3] For marine mammals, observer monitoring of the implementation of approaches on vessels (although it should be noted that observers do not implement the legislation; other branches of MPI would follow up on identified breaches, as necessary), and the enforcement of regulations, provides evidence that the strategy is being implemented successfully. It is noted that the level of interactions seen to date in 2013 was not dissimilar to some previous years, although the potential causes of the interactions are not yet known and the recommendations made above should be reviewed at the next audit. The 100% observer coverage in 2013, while not necessary for statistical estimation of interaction estimates beyond improving precision of those estimates, does provide a near census of mortalities. Consideration to maintaining this coverage in the coming seasons should be given. **Audit trace references** Interview DWG Interview MPI Deepwater and MPI Science and NIWA Interview with Forest and Bird, WWF and Eco Ministry of Fisheries (2010-2011) Short-Medium term Management of the Sub-Antarctic southern blue whiting fisheries. Operational procedures for mitigating incidental captures of marine mammals DWG, Version 6, 1 October 2008 (http://www.deepwater.co.nz/f1275,60596/60596_MM_OP_2008-09_v6.pdf) Baker and Hamilton, 2012 MPI (2011) Southern blue whiting fisheries plan chapter
Conclusion	No conditions have been raised as There is a comprehensive strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality that is designed to be highly likely to achieve national and international requirements for the protection of ETP species. There is an objective basis for confidence that the strategy will work, based on

[3] MPI (2011) SQU6T operational plan: initial position paper. 14p.

	some information directly about the fishery and/or the species involved. There is evidence that the strategy is being implemented successfully. However the following recommendations are made. Progress against these will be monitored at future audits. The next audit is due in April 2014. **Recommendations** 1. For the second fishery audit, identify and document in collaboration with key stakeholders the potential causes of sea lion interactions within the SBW6I fishery during the 2013 fishing year. Where those identified causes are within the control of the fishery, or where reasonable measures by the fishery could mitigate those interactions, consult on appropriate mitigation approaches that will reduce the potential for interactions for the 2014 fishing season and beyond. In addition, identify contingency measures for forthcoming seasons that include pre-agreed actions by vessel operators in the event of the occurrence of unusual interactions. 2. SLEDs were trialled in the SBW6I fishery this year after a request from the Minister of Conservation and Minister for Primary Industries, as a mitigation measure in response to the sea lion interaction rates seen early in the 2013 season. Their implementation was subsequent to the vast majority of interaction events (there being one further interaction before the end of the season). If the potential causes of sea lion interactions within the SBW6I fishery during the 2013 fishing year (recommendation 1) suggest the use of SLEDs as a candidate mitigation tool, it is recommended that the effectiveness of SLEDs as an additional mitigation measure for NZSL in the SBW6I fishery should be investigated further, including their deployment, safety at sea, grid specifications, and any effect on catch quality and loss of catch.

Overall Conclusions.
The second annual surveillance must take place as originally scheduled. Particular emphasis will be on progress on the recommendations