

MSC SUSTAINABLE FISHERIES CERTIFICATION

On-Site Surveillance Visit - Report for New Zealand EEZ Trawl Hake Fishery



1st Surveillance stage

January 2016



Certificate Code F-ACO-177
Prepared For: **Deepwater Group**
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Assessment Data Sheet

Certified Fishery	New Zealand Hake Trawl Fishery
Fishery Management Agency	Ministry for Primary Industries
Species	Hake (<i>Merluccius australis</i>)
Fishing Method	Trawl
Certificate Code	F-ACO-177
Certification Date	16 th September 2014
Certification Expiration Date	15th September 2019
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Surveillance Stage:	1 st Surveillance stage
Surveillance Date:	November 2015

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Introduction

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 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.

1 General Information

1.1 Certificate Holder details

Fishery name	New Zealand Hake Trawl Fishery		
Unit(s) of assessment	UoC 1: Sub–Antarctic (HAK1) UoC 2: Chatham Rise (HAK4) UoC 3: West coast South Island (HAK7)		
Date certified	September 2014	Date of expiry	September 2019
Surveillance level and type	Reduced Onsite		
Date of surveillance audit	November 2015		
Surveillance stage (tick one)	1st Surveillance		✓
	2nd Surveillance		
	3rd Surveillance		
	4th Surveillance		
	Other (expedited etc)		
Surveillance team	Lead assessor: Jo Akroyd (onsite) Assessor(s): Matt Dunn (onsite) Graham Pilling (offsite)		
CAB name	Acoura Marine		
CAB contact details	Address	6 Redheughs Rigg South Gyle Edinburgh EH 12 9 DQ	
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	Email	George@deepwater.org	
	Contact name(s)	George Clement	

2 General Background about the fishery

a. Management systems

No changes.

b. Relevant regulations

No changes.

c. Personnel involved in science, management or industry

In the past year, a number of changes have taken place within the Ministry for Primary Industries Fisheries Management Directorate.

The Ministry underwent a minor restructure and a new governance structure is now in place, in addition the Team leader of the Deepwater fisheries team has accepted a one year secondment and a temporary replacement has been named to fill the Team Manager Deepwater Fisheries role in her absence. Two MPI Fisheries Directorate science staff left during the year, including the deepwater lead, and have yet to be replaced. Ongoing work at MPI has not been affected by these changes and they continue to support the DWG initiative to maintain certification of the New Zealand's deepwater fisheries.

d. Scientific base of information, including stock assessments

No changes.

e. Where enhanced fisheries, any updates on fishery's position in relation to scope criteria

Not applicable.

f. Any developments or changes within the fishery which impact traceability or the ability to segregate between fish from the Unit of Certification (UoC) and fish from outside the UoC (non-certified fish). This includes any changes in the UoC which could impact traceability, and should include how these changes have been addressed by management or traceability systems

No changes.

2.1 Area Under Evaluation

New Zealand HAK1 Sub – Antarctic, HAK4 Chatham Rise and HAK7 West Coast South Island

2.2 Fishery Ownership & Organisational Structure

Not relevant

2.3 TACC (total allowable commercial catch) and Catch Data

Table 2.3-1 TAC and Catch Data

TAC	Year	2014-15	Amount	UoC 1: 3701 t UoC 2: 1800 t UoC 3: 7700 t
UoA share of TAC	Year	2014-15	Amount	UoC 1: 3701 t UoC 2: 1800 t UoC 3: 7700 t

UoC share of TAC	Year	2014-15	Amount	UoC 1: 3473 t UoC 2: 1689 t UoC 3: 7168 t
Total green weight catch by UoC	Year (most recent)	2013-14	Amount	UoC 1: 1883 t UoC 2: 168 t UoC 3: 3641 t
	Year (second most recent)	2012-13	Amount	UoC 1: 2079 t UoC 2: 177 t UoC 3: 5434 t

2.4 Summary of Assessment Conditions

No conditions

3 Assessment Process

3.1 Details of 1st Surveillance Audit Process

As a result of the full assessment, no conditions of certification were raised by the assessment team.

During the audit the CAB reviewed the following:

- a. Any potential or actual changes in management systems.
- b. Any changes or additions/deletions to regulations.
- c. Any personnel changes in science, management or industry and their impact on the management of the fishery.
- d. Any potential changes to the scientific base of information, including stock assessments.
- e. Any changes affecting traceability

The status of the stock was reviewed as well as seabirds and mammals and habitat (including ongoing monitoring of the bottom trawl footprint) and compliance.

Several stakeholder groups participated in the surveillance meetings including Ministry for Primary Industries (science, deepwater management and compliance) and National Institute of Water and Atmospheric Research Ltd (NIWA) (research provider). NGOs were invited but did not wish to attend nor provide a written submission.

3.2 Scope & History of the Assessment

3.2.1 Surveillance team details

Team Leader

Jo Akroyd (**P3**) (on-site). Jo was a team member (P3) for the initial certification of the hoki fisheries in 2001, Team Leader and P3 for both the 1st and 2nd re certification of hoki and has been part of every NZ deepwater fishery surveillance audit. 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 fishery certification of offshore, inshore and shellfish fisheries as Fisheries Management Specialist and Lead Assessor for the Intertek Fisheries Certification audit team. 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 toothfish fishery)

Graham Pilling (**P1**) (off-site) Graham joined SPC in September 2010 and is now a senior fisheries scientist within the Stock Assessment and Modelling section of the OFP, where he performs analyses and provides advice to underpin the decisions of regional and sub-regional tuna management bodies in the Western and Central Pacific Ocean. His career started in 1994 as a marine fisheries consultant at MRAG Ltd in London, where he worked on fisheries in South Georgia and the British Indian Ocean Territory, as well as others. During this time he completed his fisheries PhD at Imperial College in 1999. In 2001 Graham moved to Cefas in Lowestoft UK, where he became the Head of the Seas and Oceans Group in 2007. During this period he provided stock assessment and ecosystem advice to the UK Government, ICES and the EU, and countries around the world. Graham has worked on a number of MSC fisheries assessments including the assessment of the NZ hake and ling fisheries.

Matt Dunn (**P2**) (on-site) has broad experience in fisheries which includes fisheries economics, fishing methods, fish biology, quantitative data analyses and stock assessment, international collaboration and representation, research and staff leadership, and mentoring and teaching. He received his B.S.c and M.S.c from University College of Wales, Bangor in 1992 and 1993 respectively, followed by a Ph.D. from the University of Portsmouth in 1999. He has previous experience working for Cefas in the UK, and as a deepwater fisheries scientist for the National Institute of Water and Atmospheric Research Ltd. He is currently an associate Professor and chair in the fisheries science department at the Victoria University of Wellington, New Zealand. Matt is published in a wide range of journals with particular focus on New Zealand fish species and stocks, including hake, hoki and ling.

3.2.2 Date & Location of surveillance audit

The onsite audit was carried out between the 24th and 26th November 2015 in Wellington.

3.2.3 Stakeholder consultation & meetings

All stakeholders were invited to participate in the audit process.

3.2.4 What was inspected

There were no conditions

Stock status and catch were reviewed

Marine mammals and seabirds captures and incidences

Habitat and impacts of the fishery

Ecosystem

Compliance

Management

3.2.5 Stakeholder Consultation

Stakeholder organisations and individuals having relevant interest in the assessment were identified and consulted during this surveillance audit. Information was posted on the MSC website and Stakeholders were sent an email inviting them to participate and or make a written submission.

The stakeholders who attended included the Ministry for Primary Industries (Deepwater, Management, Science and Compliance). NIWA research scientists. NGOs were invited but did not wish to attend nor provide written submission.

Documents referred to

See **Appendix 3**.

3.3 Surveillance Standards

3.3.1 MSC Standards, Requirements and Guidance used

This surveillance audit was carried out according to the MSC Fisheries Certification Requirements v1.3 and using v2.0 for process.

3.3.2 Destructive fishing practices or controversial unilateral exemptions

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

4 Results, Conclusions and Recommendations

4.1 Discussion of Findings

4.1.1 Changes in fleet structure or operation

No changes.

4.1.2 Changes in stock status and exploitation patterns

This is reported by UoC. New assessments have been performed since the last evaluation for HAK1. Stock status for the other UoC are reported.

UoC 1: Sub-Antarctic (HAK1)

The last (updated) stock assessment was carried out in 2015 for the 2014–15 fishing year, implemented as a Bayesian model using the general-purpose stock assessment program CASAL v2.30 (Bull *et al.*, 2012). The assessment used research time series of abundance indices (trawl surveys of the Sub-Antarctic from 1991 to 2012), catch-at-age from the trawl surveys and the commercial fishery since 1990–91, and estimates of biological parameters. A trawl fishery CPUE series was used in a sensitivity run. Results for HAK1 are shown in Table 1.

Table 1. Bayesian median (95% credible intervals) (MCMC) of B_0 , B_{2014} , and B_{2014} as a percentage of B_0 for the Sub-Antarctic base model and sensitivity runs.

Run	B_0	B_{2014}	$B_{2014}(\%B_0)$
Base	59290 (44040–94040)	37990 (19740-70310)	60.4 (43.6-77.6)
Half Neff	50120 (39340-77510)	27910 (14890-55840)	55.4 (37.2-77.5)
Estimate M	65610 (47940-105840)	44900 (25500-84370)	67.8 (49.9-89.1)
Fixed M	60270 (46210-99970)	33620 (19170-67160)	54.9 (39.8-72.5)
CPUE	79580 (59330-102310)	60980 (38140-86890)	76.2 (62.5-87.0)

Therefore, B_{2014} was estimated at 60% B_0 ; Very Likely (> 90%) to be at or above the target. B_{2014} was Exceptionally Unlikely (< 1%) to be below both the Soft and Hard Limits. Overfishing was Very Unlikely (< 10%) to be occurring.

Five-year projections where future catch was assumed to equal 2000t indicated the likelihood of the stock falling below either the soft or the hard limit over the five-year projection period was negligible. Biomass levels in 2019 were estimated between 87 and 140% of B_0 . Therefore, the stock was

Exceptionally Unlikely (< 1%) to fall below the soft or hard limits, and it was very unlikely (<10%) to cause overfishing.

The next assessment is scheduled for 2017.

UoC 2: Chatham Rise (HAK4)

The 2012 stock assessment was carried out with data up to the end of the 2010–11 fishing year. The assessment used research time series of abundance indices (trawl surveys of the Chatham Rise from 1992 to 2012), catch-at-age from the trawl survey series and the commercial fishery since 1990–91, a CPUE series from the eastern trawl fishery, and estimates of biological parameters. Results for HAK4 are shown in Table 2.

Table 2. Bayesian median (95% credible intervals) (MCMC) of B_0 , B_{2012} , and B_{2012} as a percentage of B_0 for the Chatham Rise model runs.

Run	B_0	B_{2014}	$B_{2014}(\%B_0)$
Base	37000 (30110–67000)	17250 (11010-41550)	46.8 (35.3-63.4)

Therefore, B_{2012} was estimated to be about 47% B_0 ; and Likely (> 60%) to be at or above target, and B_{2012} was Exceptionally Unlikely (< 1%) to be below the Soft or Hard Limits. Overfishing was Exceptionally Unlikely (< 1%) to be occurring.

Five-year projections from the base case where future catch was assumed to equal 1800t indicated the likelihood of the stock falling below either the soft or the hard limit over the five-year projection period was negligible. Biomass levels in 2017 were estimated between 56 and 109% of B_0 . Assuming future catches at the HAK4 TACC, therefore, the stock was About as Likely as Not (40–60%) to fall below the soft limit, and Unlikely (< 40%) to fall below the hard limit, and About as Likely as Not (40–60%) to cause overfishing.

The next assessment is scheduled for the 2016-17 year.

UoC 3: West coast South Is (HAK7)

A new assessment for HAK7 was carried out in 2012 using fisheries data up to the end of the 2010–11 fishing year. The assessment used catch-at-age from the commercial fishery since 1989–90, two comparable research surveys (in 2000 and 2012), a CPUE series from 2001 to 2011, and estimates of biological parameters. The selected CPUE series incorporated data since the change in 2001 to a new regulatory and reporting regime (involving ACE), and so was considered less likely to be biased by variations in fishing behaviour and catch reporting behaviour.

The stock assessment for HAK7 had been last updated using data up to the end of the 2008–09 fishing year (Horn 2011). Commercial catch-at-age was the only input data series. No time series of biomass indices were incorporated in the model; no fishery-independent series were available and CPUE indices were considered unreliable. Results for HAK7 are shown in Table 3.

Table 3. Bayesian median (95% credible intervals) (MCMC) of B_0 , B_{2012} , and B_{2012} as a percentage of B_0 for the WCSI base case and sensitivity runs.

Run	B_0	B_{2014}	$B_{2014}(\%B_0)$
Base	88920 (80660–101210)	51190 (35850-74790)	57.7 (43.1-77.4)
Estimate M	88360 (78790–114920)	48190 (29260-90800)	54.2 (35.8-86.4)

Therefore, B_{2012} was estimated to be 58% B_0 and Very Likely (> 90%) to be at or above the target, and B_{2012} is Very Unlikely (< 10%) to be below the Soft Limit and Exceptionally Unlikely (< 1%) to be below the Hard limit. The fishing intensity in 2012 was Very Unlikely (< 10%) to be above the overfishing threshold.

Five-year projections from the base case assuming future catches similar to recent levels (i.e., 4,500 t annually) would probably allow the stock to grow slightly in the next five years, while catches at the level of the TACC (7,700 t) would probably cause the stock to decline slightly but still be above the management target (40% B_0) in 2017. For either current catches or the TACC, therefore, the stock was Very Unlikely (< 10%) to fall below the soft limit, and Exceptionally Unlikely (< 1%) to fall below the hard limit. The catch was Unlikely (<40%) to cause overfishing.

The next assessment is scheduled for the 2016-17 year.

4.1.3 Changes in ecosystem interaction or management

There have been no substantive changes in the ecosystem interaction or management.

One recommendation was present for hake from the certification in 2014, which concerned the mitigation of seabird capture by small trawlers. Information was presented during the 2015 surveillance site visit which demonstrated that all vessels concerned were using mitigation devices, and therefore the intended outcome of this recommendation was met, and the recommendation was closed. The vessels concerned were all primarily targeting hoki, and therefore came under the requirements for the hoki fishery (DWG 2015b), which included having a vessel-specific seabird and fur seal Risk Management Plan, use of mitigation devices, capture reporting, and triggers for incident management in real time.

A change in the method by which many seabirds were being caught was discussed. The relative rate of warp strikes by seabirds seemed to be decreasing, with net captures increasing. Net captures occur during deployment and retrieval of the net, when seabirds dived into the trawl net or became entangled in the meshes when foraging in, or on, the net. This change was believed to be brought about by a change in bird behaviour, where a reduction in offal discharge had encouraged more aggressive seabird feeding behaviour at the net. The suspected change was recognised by industry and MPI, and work was planned for 2015/16 to further understand and mitigate this interaction.

No updated information on ecosystem effects was presented, but no changes were believed to have taken place, and no concerns were raised.

Bycatch estimates had been updated to 2011–12 (Anderson 2014). A level one shark (chondrichthyan) risk assessment was completed in 2015 and identified several species caught in the hake trawl fishery as being at relatively high risk (Ford *et al.*, 2015). The level of absolute risk was not considered in Ford *et al.*, (2015), however, and the 2014 MSC certification of hake concluded that the retained and bycatch species were highly likely to be within biologically based limits.

The Ministry for Primary Industries described the current information on Habitat Status. As noted at the previous audit, research was underway to validate the method used to measure habitat status. In particular, concerns had been raised about the veracity of the BOMECS classification following some directed research (largely unpublished), and a 2015 MPI workshop (MPI 2015b), such that alternative methods of evaluating impact were being considered. Because of the importance that this may have in evaluating PI2.4.1, a new recommendation was raised in this audit; to review at the next audit the research and progress made in determining and implementing a new approach to assessing bottom trawl impact.

4.1.4 Changes in management

In the past year, a number of changes have taken place within the Ministry for Primary Industries Fisheries Management Directorate.

The Ministry underwent a minor restructure and a new governance structure is now in place, in addition the Team leader of the Deepwater fisheries team has accepted a one year secondment and a temporary replacement has been named to fill the Team Manager Deepwater Fisheries role in her absence. Two MPI Fisheries Directorate science staff left during the year, including the deepwater lead, and have yet to be replaced. Ongoing work at MPI has not been affected by these changes and they continue to support the DWG initiative to maintain certification of the New Zealand's deepwater fisheries.

4.2 Reporting on Conditions & Recommendations

4.2.1 Recommendation 1

Performance Indicator(s)	2.3.3
Recommendation	The increasing number of trawl vessels operating in HAK7 of vessel lengths smaller than 28 m is noted. Their small size technically excludes them from the mandatory requirement to put in place bird interaction mitigation methods, although voluntary code of conduct approaches may be present. Vessel size is included within the models used to estimate seabird interactions (Abraham and Thompson, 2011). Hence if information is available from these smaller vessels, it will be incorporated within the analysis of overall interaction rates, which as noted within this document are below levels of concern. However, it is recommended that the results of existing models be examined to identify vessel-size factors for the UoC, and if necessary targeted data collection undertaken to support further analyses of ETP interactions for this vessel size class within the UoC be performed. Should results show a basis for concern, appropriate mitigation approaches should be considered.
Client reported action	DWG reported (based on MPI data) that in 2013-14 and 2014-15 approximately 200 trawl tows per year by vessels smaller than 28 m had targeted hake. DWG has placed Risk Management Plans (and seabird and fur seal capture mitigation) on all trawlers that target hoki regardless of vessel length, and reconciliation of MPI vessel records showed that all the hake tows were completed by vessels that fell within this DWG programme. Therefore, all vessels smaller than 28 m targeting hake were found to have a voluntary code of conduct present, and appropriate mitigation plans in place, thereby satisfying the intended outcome of this recommendation.
Team observations / conclusion	The client has reported on action that has been taken and the team confirm that this fulfills the recommendation

4.2.2 New Recommendations

Performance Indicator(s) & Score(s)	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
	2.4.1		
Recommendation	To review at the next audit the research work to assess bottom trawl footprint and impact, by BOMEK habitat class or an improved tool when it becomes available.		

4.3 Summary Of Conditions

No conditions.

5 Status of Certification

Certified.

6 Surveillance Programme

Table 6.1 : Surveillance level rationale

Year	Surveillance activity	Number of auditors	Rationale
2	On-site audit	3 auditors on-site	<p>The client has expressed their intent to have a combined re-assessment of the NZ hake, hoki, southern blue whiting and ling fisheries in 2016. This will allow all the fisheries to be on the same annual surveillance timeline and also allow them to use the MSC Certification Requirements v1.3 for the re-assessment.</p> <p>There will need to be a second annual audit report to confirm that the fishery is still meeting the MSC standard.</p>

Table 6.2: Timing of surveillance audit

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
2	15 th September 2019	September 2016	Recertification and availability of key stakeholders

Table 6.3: Fishery Surveillance Program

Surveillance Level	Year 1	Year 2
Level 1	On-site surveillance audit	On-site surveillance audit & re-assessment site visit.

Surveillance Level	Year 1	Year 2	Year 3	Year 4
<i>e.g. Level 5</i>	<i>e.g. On-site surveillance audit</i>	<i>On-site surveillance audit & re-certification site visit.</i>	<i>e.g. On-site surveillance audit</i>	<i>e.g. On-site surveillance audit & re-certification site visit.</i>

Please see Appendix 5.

Re-certification has been requested by the client so that NZ deepwater fisheries; hoki, hake, ling and southern blue whiting can be aligned for future surveillances.

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

None

Appendix 2 - Stakeholder submissions (if any)

None

Appendix 3 - Surveillance audit information

P1

Bull, B; Francis, R I C C; Dunn, A; Gilbert, D J; Bian, R; Fu, D (2012) CASAL (C++ algorithmic stock assessment laboratory): CASAL User Manual v2.30-2012/03/21. NIWA Technical Report 135. 280 p.

Horn, P L (2013) Stock assessment of hake (*Merluccius australis*) on the Chatham Rise (HAK 4) and off the west coast of South Island (HAK 7) for the 2012–13 fishing year. New Zealand Fisheries Assessment Report 2013/31. 58 p.

Horn, P.L. (2015). Stock assessment of hake (*Merluccius australis*) in the Sub-Antarctic (part of HAK 1) for the 2014–15 fishing year. New Zealand Fisheries Assessment Report 2015/29.

Horn, P L (2011) Stock assessment of hake (*Merluccius australis*) off the west coast of South Island (HAK 7) for the 2010–11 fishing year. New Zealand Fisheries Assessment Report 2011/33. 46 p.

MPI (2015). 2015 Fisheries Assessment Report: HAKE (HAK). P424-449

P2

Abraham E. R., Thompson F. N. (2014a). Captures of all birds in hake trawl fisheries, in the New Zealand Exclusive Economic Zone, during the 2012–13 fishing year. <https://data.dragonfly.co.nz/psc/v20140201/birds/hake-trawl/all-vessels/eez/2012-13/>, version dated 7 August 2015

Abraham E. R., Thompson F. N. (2014b). Captures of New Zealand fur seal in hake trawl fisheries, in the New Zealand Exclusive Economic Zone, during the 2012–13 fishing year. <https://data.dragonfly.co.nz/psc/v20140201/new-zealand-fur-seal/hake-trawl/all-vessels/eez/2012-13/>, version dated 7 August 2015."

Abraham E. R., Thompson F. N. (2014c). Captures of New Zealand sea lion in hake trawl fisheries, in the New Zealand Exclusive Economic Zone, during the 2012–13 fishing year. <https://data.dragonfly.co.nz/psc/v20140201/new-zealand-sea-lion/hake-trawl/all-vessels/eez/2012-13/>, version dated 7 August 2015

Anderson, O.F. (2014). Fish and invertebrate bycatch in New Zealand deepwater fisheries from 1990–91 until 2011–12 (New Zealand Aquatic Environment and Biodiversity Report 139)

Baker, G.B. Jensz, K., & Sagar, P. (2014). 2013 Aerial survey of Salvin's albatross at the Bounty Islands. Report prepared for DOC

Ballara, S.L. (2015). Descriptive analysis of the fishery for hake (*Merluccius australis*) in HAK1,4 and 7 from 1989–90 to 2012–13, and a catch-per-unit-effort (CPUE) analysis for SubAntarctic hake (New Zealand Fisheries Assessment Report 2015/2)

DWG (2015a). Situation report for Hake as at November 2015 prepared for the third annual surveillance audit. Report prepared by DWG

DWG (2015b). Vessel Management Plan: Vessel Specific Procedures for Mitigating Incidental Capture of Seabirds - Trawlers < 28 m LOA

Ford *et al.*, (2015). Qualitative (Level 1) Risk Assessment of the impact of commercial fishing on New Zealand Chondrichthyans. New Zealand Aquatic Environment and Biodiversity Report No. 157. MPI: Wellington

Hewitt, J.E. *et al.*, (2015). Evaluating demersal fish richness as a surrogate for epibenthic richness in management and conservation (Diversity and Distributions 21, 901-912).

MPI (2015a). Annual Operational Plan for Deepwater Fisheries for 2015/16

MPI (2015b). Science workshop on assessing the effects of mobile bottom fishing methods on benthic fauna and habitats (18-19 February 2015). (Terms of Reference)

Richard, Y. & Abraham, E.R. (2013). Risk of commercial fisheries to New Zealand seabird populations (New Zealand Aquatic Environment and Biodiversity Report No. 109. MPI: Wellington)

Thompson, F.N. *et al.*, (2015). Reported New Zealand sea lion (*Phocarctos hookeri*) captures in commercial trawl fisheries, 1991–92 to 2012–13 (New Zealand Aquatic Environment and Biodiversity Report 145)

P3

DWG (2015k). Memo to Directors, Shareholders & Vessel Operators: DWG Operational Procedures & MPI Management Requirements for 2015-16. DWG: Auckland

DWG (2015l). Memo to Vessels and Skippers: DWG Operational Procedures & MPI Management Requirements for 2015-16. DWG: Auckland

DWG (2014k). Hoki Management 2014-15 Fishing Year (Letter to Hoki Quota Owners). DWG: Auckland

DWG (2014l). Hoki Operational Procedures (DWG Operational Procedures). DWG: Auckland

DWG (2014m). Reporting Operational Procedures. DWG: Auckland

MPI (2015a). Annual Operational Plan for Deepwater Fisheries for 2015/16. MPI: Wellington

MPI (2015b). Annual Review Report for Deepwater Fisheries for 2013/14 (MPI Technical Paper No: 2015/07). MPI: Wellington

MPI (2015d). Review of Management Controls for Hoki 1 (HOK 1) in 2015 Consultation Document. MPI Discussion Paper No: 2015/19. MPI: Wellington

MPI (2015e). Review of Sustainability Measures and Other Management Controls for Selected Deepwater Fish stocks Final Advice and Recommendations for the TAC, TACC, and Allowances and

MPI (2015f). Review of Sustainability Measures and Other Management Controls for Selected Deepwater Fish stocks Final Advice and Recommendations for the TAC, TACC, and Allowances and Deemed Value Rates for six fish stocks (MPI Information Paper No: 2014/15 Appendix II). MPI: Wellington

MPI (2015g). Sustainability measures and other management controls for 1 October 2015 (Decision Letter). MPI: Wellington

MPI (2015m). Re: Update on personnel arrangements at the Ministry for Primary Industries for 2015 MSC Surveillance Audits for hoki, hake, ling, and southern blue whiting (Letter to CAB). MPI: Wellington

Appendix 4 - Additional detail on conditions/ actions/ results (if necessary)

NA

Appendix 5 - Revised Surveillance Program

Table 5.1 : Surveillance level rationale

Year	Surveillance activity	Number of auditors	Rationale
2	<i>On-site surveillance audit & re-certification site visit.</i>	<i>3 auditors on-site with remote support from 1 auditor</i>	Re certification has been requested by the client so that NZ deepwater fisheries, hoki, hake, ling and southern blue whiting can be aligned for future surveillances

Table 5.3: Fishery Surveillance Program Revised

Surveillance Level	Year 1	Year 2	Year 3	Year 4
<i>e.g. Level 5</i>	<i>e.g. On-site surveillance audit</i>	<i>On-site surveillance audit & re-certification site visit.</i>	<i>e.g. On-site surveillance audit</i>	<i>e.g. On-site surveillance audit & re-certification site visit.</i>