

## MSC SUSTAINABLE FISHERIES CERTIFICATION

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



2<sup>nd</sup> Surveillance Audit

November 2016

Certificate Code	F-ACO-0044
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# 1 Introduction

## 1.1 Scope of Surveillance

This report outlines the findings of the 2<sup>nd</sup> Annual Surveillance of the New Zealand Hake Trawl 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:	Hake ( <i>Merluccius australis</i> )
Geographical area:	Southland and Sub-Antarctic, HAK1
Method of capture:	Trawl
Stock:	New Zealand Hake, HAK1
Management System:	NZ Quota Management System (Ministry for Primary Industries)
Client Group:	Deepwater Group Limited

### UoC 2

Species:	Hake ( <i>Merluccius australis</i> )
Geographical area:	Chatham Rise QMA, HAK4
Method of capture:	Trawl
Stock:	New Zealand Hake, HAK4
Management System:	NZ Quota Management System (Ministry for Primary Industries)
Client Group:	Deepwater Group Limited

### UoC 3

Species:	Hake ( <i>Merluccius australis</i> )
Geographical area:	Challenger QMA, HAK7
Method of capture:	Trawl
Stock:	New Zealand Hake, HAK7
Management System:	NZ Quota Management System (Ministry for Primary Industries)
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-hake-trawl-fishery/assessment-downloads-1/20140910\\_PCR\\_HAK075.pdf](https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/pacific/new-zealand-hake-trawl-fishery/assessment-downloads-1/20140910_PCR_HAK075.pdf)

### 1.3 Certificate Holder Details

Fishery name	New Zealand Hake Trawl		
Species and Stock	New Zealand Hake ( <i>Merluccius australis</i> ) HAK1, HAK4 & HAK7		
Date certified	16 <sup>th</sup> September 2014	Date of expiry	15 <sup>th</sup> September 2019
Surveillance level and type	Normal - Onsite		
Date of surveillance audit	21 <sup>st</sup> -23 <sup>rd</sup> 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	
	Phone/Fax	0131 335 6662	
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Client contact details	Address	Deepwater Group Ltd. PO Box 5872, Wellesley Street, Auckland, 1141, New Zealand	
	Phone/Fax	+64 09 379 05556	
	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 in 2014 no conditions of certification were raised by the assessment team. One recommendation was made which was closed at the first annual surveillance audit. The 2015 surveillance audit raised a new recommendation. Whilst not obligatory, the client is encouraged to act upon it within the spirit of the certification. This recommendation was reviewed 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 as a remote P1 assessor. 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 modeling 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 on-site audit was carried out from the 21<sup>st</sup> to 23<sup>rd</sup> 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, including sea lions, fur seals and seabirds. Updated capture data were presented and considered by the audit team.

The single recommendation on habitat classification and impacts was also reviewed, but while progress is being made on various strands of work linked to the issue, no new results were presented this year.

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 FAM v1.3 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

#### 3.3 Compliance

There has been no risk assessment of this fishery in the last year. There is no current intent to do a compliance review, but will be directed by management as required.

#### 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

##### 3.5.1 Changes in stock status and exploitation patterns

This is reported by UoC. No new assessments have been performed since the last audit for HAK1, HAK4 and HAK7 (Horn, 2013; Horn, 2015). Stock status is summarized below.

##### 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 $N_{eff}$	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)
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The management reference points for hake 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).

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 was scheduled for mid 2018.

### UoC 2: Chatham Rise (HAK 4)

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 run.

Run	$B_0$	$B_{2012}$	$B_{2012}(\%B_0)$
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 HAK 4 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 mid 2017.

### UoC 3: West coast South Is (HAK7)

A new assessment for HAK 7 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 HAK 7 had been last updated using data up to the end of the 2008–09 fishing year (Horn, 2013). 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	$B_0$	$B_{2012}$	$B_{2012}(\%B_0)$
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., 4500 t annually) would probably allow the stock to grow slightly in the next five years, while catches at the level of the TACC (7700 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 mid 2017.

### 3.6 Traceability

There are no issues in this fishery

### 3.7 TAC and catch data

Table 3.7-1 TAC and Catch Data

<b>TAC</b>	<b>Year</b>	<b>2016-17</b>	<b>Amount</b>	<b>UoC1: 3701.143t</b> <b>UoC2: 1,800t</b> <b>UoC3: 7,700t</b>
<b>UoA share of TAC</b>	<b>Year</b>	<b>2016-17</b>	<b>Amount</b>	<b>UoC1: 3701.143t</b> <b>UoC2: 1,800t</b> <b>UoC3: 7,700t</b>
<b>UoC share of TAC</b>	<b>Year</b>	<b>2016-17</b>	<b>Amount</b>	<b>UoC1: 3701.143t</b> <b>UoC2: 1,689 t</b> <b>UoC3: 7,168 t</b>
<b>Total green weight catch by UoC</b>	<b>Year (most recent)</b>	<b>2015-16</b>	<b>Amount</b>	<b>UoC1: 1,584.111t</b> <b>UoC2: 274.323t</b> <b>UoC3: 2,863.767t</b>
	<b>Year (second most recent)</b>	<b>2014-15</b>	<b>Amount</b>	<b>UoC1: 1,725.042t</b> <b>UoC2: 303.857 t</b> <b>UoC3: 6,219.467t</b>

### 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
	2.4.1	N/A	N/A
<b>Recommendation</b>	To review at the next audit the research work to assess bottom trawl footprint and impact, by BOMECH habitat class or an improved tool when it becomes available.		
<b>Progress on Recommendation: Year 1</b>	None – the recommendation was introduced only at the Year 1 audit.		
<b>Progress on Recommendation: Year 2</b>	<p>An update against this recommendation was provided to the Audit team, highlighting that the BOMECH habitat classification scheme was considered to be of limited value for assessing trawl and dredge impacts on benthic fauna and habitats in New Zealand waters, and that a variety of work streams are being pursued in order to better understand interactions (DWG 2016).</p> <p>Going forward, it is understood that the preferred approach is the development of a spatially explicit, risk-based approach, similar to an approach applied in Australian waters (Pitcher <i>et al.</i> 2015).</p> <p>In the last year, progress has been made regarding three key work areas: i) quantifying the trawl footprint, ii) improving knowledge of benthic distributions, and iii) assessing risk to benthic habitats from trawling. However, the audit team well appreciates the complexity and cost of undertaking science in deep water, and that the work is ongoing – no results or outputs were presented.</p> <p>Therefore, this will continue to be an area of interest to future audit and assessment teams.</p>		
<b>Status of recommendation: Year 4</b>	This recommendation remains open.		

## 5 Conclusion

### 5.1 Summary of findings

This fishery remains certified

## 6 References

### P1

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. 55 p.

MPI (2016). Fisheries Assessment Plenary, May 2016: Stock Assessments and Stock Status: Hake. pp. 443 – 468.

### P2

DWG (2016). Situation report for hake. Prepared for the fourth surveillance audit, November 2016. Deepwater Group Ltd., 13 pp.

Pitcher, C.R., Ellis, N., Althaus, F., Williams, A. & I. McLeod (2015). Predicting benthic impacts & recovery to support biodiversity management in the South-east Marine Region. Pages 24–25 in Bax,

N.J. & Hedge, P. [Eds.]. 2015. Marine Biodiversity Hub, National Environmental Research Program, Final report 2011–2015. Report to Department of the Environment. Canberra, Australia. <http://nerpmarinebiodiversity2015.report/predicting-benthic-impacts-and-recovery-to-support-biodiversity-management-in-the-south-east-marine-region/>

### P3

MPI (2016). Annual Operational Plan for Deepwater Fisheries for 2016/17. MPI Technical Paper No. 2016/46. MPI: Wellington.

MPI (2016). Annual Operational Plan for Deepwater Fisheries for 2016/17. MPI: Wellington.

MPI (2016). Annual Review Report for Deepwater Fisheries for 2014/15. MPI Technical Paper No: 2016/09. MPI: Wellington.

MPI (2016). Future of our Fisheries. <https://mpi.govt.nz/news-and-resources/consultations/future-of-our-fisheries#future>.

**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**

Although this fishery is not due for reassessment until 2019, It is proposed that it enters the reassessment process in April 2017. This allows for all four MSC certified NZ deepwater fisheries (i.e. hake, ling, hoki and southern blue whiting) to be assessed at the same time.