

Southern Blue Whiting Situation Report

Prepared for 2017 MSC Reassessment



deepwater
group

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1. Purpose of this report

This report is one of three prepared for the New Zealand 2017 combined MSC reassessments for hake, hoki, ling and southern blue whiting. It provides an update on three southern blue whiting Units of Certification (UoC): SBW 6B Bounty Platform, SBW 6I Campbell Island Rise and SBW 6R Pukaki Rise, and builds on the information previously provided for the 2016 surveillance audit.

It is Deepwater Group Limited's (DWG) submission that these three fisheries continue to conform with the MSC Fisheries Standard (FCR V1.3) as evidenced in the following updated information and references.

All cited references are available here: www.deepwatergroup.org/certification/southern-blue-whiting-trawl-fishery-re-assessment-2017/

2. Overview of fishery status and information

Southern blue whiting certification details

Certification date	2013
Stock areas	UoC 1: Bounty Platform (SBW 6B) UoC 2: Campbell Island Rise (SBW 6I) UoC 3: Pukaki Rise (SBW 6R)
Species	<i>Micromesistius australis</i>
Method/gear	Mid-water and bottom trawling

Stock status, TACC & catches

UoC 1 – Bounty Platform (SBW 6B) (MPI, 2017)

Update on stock status (2017)	A fishing mortality rate was calculated from the harvest control rule. Harvest control rule simulations estimated that the stock status was Likely (>60%) to be below target F and overfishing was Unlikely (<40%) to be occurring
TACC 2017-18	2,377 t, based on a management strategy evaluation which used simulation modeling to test the fishing mortality level that would be most appropriate to maintain (or recover) the stock to B_{MSY} and to maintain the stock above 20% B_0 for 90% of the time.
TACC 2016-17	2,940 t
TACC 2015-16	2,940 t

TACC 2014-15	6,860 t ¹
UoC share of TACC	100%
SBW 6B catch 2016-17	2,569 t
SBW 6B catch 2015-16	2,405 t
SBW 6B catch 2014-15	7,054 t ¹

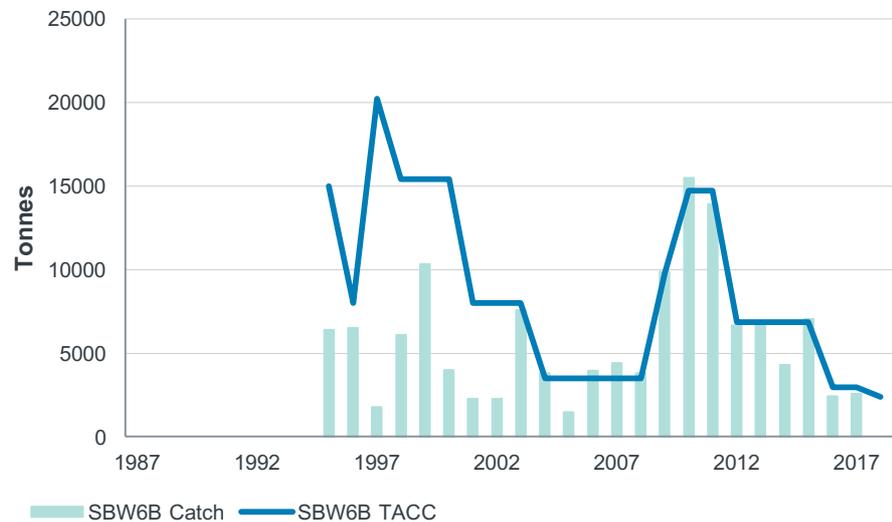


Figure 1 Total Allowable Commercial Catches and reported catches for SBW 6B

UoC 2 – Campbell Island Rise (SBW 6I) (MPI, 2017)

Update on stock status (2014)	B ₂₀₁₄ is estimated to at or above 50% B ₀ and is Very Likely (>90%) to be at or above the target (40%)
TACC 2017-18	39,200 t
TACC 2016-17	39,200 t
TACC 2015-16	39,200 t
TACC 2014-15	39,200 t
UoC share of TACC	100%

¹ In addition to the TACC of 6,860 t, an MPI Special Permit provided for up to 2,000 t of SBW 6B catch to be taken without the requirement to be balanced against ACE, thereby increasing the allowable catch to 8,860 t.

SBW 6I catch 2016-17	19,875 t
SBW 6I catch 2015-16	22,100 t
SBW 6I catch 2014-15	24,592 t



Figure 2 Total Allowable Commercial Catches and reported catches for SBW 6I

UoC 3 – Pukaki Rise (SBW 6R) (MPI, 2017)

Update on stock status (2002)	Current status uncertain. Catches in recent years unlikely to threaten stock integrity.
TACC 2017-18	5,500 t
TACC 2016-17	5,500 t
TACC 2015-16	5,500 t
TACC 2014-15	5,500 t
UoC share of TACC	100%
SBW 6R catch 2016-17	11 t
SBW 6R catch 2015-16	12 t
SBW 6R catch 2014-15	34 t

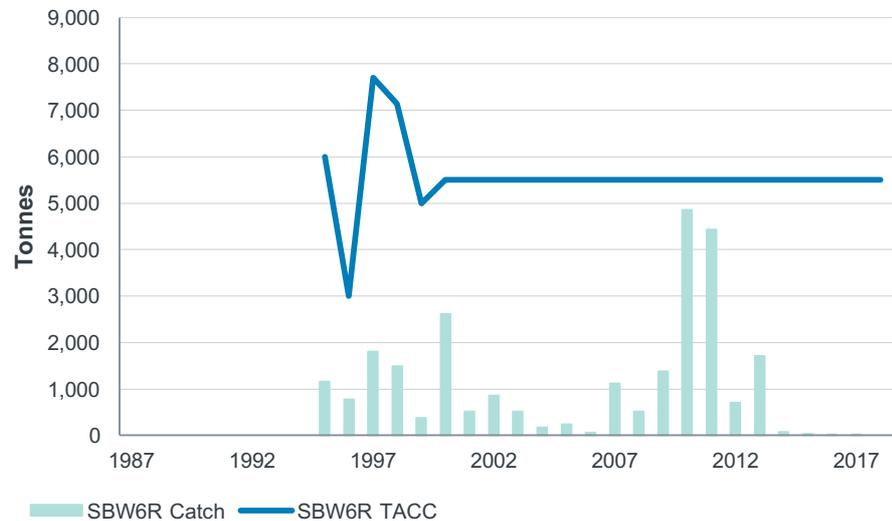


Figure 3 Total Allowable Commercial Catches and report catches for SBW 6R

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3. Progress on recommendation

Recommendation P1.1.1

“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 the Campbell Island stock 6I), the management action that has been taken to address this.

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 SBW6B and SBW6R.”

SBW 6B Bounty Platform:

A stock assessment was completed for SBW 6B in 2014 but this has since been rejected. Models were not adequate to explain the acoustic indices, the age frequency data, and/or the results were ambiguous.

As an alternative the Working Group investigated the use of a simple harvest control rule (HCR) that used the most recent acoustic index of abundance as an absolute measure of abundance. A HCR that would lead to a low risk of the stock falling below the soft limit reference point was developed.

Simulation results for different levels of harvest and assumptions of natural mortality are provided in MPI (2017). These estimate that SBW 6B is Likely (>60%) to be below the target F and that Overfishing is Unlikely (<40%) to be occurring.

SBW 6R Pukaki Rise:

There is no stock assessment planned for Pukaki Rise this year noting that SBW target catches have not exceeded 50 tonnes since 2011-12 and total catches have been less than 100 t from 2014-15 (Tables 1-3). This is a reflection of a lack of fishing effort rather than of any relation to stock size or abundance. The spawning season at Pukaki coincides with the spawning season at the Campbell Islands where a substantial TACC is available, where catch rates are higher and where almost all of the fishing effort is directed. With Pukaki Rise catches at this low level, it is considered highly unlikely the fishery will be having any substantive impact on stock status or on recruitment.

Table 1 SBW 6R catches by target species (as provided by MPI)

	2011-12		2012-13		2013-14		2014-15		2015-16	
	Catch (t)	Tows								
SBW	692	64	10	4	49	4	0	0	0	0
Other	58	76	19	37	117	94	92	59	20	50

Table 2 SBW 6R catches by gear type (bottom trawl, BT; mid-water trawl, MT) (as provided by MPI)

	2011-12		2012-13		2013-14		2014-15		2015-16	
	Catch (t)	Tows								
BT	376	114	19	37	117	96	92	59	20	50
MW	375	26	10	4	49	2	0	0	0	0

Table 3 SBW 6R observer coverage (all tows in area, not just SBW) (as provided by MPI)

	2011-12	2012-13	2013-14	2014-15	2015-16
Observer Coverage	34%	71%	31%	35%	34%

4. Overview of environmental information

Observer Coverage

Table 4 SBW observer coverage (all SBW trawl fisheries)

	2011-12	2012-13	2013-14	2014-15	2015-16
Observer Coverage	70%	100%	100%	99%	100%

Retained & bycatch species

The southern blue whiting fishery is characterised as a “clean” fishery with minimal fish bycatch (MPI, 2017). Ballara (2015) reported a total of 65 bycatch species in southern blue whiting fisheries for the period 1990-91 to 2012-13. For the most recent five-year period (2008-09 to 2012-13), the main bycatch species contributed less than 0.5% to the overall catch in the southern blue whiting fisheries. The most abundant bycatch species were: ling (214 t), silverside (170 t), hake (128 t), hoki (111 t), spiny dogfish (70 t), porbeagle shark (50 t), opah (41 t), rattails (27 t), javelinfish (22 t) and pale ghost shark (16 t). Half (ling, hake, hoki, spiny dogfish and pale ghost shark) of the above 10 bycatch species, representing 63% of the average top 10 catch, are managed within the Quota Management System.

ETP species

Southern blue whiting trawlers occasionally interact with marine mammals and seabirds.

New Zealand sea lions

Following the 2013 season when 21 New Zealand sea lions were incidentally captured in the SBW 6I fishery, the use of sea lion exclusion devices (SLEDs) became a requirement for all southern blue whiting vessels in this fishery, along with 100% observer coverage. Observed and estimated sea lion captures in all southern blue whiting fisheries are provided below. Of particular note:

- All captures occurred in the Campbell Rise SBW 6I fishery
- There were six captures in 2015 and three captures in 2016 (Figure 4).

Prior to the 2016 fishing season², DWG ensured all vessels had up-to-date Vessel Management Plans (VMPs) and Operational Procedures (DWG, 2014, 2014a, 2014b), on board each vessel when fishing 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 (and seabirds):

- DWG memo to SBW operators and vessel skippers: ETP species mitigation 2016-17 (DWG, 2016)
- DWG memo to SBW 6I vessel skippers: sea lion risk management actions (DWG, 2016a)
- MPI Operational Plan for SBW 6I sea lion risk mitigation (MPI, 2016c)

A summary of performance against the SBW Operational Plan for managing the

² The SBW fishing year runs from 1 April – 31 March, SBW fishing occurs during August-September, and the 2016 season falls into the 2016-17 fishing year. HOK, HAK & LIN fishing years run from 1 October – 30 September.

incidental capture of sea lions during 2016 (i.e. for the 2016-17 SBW fishing year) at Campbell Island (SBW 6I) noted the following (MPI, 2016d):

- Eight vessels participated in the SBW 6I fishery (ten 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.

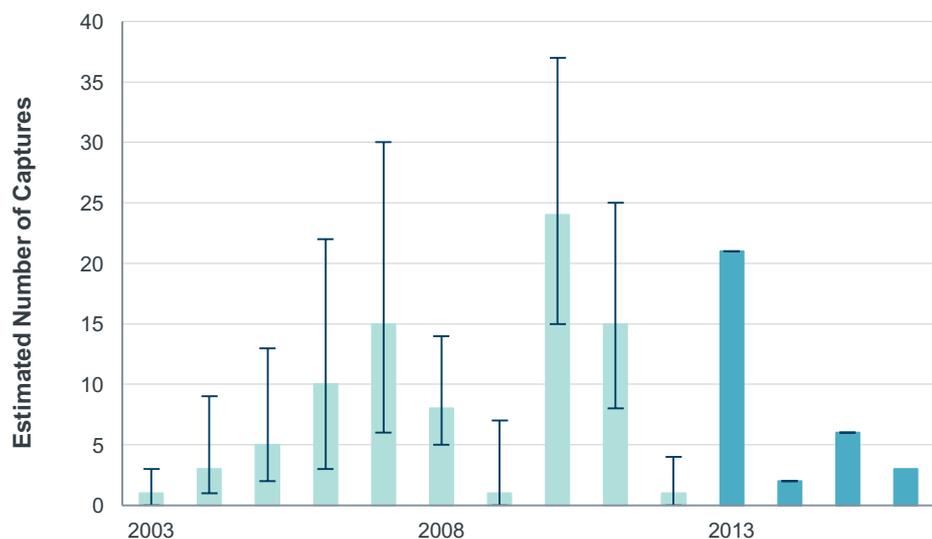


Figure 4 Modelled estimates of sea lion captures in all southern blue whiting fisheries (all captures in SBW 6I and dark green represents 100% observer coverage) (MPI, 2017)

A multi-purpose scientific survey of the Auckland Islands and Stewart-Snares shelf areas was undertaken during 2016 with the objective of investigating a potential mechanism of food limitation for breeding populations of sea lions. A description of the survey and some provisional results are provided by Roberts (2016).

A quantitative risk assessment of threats to New Zealand sea lions, commissioned by the Ministry for Primary Industries (MPI) and the Department of Conservation (DOC), was undertaken (Roberts & Doonan, 2016) to inform the development of a Threat Management Plan (TMP) for the species (DOC, 2017a). This was in response to a series of low pup census estimates at the main breeding colony at the Auckland Islands.

The final TMP was published July 2017 (DOC, 2017a). This outlines a five-year plan that includes undertaking annual monitoring programmes at Campbell Island, which will increase the frequency and consistency of pup counts and enable increased effort on tag-resighting. The TMP “aims to halt the decline of the New Zealand sea lion population within five years and ensure the population is stable or increasing within 20 years. The ultimate goal is to achieve Not Threatened status.” The New Zealand Government announced a \$2.8 million investment over four years to support the recovery of this species as part of the TMP.

New Zealand Fur seals

The New Zealand fur seal was classified as “Least Concern” by IUCN in 2008 and as “Not Threatened” under the New Zealand Threat Classification System in 2010 (Baker *et al.* 2016).

In the 2014-15 fishing year, there were 41 observed captures of New Zealand fur seal in southern blue whiting trawl fisheries (SBW1, 6A, 6B, 6I, 6R) with 100% observer coverage (Figure 5). Most of these captures were from the Bounty Platform fishery (Figure 6).

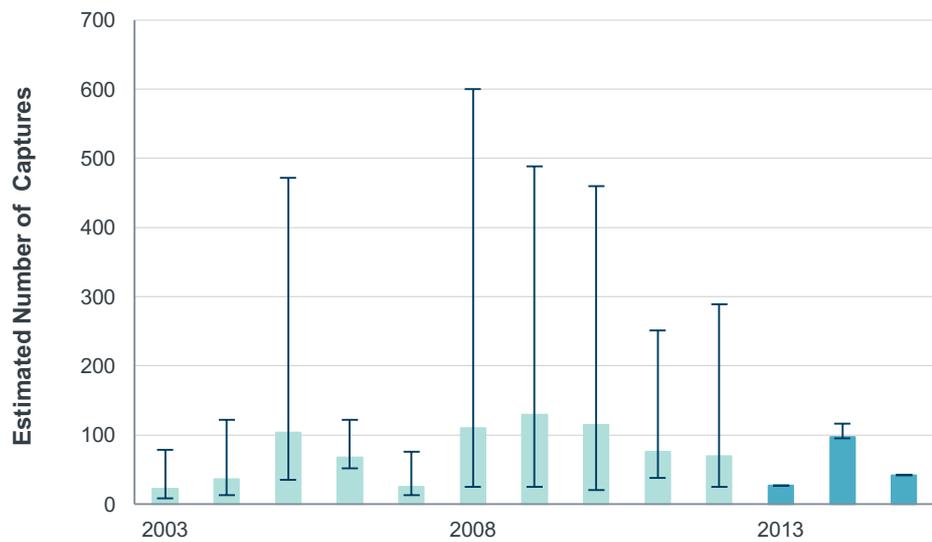


Figure 5 Modelled estimates of total fur seal captures in all southern blue whiting fisheries (i.e. adjusted for differing levels of observer coverage (dark bars represent years of 100% observer coverage)(MPI, 2017)

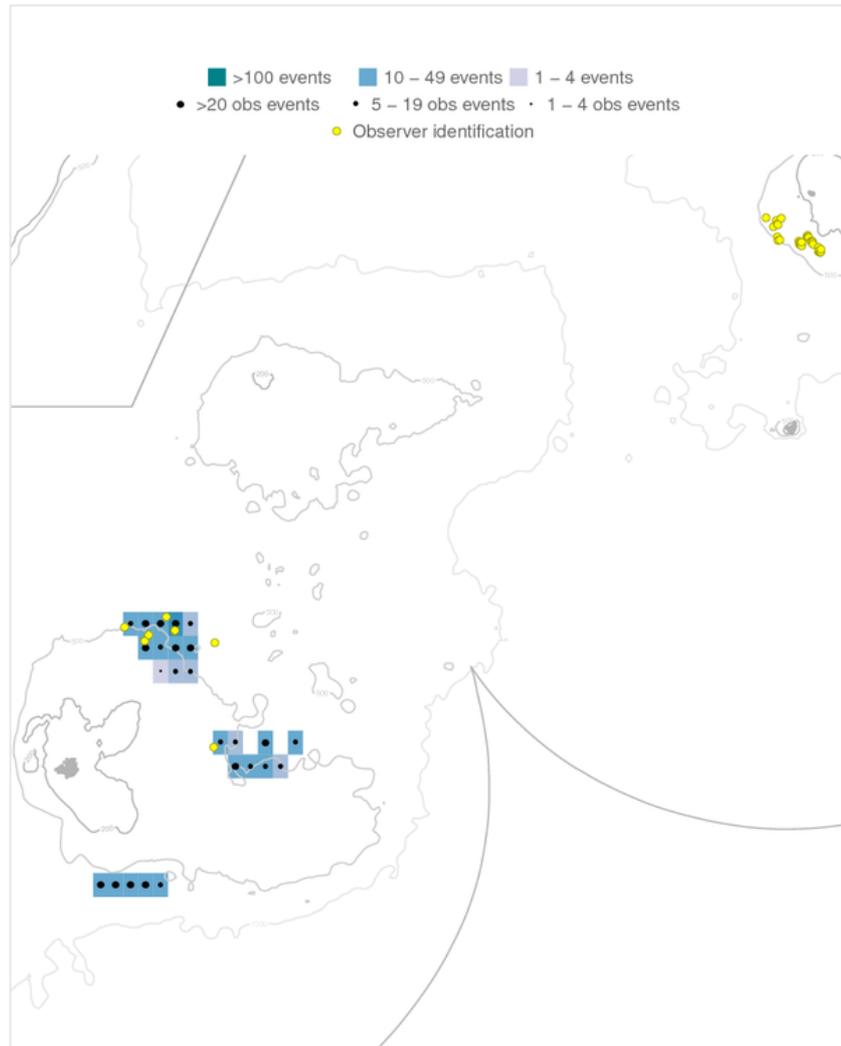


Figure 6 Locality of fur seal captures during 2014-15 fishing year (yellow dots represent captures, square cells represent fishing effort, black dots represent observed fishing effort) (Source: <https://psc.dragonfly.co.nz/2016v1/released/new-zealand-fur-seal/southern-blue-whiting-trawl/all-vessels/eez/2014-15/>)

New Zealand fur seals are distributed over a very extensive area, including all of the sub-Antarctic islands, and their numbers are believed to be increasing. An excerpt from the Department of Conservation website (DOC, 2016b) supports this view:

Population: about 200,000.

Threat status: least concern (population trend: increasing).

Found on: rocky shores throughout mainland New Zealand, the Chatham Islands, and the Subantarctic islands, as well as parts of Australia.

Exclusion devices, whilst effective for the much larger New Zealand sea lions, are less practicable for the smaller New Zealand fur seals (DOC, 2009).

There are relatively few New Zealand fur seal captures at SBW 6I, possibly due to the greater distances between the fishing operations and the fur seal colonies or haul-outs.

Seabirds

In the 2014-15 fishing year, there were seven observed captures of seabirds in the southern blue whiting trawl fisheries (SBW1, 6A, 6B, 6I, 6R) with 100% observer coverage (MPI, 2017). Six of these were from SBW 6B, 6I and 6R. Observed captures were of grey petrels (5), and Salvin's albatrosses (2).

Overall, the impact that the southern blue whiting fisheries have on seabirds is “very small” (MPI, 2017).

The high observer coverage (i.e. 100%) is scheduled to continue, as are seabird mitigation measures guided by the NPOA seabirds (MPI, 2013).

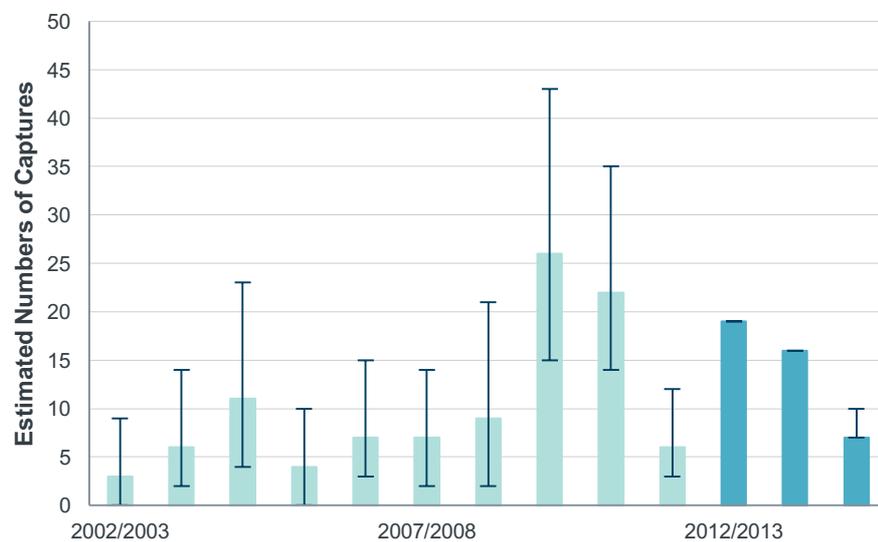


Figure 7 Modelled estimates of total seabird captures in all southern blue whiting fisheries i.e. adjusted for differing levels of observer coverage (dark bars represent years of 100% observer coverage)(MPI, 2017)

Whales & dolphins

There have been no reported whale or dolphin captures in the southern blue whiting fisheries.

Basking sharks

For the first time in the history of the southern blue whiting fishery a basking shark was reported captured in SBW 6B during the 2016 fishing season.

The Department of Conservation (DOC) has undertaken a review of basking shark interactions in 2016-17 (Francis, 2017).

An active mitigation programme administered by DWG and monitored by MPI has been in place since 2013 to reduce shark captures in the deepwater fisheries (DWG, 2014b).

Corals

Protected coral bycatch has been “negligible” in this fishery (MPI, 2017).

Benthic interactions

The trawl footprint of these fisheries is monitored to assess their interactions with the benthic habitat (Black & Tilney, 2017, and Black, 2016). Each year, the total trawl footprint has been calculated since 1989 for eleven main deep water species including southern blue whiting, as well as the cumulative footprint for all deep water fisheries.

Southern blue whiting is principally taken using mid-water trawls (94% for calendar years 2011-2013) (MPI, 2017). About 55% of the trawl effort is fished on or near the seabed (0-<5m off the seabed).

For the most recent five-year period for which trawl footprint data are available, 2009-10 to 2013-14, the swept areas by southern blue whiting fisheries were as follows:

- Bounty Islands SBW 6B – less than 4% of the fishable area (i.e. bounded by the 200-800 m depth contours)
- Campbell Island SBW 6I – less than 3% of the fishable area (i.e. bounded by the 200-800 m depth contours)
- Pukaki Rise SBW 6R – less than 1% of the fishable area (i.e. bounded by the 200-800 m depth contours), (Black, 2016).

Tingley (2017) summarises New Zealand’s strategy for managing benthic effects from fishing.

The New Zealand EEZ contains 17 Benthic Protection Areas (BPAs) representatively distributed around the EEZ that close 30% of the EEZ to bottom fishing and include about 52% of all seamounts over 1,500 m elevation and 88% of identified hydrothermal vents (Helson *et al.*, 2010).

Key P2 references

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5. Overview of management information

Legal & customary framework

New Zealand's fisheries management is centred on the Quota Management System (QMS), a system introduced in 1986 based on Individual Transferrable Quota (quota), Total Allowable Catch (TAC) limits and Total Allowable Commercial Catch (TACC) limits.

Quota provides a property right to access commercial fisheries and has been allocated to Maori as part of the Treaty of Waitangi Settlements that acknowledge the Treaty guaranteed Maori “*full exclusive and undisturbed possession of their...fisheries.*”

Quota is a tradable property right that entitles the owner to a share of the TACC. At the commencement of each fishing year, quota gives rise to Annual Catch Entitlements (ACE) which are tradable, expressed in weight, and entitle the holder to land catch against them. The QMS enables sustainable utilisation of fisheries resources through the direct control of harvest levels based on the best available science. The QMS is administered by MPI through the Fisheries Act 1996.

New Zealand has implemented one of the most extensive quota-based fisheries management systems in the world, with over a 100 species or species-complexes of fish, shellfish and seaweed now being managed within this framework. Almost all commercially targeted fish species within New Zealand’s waters are now managed within the QMS.

At an operational level, the southern blue whiting fisheries are managed in accordance with the National Fisheries Plan for Deepwater and Middle-depth Fisheries (Ministry of Fisheries, 2010, and MPI, 2016a). There is a species-specific chapter for southern blue whiting within this plan (MPI, 2011).

The National Deepwater Plan was developed to align with Fisheries 2030 (Ministry of Fisheries, 2009) and collectively consists of three parts:

- Five-year plan – divided into two sections, Part1A (of which an updated draft is currently being publicly consulted on³) and Part1B. Part 1A sets the strategic direction for deep water fisheries. Part 1B comprises fishery specific-chapters and how the Management Objectives will be applied at a species level
- Annual Operational Plan (AOP) – this details the management actions for delivery during the financial year
- Annual Review Report – which reports progress towards meeting the five-year plan and annual performance of the deep water fisheries against the AOP.

Collaboration

In 2006, DWG and MPI entered into a formal partnership to enable collaboration in the management of New Zealand’s deep water fisheries. This partnership was updated in 2008 and 2010 and has directly facilitated improved management of the southern blue whiting fisheries in almost all respects through:

- A close working relationship under a shared and agreed vision, objectives and collaborative work plans
- Real-time, open communication between DWG and MPI on information relevant to management measures, particularly from the MPI Observer Programme and commercial catching operations.

MPI and DOC actively consult with interested parties to inform management decisions through their open scientific working groups and public consultation processes.

³ Refer <https://www.mpi.govt.nz/news-and-resources/consultations/national-fisheries-plans-for-highly-migratory-species-and-deepwater-fisheries/>

Compliance & enforcement

MPI maintains a comprehensive compliance programme, which includes both encouraging compliance through support and creating effective deterrents. This strategy is underpinned by the VADE model, which focuses on all elements of the compliance spectrum as follows:

1. Voluntary compliance – outcomes are achieved through education, engagement and communicating expectations and obligations
2. Assisted compliance – reinforces obligations and provides confidence that these are being achieved through monitoring, inspection, responsive actions and feedback loops
3. Directed compliance – directs behavioral change and may include official sanctions and warnings
4. Enforced compliance – uses the full extent of the law and recognises that some individuals may deliberately choose to break the law and require formal investigation and prosecution.

Since 1994, all vessels over 28 m have been required by law to be part of the Vessel Monitoring System (VMS) which, through satellite telemetry, enables MPI to monitor all deep water vessel locations at all times. In combination with at-sea and aerial surveillance, supported by the New Zealand joint military forces, the activities of deep water vessels are fully monitored and verified to ensure compliance with both regulations and with industry-agreed operating procedures.

All commercial catches from QMS stocks must be reported and balanced against ACE at the end of the month. It is illegal to discard or not to report catches of QMS species. Catches may only be landed at designated ports and sold to Licensed Fish Receivers (LFRs). Reporting requirements for deep water trawl vessels include logging the location, depth, main species caught for each tow, and total landed catch for each trip.

MPI audits commercial vessel catch-effort and landing reports, reconciles these against multiple sources including VMS records, data collected by onboard MPI observers, and catch landing records from LFRs to ensure that all catches are reported correctly.

Observer coverage has been 100% since 2013.

Commercial fishermen face prosecution and risk severe penalties, which include automatic forfeiture of vessel and quota upon conviction of breaches of the fisheries regulations (unless the court rules otherwise). Financial penalties are also imposed in the form of deemed values to discourage fishermen from over-catching their ACE holdings.

The extensive regulations governing these fisheries are complemented by additional industry-agreed non-regulatory measures, known as the New Zealand Deepwater Fisheries Operational Procedures. The Minister for Fisheries relies on the effectiveness of both regulatory and non-regulatory measures to ensure the sustainable management of these fisheries.

As part of DWG's Operational Procedures, DWG has an Environmental Liaison Officer whose role is to liaise with vessel operators, skippers and MPI to assist with the effective implementation of these Operational Procedures.

Fisheries plans

The National Fisheries Plan for Deepwater and Middle-depth fisheries is a statutory document approved by the Minister of Fisheries. This Plan provides an enabling framework outlining agreed management objectives, timelines, performance criteria and review processes. There is a fisheries-specific chapter for the southern blue whiting fisheries within this Plan.

The actual management measures and delivery outcomes in the Plan are specified in MPI's Annual Operational Plan (AOP), which is reviewed and updated annually. In addition, an Annual Review Report assesses performance against the AOP and is publicly available.

Research plans

Research needs for deepwater fisheries are driven by the Objectives of the National Deepwater Plan and delivered through the research programme for deep water fisheries.

All research projects are reviewed by MPI's Science Working Groups and assessed against MPI's Research and Science Information Standard for New Zealand Fisheries.

Tables 8-10 of MPI (2016a) specify planned research for 2016-17.

MPI's medium-term research plan for deep water fisheries provides a five-year outlook on planned research to support sustainable management of deepwater fisheries.

Key P3 references

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