Marine Stewardship Council fisheries assessments

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New Zealand Hake, Hoki, Ling and Southern Blue Whiting- Southern Blue Whiting Report

Public Certification Report

Conformity Assessment Body (CAB)	LRQA
Assessment team	Jo Akroyd, Stewart Norman and André Punt
Fishery client	NZ Seafood, Deepwater Council
Assessment type	Reassessment
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Assessment Data Sheet

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2. Glossary

ACAP	Agreement on Conservation of Albatross and Petrels
ACE	Annual Catch Entitlement
ACCOBAMS	Agreement on the Conservation of Small Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area
AEEF	Assessment of the Environmental Effects of Fishing
AEWA	African-Eurasian Migratory Waterbird Agreement
ALC	Automatic Location Communicator
AOP	Annual Operational Plan
ARR	Annual Review Report
B0	Unfished Equilibrium Biomass
BOMEC	Benthic Optimised Marine Environment Classification
BMA	Benthic Management Areas
BP	Bounty Platform
BPA	Benthic Protection Area
BRT	Boosted Regression Tree
CAY	Current Annual Yield
CASAL	C++ Algorithmic Stock Assessment Laboratory
CASAL2	C++ Algorithmic Stock Assessment Laboratory (version 2)
CITES	Convention on International Trade in Endangered Species
CLR	Catch Landing Return
CMM	Conservation Management Measures
CMS	Convention on Migratory Species
CPUE	Catch Per Unit Effort
CP	Campbell Plateau
CR	Chatham Rise
CS	Cook Strait
CSP	Conservation Services Programme
CV	Coefficient of Variation
DFAWG	Deepwater Fisheries Assessment Working Group
DOC	New Zealand Department of Conservation
DSCC	Deep Sea Conservation Coalition
DV	Deemed Value
DWC	Deepwater Council
DWG	Deepwater Group Limited
DWWG	Deep Water Working Group
ECO	Environment and Conservation Organisations
ECNI	East Coast North Island
ECSI	East Coast South Island
ELO	Environmental Liaison Officer
ESCR	East and South Chatham Rise
EEZ	Exclusive Economic Zone
ELR	Electronic Reporting
ETP	Endangered, Threatened, Protected Species
FARs	Fishery Assessment Reports
FAWGs	Fishery Assessment Working Groups
FCV	Foreign Charter Vessel
FMA	Fishery Management Areas
FPAG	Fish Plan Advisory Group

FNZ	Fisheries New Zealand-entity within MPI responsible for fisheries science and management
GPR	Geospatial Position Reporting
HCR	Harvest Control Rule
HSS	Harvest Strategy Standard for New Zealand Fisheries
IQANZ	Independent Quality Assurance New Zealand
IQF	Individual Quick Freezing
IUCN	International Union for Conservation of Nature
LFR	Licensed Fish Receiver
LMA	Large Marine Reserve
M	Natural mortality
MLS	Minimum Legal Size
MPA	Marine Protected Area
MPSA	Monitor, Pause, Survey and Assess (Benthic Management framework)
MPI	Ministry for Primary Industries (representing the Crown and its statutory obligations to the public). Formerly the Ministry of Agriculture and Forestry and before that the Ministry of Fisheries.
MPD	Maximum Posterior Density
MSE	Management Strategy Evaluation
MSY	Maximum Sustainable Yield
MTRP	Medium Term Research Plan (Deepwater Fisheries
NGO	Non-Governmental Organisation
NWCR	North West Chatham Rise
NZ	New Zealand
PST	Population Sustainability Threshold
QMA	Quota Management Area
QMS	Quota Management System
RCP	Regions of Common Profile
RF	Random Forest
SA	Sub-Antarctic
SCA	Seamount Closure Area
SNZ	Seafood Nz
SEFRA	Spatially Explicit Fisheries Risk Assessment
SMART	Seafloor Monitoring, Automated Recording of Trawls
SPRFMO	South Pacific Regional Fisheries Management Organisation
TAC	Total Allowable Catch
TACC	Total Allowable Commercial Catch
TCEPR	Trawl Catch Effort and Processing Returns
TCER	Trawl Catch Effort Returns
TOKM	Te Ohu Kai Moana
UoA	Unit of Assessment (see MSC-MSCI Vocabulary for MSC defined terms)
UoC	Unit of Certification
UNCLOS	United Nations Convention on the Law of the Sea
UTF	Underwater Topographic Features (including hills, knolls, and seamounts)
VADE	Voluntary, Assisted, Directed and Enforced Compliance operating model
VME	Vulnerable Marine Environment
VMP	Vessel Management Plan
VMS	Vessel Monitoring System
WCPFC	Western & Central Pacific Fisheries Commission
WCSI	West Coast South Island

3. Executive summary

This report provides details of the MSC reassessment of the New Zealand Southern blue whiting trawl fishery that operates in the NZ EEZ. This report is one of three reports for the combined reassessment of NZ hoki, hake and ling trawl, southern blue whiting trawl and ling longline.

The UoAs for southern blue whiting are

Fishing Method	Species	Management Areas	Stock	UoA
Trawl	Southern blue whiting (*Micromesistius australis*)	SBW 6B	Bounty Platform	11
		SBW 6I	Campbell Rise	12

These fisheries were previously recertified in 2012, with one condition, subsequently closed at surveillance. In 2018 it was reassessed (with no conditions) at the same time as the New Zealand hoki, hake, ling trawl and ling longline. The fisheries were combined to make cost and time efficiencies and because the management and governance regimes are the same.

In this Public Certification Report (PCR), the NZ southern blue whiting trawl fisheries are reassessed against the MSC Fisheries Standard v 3.1. with a modified assessment tree to score shark finning under FS v2.01- SI 2,1,2d, instead of FS v3.1- SI 2.1.2d and SI 2.2.2.

The information in this PCR is a combination of information gathered and updated as part of the process of compiling the Announcement Comment Draft Report (ACDR) and preparing for the 5th annual surveillance audit for the current certification cycle. Also, most importantly new information obtained during the site visit.

Stakeholders were encouraged to review the ACDR and to provide information to the assessment team and raise any concerns with the indicative scoring. The draft scoring ranges in the ACDR were based on a review of information and documents submitted by the fishery client.

Following this, this report has been through peer and client review. The assessment team have reviewed all comments and revised scores appropriately.

The PCDR gave stakeholders a further chance to review the report and scoring. This Final Draft Report is the final presentation of our certification decision and scores.

Stakeholders had the opportunity to submit an objection to our Certification Decision presented in the Final Draft Report by following the MSC Objections Process. An objection was not received.

Therefore, LRQA confirms this fishery meets the MSC requirements and hereafter is certified, subject to successful outcomes of annual surveillance audits.

The **Eligibility Date** for this assessment is the recertification date, 6th February 2026

The assessment team for this fishery assessment comprised of Jo Akroyd who acted as team leader and primary Principle 3 specialist; Andre Punt who was primarily responsible for evaluation of Principle 1 and Stewart Norman who was primarily responsible for evaluation of Principle 2.

Summary of Strengths and Weaknesses

Principle 1 strengths

- Assessments of SBW 6I are conducted regularly using a stock assessment method (CASAL / Casal 2) that is capable of using all of the types of data available for assessment purposes and producing the types of outputs needed to evaluate stock status relative to target and limit reference points in a probabilistic manner.

- Surveys are conducted regularly for all stocks and generally have good coverage. Age-composition data are available for surveys and most major fishery components.
- Assessments for SBW 6I regularly explore the assumptions underlying the models used to provide management advice. These include reviews of stock structure, biological parameters and fishery specifications.
- The scientific basis for the catch limits for SBW 6B is based on the results of a Management Strategy Evaluation that has been revised in response to the need to account for the difficulty in obtaining biomass estimates for this stock.

Principle 2 strengths

- Observer coverage in the SBW 6B and SBW 6I fisheries over the last five years has averaged 95.4%
- Negligible levels of mortality of in-scope and ETP/OOS species with the southern blue whiting trawl fishery UoAs
- Limited contact of midwater trawl fishing gear with benthos and stringent management measures to monitor this.

Principle 3 strengths

- Management of the southern blue whiting trawl fisheries continued the strong management regime described in the previous full assessment. Improvements since the previous assessment include implementation of digital monitoring, which provides Ministry for Primary Industries (MPI) with daily access to data, greater opportunity to target compliance risk, and therefore further reduces the potential for unreported catch and area misreporting

Principle 1 weaknesses

- There is currently no agreed model-based stock assessment for SBW 6B, although the information available is sufficient to assess status relative to reference points.

Principle 2 weaknesses

- Limited up to date knowledge of the midwater ecosystem and impacts of the UoAs on key ecosystem elements

Principle 3 weaknesses

- The southern blue whiting chapter of the National Fisheries Plan is outdated. However, there is evidence that this is being addressed.
- An updated external review of the fishery specific management system has not been completed but there is progress underway on this.

Determination

Following this assessment team's work, and review by stakeholders and peer-reviewers, and no objection, the determination is that this fishery has passed its assessment and should be certified. This has been confirmed by LRQA's decision making entity.

For interested readers, the report also provides background to the target species and fishery covered by the assessment, the wider impacts of the fishery and the management regime, supported by full details of the assessment team, a full list of references used and details of the stakeholder consultation process.

LRQA confirms that this fishery is within scope.

4. Report details

4.1. Authorship and peer review details

Peer reviewer information to be completed at Public Comment Draft Report stage

Table 1: Authorship and assessment team

Role	Name	Area of expertise
Team leader	Jo Akroyd	Principle 3
Team members *(Insert and delete rows as appropriate)*	André Punt	Principle 1
	Stewart Norman	Principle 2

Table 2: Peer reviewers

Peer reviewers	Chris Grieve
	Peter Trott

4.2. Version details

The report shall include a statement on the versions of the fisheries program documents used for this assessment.

Table 3: Fisheries program documents versions

Document/Assessment Tree	Version number/Type
MSC Fisheries Certification Process	Version 3.1
MSC Fisheries Standard	Version 3.1, aspects of version 2.01 of the MSC standard have been used as a result of an accepted variation request.
Assessment tree	Modified to score shark finning using FS v2.01 - SI 2.1.2.d, instead of FS v3.1 - SI 2.1.2d and SI 2.2.2d.
MSC General Certification Requirements	Version 2.7
MSC Reporting Template	Version 2.1

5. Unit(s) of Assessment and Unit(s) of Certification

5.1. Unit(s) of Assessment

Table 4: Unit(s) of Assessment (UoA)

UoA 11	Description
Species	Southern blue whiting *(Micromesistius australis)*
Target Stock	SBW 6B (UoA 11)
Geographical area	Bounty Platform (UoA 11)
Fishing gear type(s) and, if relevant, vessel type(s)	Demersal and Semi Pelagic Trawl

Client group	NZ Seafood, Deep Water Council (DWC)
Other eligible fishers	New Zealand flagged vessels, licensed to fish for southern blue whiting with demersal and semi demersal pelagic trawl, in management areas SBW 6B and SBW 6I and with access to quota for these species.
UoA 12	**Description**
Species	Southern blue whiting *(Micromesistius australis)*
Target Stock	SBW 6I (UoA 12)
Geographical area	Campbell Rise (UoA 12)
Fishing gear type(s) and, if relevant, vessel type(s)	Demersal and Semi Pelagic Trawl
Client group	NZ Seafood, Deep Water Council (DWC)
Other eligible fishers	New Zealand flagged vessels, licensed to fish for southern blue whiting with demersal and semi demersal pelagic trawl, in management areas SBW 6B and SBW 6I and with access to quota for these species.

5.2. Unit(s) of Certification

Table 5: Unit(s) of Certification (UoC)

UoC 11	**Description**
Species	Southern blue whiting *(Micromesistius australis)*
Target Stock	SBW 6B (UoA 11)
Geographical area	Bounty Platform (UoA 11)
Fishing gear type(s) and, if relevant, vessel type(s)	Demersal and Semi Pelagic Trawl
Client group	NZ Seafood, Deep Water Council (DWC)
Other eligible fishers	New Zealand flagged vessels, licensed to fish for southern blue whiting with demersal and semi demersal pelagic trawl, in management areas SBW 6B and SBW 6I and with access to quota for these species.
UoC 12	**Description**
Species	Southern blue whiting *(Micromesistius australis)*
Target Stock	SBW 6I (UoA 12)
Geographical area	Campbell Rise (UoA 12)
Fishing gear type(s) and, if relevant, vessel type(s)	Demersal and Semi Pelagic Trawl
Client group	NZ Seafood, Deep Water Council (DWC)
Other eligible fishers	New Zealand flagged vessels, licensed to fish for southern blue whiting with demersal and semi demersal pelagic trawl, in management areas SBW 6B and SBW 6I and with access to quota for these species.

6. Confirmation of scope

LRQA confirms that the UoAs under assessment are in scope and meets the requirements of the MSC Fisheries Standard Section 1.

- The target species are not amphibians, reptiles, birds or mammals (MSC Fisheries Standard v 3.1,1.1.1)
- The UoAs do not use poisons or explosives (MSC Fisheries standard v3.1, 1.1.2)
- The UoAs are not enhanced fisheries (MSC Fisheries Standard v3.1, 1.1.3)
- The fisheries are not an introduced species-based fishery (MSC Fisheries Standard v3.1, 1.1.4)
- None of the client group vessels have been implicated in the conviction of a serious crime for an offence listed in MSC Fisheries Standard v3.1, Table 3 List of offences, while undertaking fishing operations in the last two year
- The client or client group does not include any vessel that has been implicated in a conviction for a shark-finning violation in the last two years (MSC Fisheries Standard v3.1, 1.1.6)
- LRQA confirms that the client group has submitted the completed MSC At Sea Labour Eligibility Requirements Reporting Template.

7. Overview of the fishery

Vessels over 28 m, including southern blue whiting vessels included in this assessment, have been required by law to be part of the Vessel Monitoring System (VMS) which, through satellite telemetry, enables Fisheries New Zealand (FNZ) to always monitor southern blue whiting vessel locations. Paper based catch reporting was also required by all fishing vessels operating in NZ's EEZ. These systems have now been replaced by near real time Geospatial Position Reporting and daily Electronic Catch Reporting. FNZ still combines this functionality with at-sea and aerial surveillance, supported by the New Zealand Defence Force. This independently provides surveillance of activities of deep-water vessels through inspection and visual capability to ensure these vessels are fully monitored and verified to ensure compliance both with regulations and with industry-agreed Operational Procedures.

7.1 Client Group

Deepwater Group Limited (DWG) http://deepwatergroup.org - Formed in September 2005, this non-profit organisation is an amalgamation of EEZ fisheries quota owners in New Zealand. Species targeted by DWG are usually fished at depths between 200 and 1,200 m within the New Zealand Exclusive Economic Zone (EEZ). These include hoki, hake, ling, southern blue whiting, orange roughy, oreo dory, squid and jack mackerel. The client group catches about 95% of the southern blue whiting recorded catch.

Other eligible fishers are those operators who have been fully assessed against the MSC's Principles and Criteria for Sustainable Fishing as part of the UoCs and are not currently part of the client group but may become eligible to join the client group under a certificate sharing arrangement. The client group has stated their willingness to enter into certificate sharing arrangements.

7.2 Fishing Method and Vessels

Catches of southern blue whiting are taken mostly by semi-pelagic trawls. The trawl vessels deploy high aspect ratio multipurpose doors, which allow bottom or mid-water operation. Vessels predominantly use electronic net-monitoring systems, which capture data on the headline height, the distance between the ground rope and the seabed, and water temperature, and transmit this data in real-time through an acoustic link to the vessel's bridge to assist with the

deployment in the water column. Some of the fleet use net monitoring equipment to measure door spread and catch sensors to assess the amount of catch in the cod end. “Third wire” systems, i.e. where a cable is hard wired to a trawl sonar attached to the net head rope to allow monitoring of the nest position and catch entering the net, are not permitted in New Zealand waters in order to prevent seabird mortalities - seabirds attracted to fishing vessels may either strike the hard-to-see cable while in flight, or get caught and tangled in the cable while they sit on the water due to the forward motion of the vessel.

The midwater trawls come in a wide range of sizes measured by either headline length or headline opening (opening from 25 - 75m) and can be used in pelagic or semi-pelagic mode. All are constructed of synthetic materials with “rope” construction in the fore-panels mesh in the body and with floats on the headline to open the net. Mesh sizes range from 65 mm to a prescribed minimum mesh size of 60 mm in the cod end.

The fleet characteristics are summarized in Table 6.

Table 6 Table showing the fleet characterisation for the southern blue whiting fishery (Source: DWG)

	>43m	
Year	**Limited processing**	**Surimi**
2011/12	12 (11)	1
2012/13	9 (8)	1
2013/14	11 (9)	1
2014/15	9 (9)	1
2015/16	7 (6)	1
2016/17	8	1
2017/18	9	1
2018/19	11	1
2019/20	11	1
2020/21	11	1
2021/22	11	1
2022/23	11	1
2023/24	9	1

7.3 Operation of the fishery

Figure 1 shows maps of the location of the stocks and fisheries.

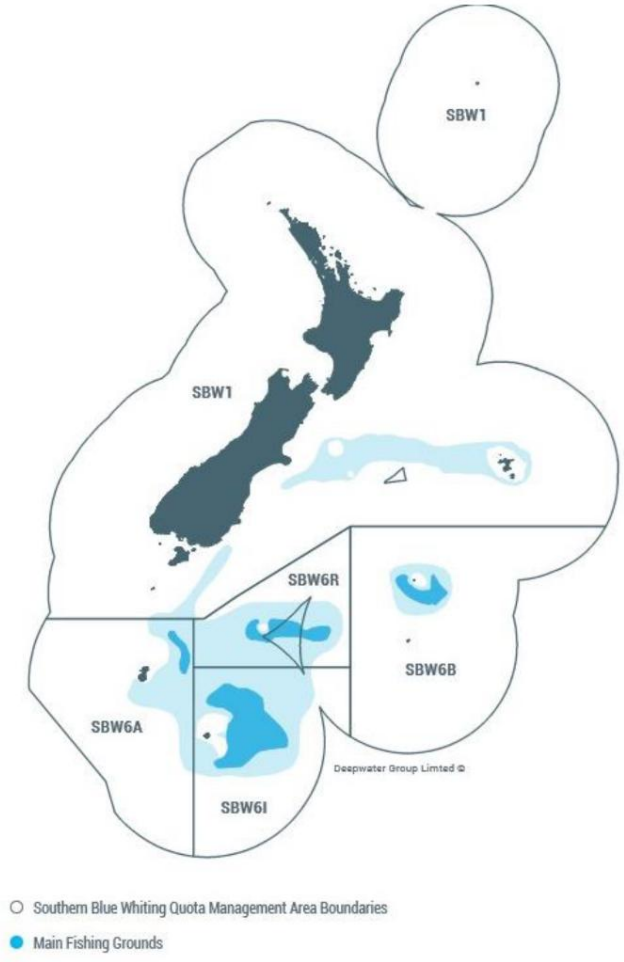


Figure 1 **The management units for southern blue whiting. The outer boundary represents the New Zealand 200 mile EEZ.**

7.4 Monitoring of the fishery

The SBW fishery management system has documented a comprehensive and effective monitoring, control and surveillance system through:

1. compulsory use of satellite-based Vessel Monitoring System (VMS) with an onboard automatic location communicator (ALC);

2. government observers who may be placed on board to observe fishing, transhipment and transportation to collect any information on SBW fisheries resources. This includes information to monitor the effects of SBW fishing on the aquatic environment; and,

3. accurate recordkeeping and recording requirements to establish auditable and traceable records to ensure all catches are counted and do not exceed the ACE held by each operator.

Deepwater and middle-depth fisheries are those generally between 12 nautical miles and 200 nautical miles offshore. Fisheries are categorised into three tiers:

- Tier 1 – high volume, high value quota management system stocks that commercial fishers usually target;
- Tier 2 –quota management system stocks that are smaller or less valuable bycatch fisheries, or are only targeted at certain times of the year; and
- Tier 3 – bycatch species that are not managed through the quota management system.

The hoki, hake and ling trawl fishery, considered one combined trawl fishery, the southern blue whiting trawl fishery and the ling bottom longline fishery all fall under Tier 1.

The management of the majority of New Zealand's deepwater fisheries takes an evidence-based approach, supported by a robust and comprehensive monitoring and research programme. Information and data come from a variety of sources including independent Fisheries New Zealand Observer data, industry reporting, contracted fisheries independent research surveys, and contracted projects (FNZ, 2024). Research needs to inform management of New Zealand's deepwater fisheries are reflected in the medium term research plan (MTRP). The MTRP is a living document, updated regularly to reflect changes in management priorities where these occur, and identification of new information requirements. The MTRP should be read alongside the National Fisheries Plan for Deepwater and Middle depth fisheries (FNZ (2019), National Deepwater Plan). Annual research plans are consulted with stakeholders through the Deepwater Fish Plan Advisory Group and reported in the Annual Operational Plans and Annual Review Reports for deepwater fisheries.

The basic information for each species (see Section 10.1.1.4) needed when conducting stock assessments relates to information on stock structure, biological parameters such as natural mortality, length as function of age, weight as a function of age, and fecundity as a function of age. The species descriptions (see Section 10.1.1.1) refer to whether these parameters depend on sex and for natural mortality whether there is evidence for age or length dependence. The stock assessment for hoki involves specifications related to how movement occurs. The stock assessment may pre-specify the values for these parameters based on monitoring data or estimate them as part of the model-fitting process. In addition, the stock assessment may examine the evidence for changes over time in some of the biological parameters such as length and weight as functions of age.

7.4.1 At sea scientific observers

Fisheries New Zealand plans at-sea observer coverage based on biological sampling targets for stock monitoring (e.g. length frequencies (LF) and otolith samples) and percentage coverage targets for the estimation of protected species interactions. Observer coverage is planned and delivered based on the number of 'observer days' required for each fishery on a financial year basis. Fisheries New Zaland and the Department of Conservation work together each year to develop a sea days plan (Fisheries observer services | NZ Government (mpi.govt.nz)). See Section 9.3.2 in the Annual Operational Plan for deepwater fisheries.

The number of observer days necessary to achieve biological sampling requirements are calculated using the following information from the most recent fishing year:

- the total number of target tows in each area.
- the number of observed target tows in each area
- the number of samples collected by observers for each species/area combination; and
- the number of sea days delivered for each area.

It is challenging to plan required observer coverage in advance because of the variability in fishing effort over the range of fisheries each year, and delivery can be affected by fishing activities during a year (e.g. if there is no fishing in a particular fishery, it will appear that coverage in terms of observed tows and length/age samples did not meet the target).

The National Institute of Water and Atmospheric Research (NIWA) currently carries out the role of Data Manager and Custodian for the fisheries research data owned by the Ministry for Primary Industries (MPI) formerly the Ministry of Fisheries. The Scientific Observer Programme (SOP) was created in 1986 to send observers, contracted to the then MAF Fisheries, to monitor the catches of commercial trawlers. Since then observer duties have extended to a number of fisheries and collecting observations for a range of data sets. The Scientific Observer Programme was later renamed to the Observer Programme, and in late 2004 re-branded as 'Observer Services'. The Centralized Observer Database (COD) is dedicated to information collected by these Ministry Observers (Sanders and Fisher, 2023).

The COD database contains the catch and effort information for observed commercial fishing vessels, ageing materials, length frequency and biological data for commercial species as measured by the observers, as well as relevant trip and tow information. Observers on each vessel are responsible for completing their Observer Catch Effort forms typically contained in a logbook. Each logbook documents details for every trawl shot, line set or other fishing effort by the vessel such as position, time, total catch; the composition and weight of each catch; and the details of all fish processing carried out on board the vessel. In 1990, the format of the trawl logbooks changed slightly, and was revised again in 2007 as version 3.

Since 2007 when version 3 of the trawl catch effort logbook was introduced, NIWA has received zip files from MFish, and subsequently MPI containing the observer trawl catch effort logbook data, which is loaded into the load tables of cod. The cod database is the major source of length frequency data from commercial fishing operations, and so plays a major role in the stock assessment process. Currently the cod database holds information for over 100 species, with the major species including hoki, southern blue whiting, orange roughy, scampi, oreos, ling, jack mackerels, hake, barracouta, and silver warehou.

Access to this database and data are restricted to specific Nominated Personnel as specified in the current Data Management contract between the Ministry for Primary Industries and NIWA.

Observer coverage statistics are available from multiple platforms including the Annual Operational Plans for each sector, the Aquatic Environment and Biodiversity Annual Review (AEBAR), the protected species captures summary website, and various scientific research works presenting mathematical analyses and extrapolations of mortality for each fishing sector based off observer records. Ultimately though all data are held by the Ministry for Primary Industries (MPI) and subsequent reports summarise those datasets. Each of the aforementioned platforms publish at different intervals and aggregate the various components of the fisheries differently (e.g. by area, gear type, taxon or taxon groups). The MPI publishes annual planned observer sea days and days achieved for the financial year period 01 July to 30 June each year, with the most recent full 12 month period being the 2023/24 period up until 30 June 2024 (58306-2022-2023-observer-seadays (mpi.govt.nz)).

7.4.2 Land-based catch sampling

For most deepwater fisheries, at-sea observers provide adequate sampling to support stock assessments. However, for some fisheries, getting sufficient observer coverage to collect representative samples can be challenging. Where fish are not fully processed at sea, research providers can be contracted to visit the landing sites and collect the required samples at that point.

Results from the sampling of commercial catches is a key input to several stock assessments. For these stocks, sufficient, representative samples of the length and/or age of the commercial catch must be available for the stock assessments to accurately estimate stock status.

7.4.3 Surveys

The research required to manage deepwater fisheries is detailed in the Medium-Term Research Plan for Deepwater Fisheries. Some research is contracted on an annual basis, while other research, such as trawl surveys, are contracted via multi-year contracts. Surveys provide important fishery-independent information for monitoring several deepwater fish stocks. Table 7 lists the surveys planned for 2024/25 to 2027/28.

Table 7. Future survey schedules (Source:FNZhttps://www.mpi.govt.nz/dmsdocument/21746-medium-term-research-plan-for-deepwater-fisheries-report).

	2024/25	2025/26	2026/27	2027/28
Wide-area trawl surveys				
Chatham Rise		Jan 2026		Jan 2028
Sub-Antarctic	Dec 2024		Dec 2026	
WCSI	June/July 2024		June/July 2027	
Acoustic survey				
HOK1 1 (Cook Strait/Pegasus Canyon/Conway Canyon)	July/Aug 2025		July/Aug 2027	
SBW 6B	Aug 2025	Aug 2025	Aug 2026	Aug 2027
SBW 6I	Sep 2025			Sep 2028

7.4.3.1 Trawl surveys

Wide-area trawl surveys collect biological information and provide abundance indices for a wide range of species. There are three deepwater and middle-depth wide-area trawl surveys that cover the three main deepwater fishing grounds: Chatham Rise, Sub-Antarctic, and the West Coast of the South Island (WCSI). The surveys are optimised to provide information on relevant Tier 1 middle-depth fish stocks, but also provide valuable information on a range of Tier 2 and non-QMS species, including data that informs risk assessments for sharks, and important ecosystem data (e.g. sea temperature, stomach sampling) in these key fishery areas.

The Chatham Rise wide-area trawl survey is carried out in January every other year. The survey series provides biomass trend and distribution information on 142 species, which are included as data inputs to stock assessments for several species, including southern blue whiting, hoki, hake and ling.

The Sub-Antarctic trawl survey is carried out in December every other year in the alternate financial year to the Chatham Rise trawl survey. The Sub-Antarctic trawl survey provides information on 134 species and data inputs to stock assessments for several Tier 1 species, including southern blue whiting, hoki, hake and ling.

The last West Coast South Island (WCSI) wide-area trawl survey was completed in 2021 and is scheduled for completion in June/July every third year thereafter. The WCSI trawl survey was initially developed and designed as an acoustic survey focused on indexing spawning hoki abundance on the WCSI each winter. The survey methodology was amended in 2016 to focus on hake and ling rather than hoki following a review of the hoki model which concluded that the west coast acoustic index was not significantly influential in the model. The importance of the trawl survey to other species, including hake and ling, is the key reason the survey has continued.

7.4.3.2 Acoustic surveys

Acoustic surveys at regular cycles are employed to monitor hoki in the Cook Strait, and southern blue whiting during their respective spawning periods. In 2019, the survey of the hoki eastern spawning stock was expanded to include the Pegasus Canyon and Conway Trough spawning areas on the east coast of the South Island. This extension to the survey has continued in 2021 and after. The Cook Strait and Pegasus hoki acoustic survey is scheduled to be completed every two years.

Southern blue whiting mainly occurs in the Sub-Antarctic waters of New Zealand, with the largest stock found around Campbell Island (SBW 6I). A smaller stock is found around Bounty Island (SBW 6B). Southern blue whiting exhibit highly variable year-class strength and are characterised by episodic recruitment events. Stocks are therefore surveyed regularly, with a HCR for SBW 6B applied regular both to allow for utilisation of significant recruitment events, but also to respond when large year-classes leave the fishery or fish abundance declines suddenly. Surveys are planned for SBW 6B (annually) and SBW 6I (every third year). Timing, weather, and operational factors can mean that no usable biomass estimate is generated – as was the case for the SBW 6B stock in 2018, 2019, 2020 and 2021. Should the survey continue to be unsuccessful, consideration will be given to other monitoring approaches.

7.4.4 Digital monitoring

The current digital monitoring framework for the deepwater fleet comprises:

- ER - electronic reporting of catch, effort, protected species captures, and landing information; and
- GPR - electronic position reporting.

Currently in development is the Deepwater Info Portal, a digital system developed by the Deepwater Council (DWC) and Dragonfly Data Science for vessels to access protected species information and other documents, to:

- provide more relevant and easy-to-access information based on the fishery;
- replace paper-based systems with digital ones to save costs and avoid version issues; and
- enhance connectivity and communication between DWC and vessel.

The InfoPortal will help skippers, crew and vessel managers to maintain good environmental performance and improve efficiency. The InfoPortal has been tested on some vessels and will be rolled out to the deepwater trawl fleet once the next steps for the system have been planned in 2023/24.

7.4.5 Stock assessments

Stock assessments have been accepted to guide management for around 70% of Tier 1 (including hoki, hake, ling and southern blue whiting) deepwater fisheries (by both volume and value). Annual Fisheries Assessment Plenary reports, organised by fish stock, provide summaries of the available fisheries and scientific information and are in turn supported by 70–100 more detailed reports published on-line each year, with a cumulative total of almost 2000 such supporting, detailed documents. The plenary reports summarise fisheries, biological, environmental, stock assessment and stock status information for 83 of New Zealand's commercial fish species or species groups in a series of Science Working Group (SWG) or Plenary reports.

Each species or species group is split into 1–10 stocks for management purposes. However, the boundaries of biological stocks often differ from the management boundaries. In general, biological stocks tend to occur at smaller scales than management boundaries, although in a few instances the reverse is true. Most stock assessments are conducted at biologically meaningful scales.

Science Working Group (SWG) and Plenary meetings have continued the effort to populate the Status of the Stocks summary tables, which are used to provide comprehensive summary information about current stock status and the prognosis for these stocks, to evaluate fisheries performance relative to the 2008 Harvest Strategy Standard for New Zealand Fisheries and other management measures, and to rank the quality of stock assessment inputs and outputs based on the 2011 Research and Science Information Standard for New Zealand Fisheries. Even when complete information is not available, it is sometimes possible to at least make scientifically sound statements about recent trends in stock size and fishing intensity levels.

Over time, continual improvements have been made in data acquisition, stock assessment techniques and the development of reference points to guide fisheries management decisions. SWG and Plenary meetings have continued the effort to populate the Status of the Stocks summary tables, which are used to provide summary information about current stock status and the prognosis for these stocks, to evaluate fisheries performance relative to the 2008 Harvest Strategy Standard for New Zealand Fisheries and other management measures, and to rank the quality of stock assessment inputs and outputs based on the 2011 Research and Science Information Standard for New Zealand Fisheries. Even when complete information is not available, it is sometimes possible to at least make scientifically sound statements about recent trends in stock size and fishing intensity levels.

The Plenary reports take into account the most recent data and analyses available to SWGs and Fisheries Assessment Plenary meetings, and also incorporate relevant analyses undertaken in previous years. Due to time and resource constraints, recent data for some stocks may not yet have been fully analysed by the SWGs or the Plenary. Table 8 lists the schedule for assessments of various hoki, hake, ling and southern blue whiting stocks.

Table 8. Summary of the recent and planned assessments of the stocks.

	Before	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29
HOK 1		Yes	Yes	Yes	Planned	Planned	Planned	Planned	Planned
HAK 1	2020/21				Planned			Planned	
HAK 4	2020/21								
HAK 7				Yes			Planned		
LIN 3&4		Yes			Planned			Planned	
LIN 5&6				Yes[1]			Planned		
LIN 7WC			Yes			Planned			Planned
SBW 6B				HCR[2]	HCR[2]	HCR[2]	HCR[2]	HCR[2]	HCR[2]
SBW 6I			Yes			Planned			Planned

1: First assessment to include LIN 6B; 2: Application of the HCR

The information needed to assess stock status relative to the limit and target reference points (ling, hake, and southern blue whiting) or the management target range (hoki), and to conduct projections are an estimate of recent abundance, $B_{current}$, an estimate of the unfished biomass B_0, and estimates of recruitment. This information is obtained from quantitative stock assessments based on fitting population dynamics models to monitoring data. The stock assessment process is open to anyone who elects to participate. The process is managed by Fisheries New Zealand and supported by quota owners through DWG.

The review of stock assessments has been conducted primarily though meetings of the MPI Deepwater Fisheries Assessment Working Group, which consists of scientists from NIWA, MPI, representatives of environmental NGOs, and industry (FNZ, 2024b).

The objectives of the FNZ Assessment Working Groups (SWGs) are to:

1. review new research information on stock structure, productivity, abundance and related topics for each fish stock/issue under the purview of individual Stock Assessment Working Groups.
2. where possible, derive appropriate MSY-compatible reference points for use as reference points for determining stock status, based on the Harvest Strategy Standard for New Zealand Fisheries.
3. conduct stock assessments or evaluations for selected fish stocks in order to determine the status of the stocks relative to MSY-compatible reference points and associated limits, based on the "Guide to Biological Reference Points for Fisheries Assessment Meetings", the Harvest Strategy Standard, and relevant management reference points and performance measures set by fisheries managers;
4. for stocks where the status is unknown, use existing data and analyses to draw logical conclusions about likely future trends in biomass levels and/or fishing mortality (or exploitation) rates if current catches and/or TACs/TACCs are maintained, or if fishers or fisheries managers are considering modifying them in other ways;
5. where appropriate and practical, conduct projections of likely future stock status using alternative fishing mortality (or exploitation) rates, or catches, or other relevant management actions, based on the Harvest Strategy Standard and input from the Stock Assessment Working Group and fisheries managers;
6. for stocks that are deemed to be depleted or collapsed, develop alternative rebuilding scenarios based on the Harvest Strategy Standard and input from the Stock Assessment Working Group and fisheries managers; and
7. for fish stocks for which new stock assessments or analyses are not conducted in the current year, review the existing Fisheries Assessment Plenary report text on the “Status of the Stocks” in order to determine whether the latest reported stock status summary is still relevant; else to revise the evaluations of stock status based on new data or analyses, or other relevant information.

The SWG process includes protocols for member and participation (FNZ, 2024b). The reports of Stock Assessment Working Groups are available through annual summaries, with the results of detailed analyses reported in Fishery Assessment Reports (FARs). The assessment process for hoki, hake, ling and southern blue whiting is conducted through the Deepwater Working Group. Participation in the SWGs is restricted to members of the Stock Assessment Working Groups, which consist of NIWA scientists, representative of Fisheries New Zealand, and consultant scientists. industry and members of conservation NGOs. The possibility of external review of the stocks exist, and an external international review of hoki was conducted in 2017 by external reviewers from Australia, the USA, and South Africa. The NZ Plenary also include independent reviewers for some assessment (e.g. Alistair Dunn and Jim Roberts – hoki; Jim Roberts and Kevin Sullivan – ling).

The New Zealand stock assessment plenary identifies research tasks during its review of the stock assessments (the FNZ medium term research plan for deepwater fisheries also outlines potential research projects that involve methodological development). This section repeats some of the key research tasks identified by the plenary during 2024.

- Determine how to best represent mean weights-at-age in the projections for SBW 6I given the negative relationship between year-class strength and growth.
- Update the HCR for the Bounty Plateau stock to account for catch being above or below the TACC. Explicit allowance within the HCR for a minimum catch for surveys should also be evaluated; this would require a revised simulation approach because risk is currently estimated without reference to absolute catch levels.

Target stocks (SBW)

Section 10.1.1 of this report provides species summaries for the target stocks and section provides a summary of the assessments by UoA.

Tier 2 stocks

Tier 2 species and stocks are typically less valuable bycatch fisheries or are only target fisheries at certain times of the year. Because of the nature of these fisheries, Tier 2 fisheries are often data limited making full stock assessments problematic. The abundance of Tier 2 stocks may be monitored using a number of approaches including stock assessment, CPUE indices, age and/or size structure, and trawl survey indices. Reviews of stock status for Tier 2 stocks are primarily undertaken based either on significant changes in catch volume (e.g. decrease in bycatch in another target fishery suggesting a potential sustainability issue or an increase suggesting an increase in abundance), or when specific concerns are raised by stakeholders. In addition, trends in the bycatch of Tier 2 (and non-QMS) species and stocks will continue to be monitored through bycatch reports prepared through the Aquatic Environment research stream, and the three wide area multi-species trawl surveys.

7.4.6 Aquatic Environment specific to Deepwater

Under the Fisheries Act 1996, significant adverse impacts on the aquatic environment should be avoided, remedied, or mitigated. In addition, the biological diversity of the aquatic environment must be maintained. Drivers of research in this area also include the National Plan of Action (NPOA)-Seabirds, NPOA-Sharks, Threat Management Plan (TMP) for New Zealand Sea Lions and TMP for Hector's and Maui Dolphins.

Projects to monitor impacts of fisheries on the aquatic environment are planned and contracted through the Aquatic Environment research planning process. Fisheries New Zealand is currently developing a multi-year research plan for Aquatic Environment Research which will be incorporated to the MTRP when completed.

Some information is available to assess the nature and extent of any adverse effects on the marine environment on a case by case basis, and data to support the estimation of effects from fishing is limited to areas with high observer coverage and those issues with a high public profile. Over the past few years, stock-specific plenary reports have included sections on environmental and ecosystem considerations that have been developed for some species by the SWGs that oversee aquatic environment and biodiversity issues associated with New Zealand fisheries and the ocean environment in which they reside. Chapter sections on how ocean warming, ocean acidification and other ecosystem trends affect, for example, productivity and fish distributions will be incorporated as new information becomes available (see species summaries in Section 10.1.1).

Data and information collection is prioritised to reduce uncertainty in formal, quantitative risk assessments for protected species, and to provide information on issues where there is public interest in of risks from fishing to the aquatic environment. Implementation of a risk-based approach has enabled prioritisation of areas on which to focus mitigation or data collection efforts.

The Aquatic environment and biodiversity annual review (AEBAR, 2021) last updated in 2021, with Chapter 10 chondrichthyans updated 2024, primarily addresses interactions between the seafood sector, biodiversity, and the aquatic environment. The AEBAR is supported by more detailed reports and science papers published on-line each year. The information contained within the AEBAR informs decision-making in Fisheries New Zealand. The AEBAR is organised by topic (e.g., protected species, bycatch, benthic impacts, etc.), and almost all topics involve more than one fish stock or fishery.

Fisheries New Zealand Science Working Groups contribute substantially to the AEBAR. These are primarily the Aquatic Environment Working Group (AEWG), the Antarctic Working Group (ANTWG), and the Biodiversity Research Advisory Group (BRAG). Over time, relationships with industry, recreational, and environmental interests have been developed through the working groups and it has become expedient to finalise AEBAR chapters through the Science Working

Group processes. The AEBAR 2021 was led by the Science Group within the Directorate of Fisheries Science and Information in Fisheries New Zealand.

Research and science standards and the terms of reference for each working group have been developed to ensure a high quality and consistent peer review process. A wide variety of relevant, peer-reviewed research that has not been contracted through Fisheries New Zealand is summarised in the AEBAR. This work is included only when it meets the Fisheries New Zealand Research and Science Information Standard.

8 Assessment results overview

8.1 Determination

Following this assessment team's work, and review by stakeholders and peer-reviewers, and no objection, the determination is that this fishery has passed its assessment and should be certified. This has been confirmed by LRQA's decision making entity.

8.2 Principle level scores

Table 9: Principle level scores

Principle	UoA 11	UoA 12
Principle 1: Target species	84.2	94.2
Principle 2: Ecosystem impacts	94.6	94.6
Principle 3: Management system	96.3	96.3

8.3 Summary of Performance Indicator level scores

Table 10 Fishery Assessment Scoring worksheet

Principle	Component	Performance Indicator (PI)		UoA 11	UoA 12
One	Outcome	1.1.1	Stock status	80	100
	Management	1.2.1	Harvest strategy	95	95
		1.2.2	Harvest control rules & tools	75	95
		1.2.3	Information & monitoring	85	85
		1.2.4	Assessment of stock status	90	90
Two	In-Scope species	2.1.1	Outcome	100	100
		2.1.2	Management strategy	90	90
		2.1.3	Information/Monitoring	100	100
	ETP/Out of Scope Species	2.2.1	Outcome	100	100
		2.2.2	Management strategy	100	100
		2.2.3	Information/Monitoring	100	100
	Habitats	2.3.1	Outcome	100	100
		2.3.2	Management strategy	95	95
		2.3.3	Information strategy	100	100
	Ecosystem	2.4.1	Outcome	80	80
		2.4.2	Management strategy	80	80
		2.4.3	Information	90	90
Three		3.1.1	Legal &/or customary framework	100	100

	Governance and policy	3.1.2	Consultation, roles & responsibilities	100	100
		3.1.3	Long term objectives	100	100
	Fishery specific management system	3.2.1	Fishery specific objectives	90	90
		3.2.2	Decision making processes	90	90
		3.2.3	Compliance & enforcement	100	100
		3.2.4	Monitoring & management performance evaluation	90	90

The MSC Fisheries Standard Toolbox was used in the reassessment.

Evidence requirements framework was applied to
P1 1.2.1 SI (e).
P2 2.1.3 SI (a) 2.1.3 SI (b) 2.2.3 SI (a) 2.3.2 SI (c) 2.3.3 SI (b)
P3 3.2.3 SI (c)

8.4 Summary of conditions

Table 11:Summary of conditions

Condition number	Condition	PI	Deadline	Exceptional circum-stances?	Carried over from previous certificate?	Related to previous condition?
1	A. By the second surveillance audit, the client should provide evidence that the existing HCR for SBW 6B has been modified so that the exploitation rate corresponding to the TACC is reduced as the PRI (e.g. New Zealand soft limit) is approached, and that the stock would be expected to be fluctuating around a target level consistent with (or above) MSY. B. At each of the third and fourth surveillance audits, the client should provide evidence that the harvest control rule is	1.2.2	2029	**No**	**No**	**NA**

	place and that catches are less than the outcomes of the harvest control rule.					

8.4.1 Recommendations

To be drafted at Client and Peer Review Draft Report stage

Recommendation (#)1. Progress on the update to the fishery specific, Southern Blue Whiting chapter, in the National Plan for Deepwater and Middle depth Fisheries is to be completed. Progress to be provided at each surveillance audit

Recommendation (#2). Progress on an external review of the fishery specific management system is provide. . Progress to be provided at each surveillance audit

Recommendation (#3) The fishery review and collate available research trawl information/data that may be used to provide up to date determinations of changes to key ecosystem indicators.

9. Traceability and eligibility

9.1. Eligibility date

The **Eligibility Date** for this assessment is the recertification date, 6th February 2026

9.2. Traceability within the fishery

Table 12: Traceability within the fishery

Statement on fishery's ability to track and trace to each Unit of Certification
Systems allow the fishery client to track and trace any fish or fish products sold as MSC certified back to the individual UoC.
Movement of fish and fish product between **harvest** and **landing** *An illustration of movement of product between harvest and landing. Include when any of the following happen: Harvesting, At-Sea processing, Translocation, Transhipment, Offloading, Landing.*
Factory vessels are equipped with fully integrated weighing and labelling systems in which every carton is barcoded on production and before storage in the hold. This system allows non-certified product to be barcoded as non-certified and to be trackable and separable by scanning at any subsequent stage. In port, vessel product data are reconciled with landing figures to arrive at a final inventory. There is no trans-shipment.
Movement of fish and fish products between **landing** and **start of the CoC** if relevant. *An illustration of movement of product between landing and start of CoC. Include when any of the following is happening: Transport, Storage, Sorting/ Grading, Packing, Auction.*
All fish and fish product are landed to Licenced Fish Receivers (LFR) who hold Chain of Custody certification

Description of any processing and sorting/ grading prior to change of ownership
All fish and fish product are landed to Licenced Fish Receivers (LFR) who hold Chain of Custody certification requiring strict, approved procedures to ensure certified and non-certified products are separately stored and are identifiable as certified or non-certified throughout the landing, processing, storage and transportation stages. In addition, MPI regulations require all packaged fish on a LFR's premises to be labelled such that the species name, date of landing, LFR name, processed state and area caught are clearly displayed. The process is considered to be well managed
For the critical tracking events (i.e. where in the product flow this data needs to be transferred) of all fish and fish product handling and sale not covered by CoC describe: • Process of segregating to each Unit of Certification • Key data elements (i.e. the data or documents to identify the UoC such as species, catch area, gear)
Existing fisheries management requirements include the clear identification of species, quantity, fishing method and area of capture by all vessels landing fish from the fishery. All catches are reported in logbooks and in catch and effort landing returns. On-board observer coverage also monitors, cross checks and verifies catches and landings with the vessel's logbook. Cross referencing of VMS data with logbooks, observer and aerial and at-sea surveillance reports also ensures that fish is reported from the correct area of capture. All landings are monitored by a dockside monitoring program. Vessels must advise MPI before landing and may be subject to monitoring by enforcement officers.
Where there are IPI stock(s) within the scope of certification, describe the verification of traceability systems
NA
Other relevant information on the systems to track and trace to each UoC
Where there is potential for mixing, these risks are managed by the operators who have their own protocols in place to separate these catches. They are legally required to record in catch and effort logbooks catch weight by position, and method, as well as on the official catch landing form. Further, the operators have their own internal reporting systems that record the date and time of fishing activities against the packaged product (if processed)

9.3. Traceability risks and mitigations

Table 13: Traceability risks and mitigation within the fishery

Factor	**Description of the traceability risk factors and details of the risk mitigation and management** *Include in each description:* • *Whether each factor occurs* • *When it occurs and how frequently (e.g. regularly, seasonally, rarely)* • *How any potential traceability risks are mitigated and any risk management* • *If covered by information provided elsewhere in the assessment report (such as table 9 for segregation or in section 5 MSC Fisheries Standard – Principle 3 – Effective management for regulatory frameworks), cross reference as needed.*
Will the fishery use gears that are not part of the UoC? If Yes, include in the description: • If this may occur on the same trip, on the same	No. The fisheries use only semi pelagic and mid water trawl gear. No other types of fishing gear are used.

Factor	Description of the traceability risk factors and details of the risk mitigation and management *Include in each description:* • *Whether each factor occurs* • *When it occurs and how frequently (e.g. regularly, seasonally, rarely)* • *How any potential traceability risks are mitigated and any risk management* • *If covered by information provided elsewhere in the assessment report (such as table 9 for segregation or in section 5 MSC Fisheries Standard – Principle 3 – Effective management for regulatory frameworks), cross reference as needed.*
vessels, or during the same season; • How any risks are mitigated.	
Will vessels in the UoC also fish outside the UoC geographic area? If Yes, include in the description: • If this may occur on the same trip; • How any risks are mitigated.	New Zealand vessels do not fish for southern blue whiting outside New Zealand's EEZ. If a vessel were fishing outside the UoC there are systems in place to record that fact. All factory trawlers in New Zealand are operating under New Zealand Food Safety Authority (NZFSA) and New Zealand Fisheries Act rules and regulations. As such, they are required to both land all catch of QMS species (such as hoki, hake and ling) and ensure that any fish that will not be fit for human consumption, e.g. through damage or accidental contamination, is not able to be inadvertently sold into market.
Do vessels from outside the UoC and/or client group ever fish on the same stock?	No NZ Seafood, DWC represents quota owners who own the majority (~90%) of the allowable catch for each of the UoCs. For those not a part of the DWC, they are required to have a certificate sharing agreement.
Do the fishery client members ever handle certified and non-certified products during any of the activities covered by the fishery certificate? This refers to both at-sea activities and on-land activities and should reflect those listed in product movement in Table 9. It includes: • Translocation • Transhipment • Transport • Storage • Processing • Sorting/ grading • Packing • Landing • Auction	Yes. All fish and fish product is landed to Licenced Fish Receivers (LFR) who hold Chain of Custody certification requiring strict, approved procedures to ensure certified and non-certified products are separately stored and are identifiable as certified or non-certified throughout the landing, processing, storage and transportation stages. In addition, MPI regulations require all packaged fish on a LFR's premises to be labelled such that the species name, date of landing, LFR name, processed state and area caught are clearly displayed. The process is well managed.

Factor	Description of the traceability risk factors and details of the risk mitigation and management *Include in each description:* • *Whether each factor occurs* • *When it occurs and how frequently (e.g. regularly, seasonally, rarely)* • *How any potential traceability risks are mitigated and any risk management* • *If covered by information provided elsewhere in the assessment report (such as table 9 for segregation or in section 5 MSC Fisheries Standard – Principle 3 – Effective management for regulatory frameworks), cross reference as needed.*
Does transhipment occur within the fishery? If yes, include in the description: • What is the type of transhipment in-port/ high seas/ other • What are the systems used to track and trace to UoC For high seas transhipment include in the description how the systems to track and trace to the UoC: • Are verified independently of the fishery client • Cover all fishing and receiving vessels involved in transhipment • Apply to all transhipment events If any of these 3 criteria above are not met for high seas transhipment CoC certification is required for both the fishing and receiving vessels involved in this transhipment.	There is no transhipment of catches at sea within the EEZ by New Zealand vessels If there was any doubt whether SBW landed into an LFR is from a certified fishery the product is treated as non-certified.
Are trading agents to be covered within the fishery certificate? If yes, include in the description: • How information on UoC is passed through	No
Are there any other risks of mixing or substitution between certified and non-certified fish?	No. Factory vessels are equipped with fully integrated weighing and labelling systems in which every carton is barcoded on production and before storage in the hold. This system allows non-certified product to be barcoded as non-certified and to be trackable and separable by scanning at any subsequent

Factor	Description of the traceability risk factors and details of the risk mitigation and management *Include in each description:* • *Whether each factor occurs* • *When it occurs and how frequently (e.g. regularly, seasonally, rarely)* • *How any potential traceability risks are mitigated and any risk management* • *If covered by information provided elsewhere in the assessment report (such as table 9 for segregation or in section 5 MSC Fisheries Standard – Principle 3 – Effective management for regulatory frameworks), cross reference as needed.*
If No, refer to the section describing product movement and segregation which demonstrates this.	stage. In port, vessel product data are reconciled with landing figures to arrive at a final inventory.
Are there any other risks of mixing between different Units of Certification? If Yes, include in the description: • link to any relevant variations relating to this If No, refer to the section describing product movement and segregation which demonstrates this.	All fish and fish product is landed to Licenced Fish Receivers (LFR) who hold Chain of Custody certification requiring strict, approved procedures to ensure certified and non-certified products are separately stored and are identifiable as certified or non-certified throughout the landing, processing, storage and transportation stages. In addition, MPI regulations require all packaged fish on a LFR's premises to be labelled such that the species name, date of landing, LFR name, processed state and area caught are clearly displayed. Where there is potential for mixing, these risks are managed by the operators who have their own protocols in place to separate these catches. They are legally required to record in catch and effort logbooks catch weight by position, and method, as well as on the official catch landing form.

9.4. Eligibility to enter further chains of custody

Table 14: Eligibility to enter Chain of Custody

Determination on whether fish and fish products from the certified UoC(s) can go onto be sold as certified. Including: • *Whether the ability for fish and fish products to be sold as certified is conditional upon CoC certification;* • *If traceability systems still need to be established prior to either CoC certification OR revised fishery determination.*
It is determined that fish and fish products from the certified Units of Certification can go onto be sold as certified.
The point of change of ownership of product to any party not covered by the fishery certificate and detail of any trading between client group members prior to this
The scope of this certification ends at the points of landing. Downstream certification of the product would require appropriate certification of storage and handling facilities at these locations.
The point from which subsequent Chain of Custody (CoC) is required *The latest this can happen is the point of change of ownership of fish or fish product to any party not covered by the fishery certificate (reference section above) but it may happen sooner in which case describe as per the product flow (in table 9). Note the requirement for when CoC is required to start on High Seas Transhipment.*

In order for subsequent links in the distribution chain to be able to use the MSC logo, southern blue whiting products must enter into a separate chain of custody certification from the point of landing forward.

The entities, or categories of entities, at the point of landing and/or sale required to have separate CoC including any auctions, selling agents, offloaders or storage facilities and so not covered in the above tables 9 and 10.

The subsequent links must be able to prove that they can trace southern blue whiting products back to the permitted vessels which landed the product. The main points of landing for this fishery are all major New Zealand ports

The ports of landing for SBW are

Southern Blue Whiting
Lyttleton
Timaru
Dunedin
Nelson
Bluff
Port Chalmers

A list of entities, or categories of entities, eligible to access the certificate and sell product as certified including:

- *Confirm if all vessels within the geographic area and gear of the UoC are eligible to sell fish and fish products as certified*
- *Any other limits to vessel types, ownership, client group membership*
- *Include any trading agents used*

The eligible parties to use the fisheries certificate are shareholders of the NZ Seafood Deepwater Council. DWC represents quota owners who own the majority (~90%) of the allowable catch for each of the UoCs. Anyone who owns southern blue whiting quota has the opportunity to become a DWG shareholder. Those not a part of the DWC are required to have a certificate sharing agreement.
Traceability of fishing activity within New Zealand is largely provided by the statutory requirements to record and report estimated catches in near-real-time via the Ministry's Electronic Reporting (ELR) system and through the Ministry's monitoring and compliance programmes. All vessels in the UoAs are equipped with Geospatial Position Reporting (GPR) equipment as well as being subject to monitoring by MPI observers and fisheries enforcement officers. Extensive record keeping is required for reporting landings and processing activity and this information is reported electronically to MPI. Fishing beyond the New Zealand EEZ requires special permitting prior to the activity of fishing and MPI observers on board during fishing operations. All EEZ and high seas fishing activities must be reported to MPI. No transhipment or motherships are used and no change of ownership of any orange roughy (raw or finished product) occurs prior to landing.

Points of landing, auctions or other transfer which may be used for the sale of fish from the certified fishery into further chains of custody, either:

- *The geographic region where all landing points are possible, or*
- *Named landing points, auctions or other transfer sites if there are limits*

The ports of landing for SBW are

Southern Blue Whiting
Lyttleton
Timaru
Dunedin
Nelson
Bluff
Port Chalmers

Any specific eligibility criteria for product to be sold as certified, or where to find this information where relevant, including: • *Product form* • *Trip type (e.g. includes outside EEZ)* • *Need for Chain of Custody* • *Need for trading through client group members*
NA
How fish or fish products can be identified or can be confirmed as certified at the point it enters certified CoC, including: • *How information on gear, species, stock, area, vessel (where relevant) client group member (where relevant) is provided* • *Any segregation to UoC required of first buyers (e.g. sort batches by species)* • *Where relevant how any specific eligibility criteria can be confirmed by the first buyer (as per section above)*
Existing fisheries management requirements include the clear identification of species, quantity, fishing method and area of capture by all vessels landing fish from the fishery. All catches are reported in logbooks and in catch and effort landing returns. On-board observer coverage also monitors, cross checks and verifies catches and landings with the vessel's logbook. Cross referencing of VMS data with logbooks, observer and aerial and at-sea surveillance reports also ensures that fish is reported from the correct area of capture. All landings are monitored by a dockside monitoring program. Vessels have to advise MPI before landing and may be subject to monitoring by enforcement officers. All fish and fish product is landed to Licenced Fish Receivers (LFR) who hold Chain of Custody certification requiring strict, approved procedures to ensure certified and non-certified products are separately stored and are identifiable as certified or non-certified throughout the landing, processing, storage and transportation stages. In addition, MPI regulations require all packaged fish on a LFR's premises to be labelled such that the species name, date of landing, LFR name, processed state and area caught are clearly displayed. The process is considered to be well managed.
How IPI is identified to first buyers at the point it enters certified CoC where relevant
NA

9.5. Eligibility of Inseparable or Practicably Inseparable (IPI) stock(s) to enter further chains of custody

There are no IPI stocks

10. Scoring

10.1. Principle 1

10.1.1. Principle 1 background

10.1.1.1. Biology and ecological role

Southern blue whiting are found throughout the Campbell Plateau (CP) and Bounty Plateau (BP) for much of the year, but during August and September they aggregate to spawn near the Campbell Islands (Campbell Rise, CR) and Pukaki Rise (PR), and on the BP, and near the Auckland Islands in depths of 250-600m (FNZ, 2024a).

Hanchet (1999) reviewed the stock structure of southern blue whiting. There appear to be four main spawning grounds of southern blue whiting; based on historical data on distribution and abundance, reproduction, growth, and morphometrics: the BP, PB, Auckland Islands Shelf, and CR. There are consistent differences in the size and age distributions of fish, in recruitment strength, and in the timing of spawning between these four areas. Multiple discriminant analysis of data collected during October 1989 and 1990 showed that fish from the BP, PR, and CR could be distinguished on the basis of their morphometric measurements. This was interpreted to mean that this constitutes strong evidence that fish in these areas return to spawn on the grounds to which they first recruit (FNZ, 2024a). No genetic studies have been carried out, but, given their proximity, it is unlikely that there would be detectable genetic differences in the fish between these four areas (FNZ, 2024a).

This schooling species has a maximum age of 25 years, with ages validated to 15. The age- and length-at-maturity varies between areas and years (FNZ, 2024a), with some males maturating at age 2 in some years, but most maturing at ages 3 or 4 (33-40cm). Females mature at ages 3 or 4 (35-42cm). Recruitment of southern blue whiting is highly variable. Growth is likely density-dependent, with significantly lower growth rates for strong year-classes (FNZ, 2024a).

Natural mortality for southern blue whiting has been inferred from the maximum age of 22yr to be $0.21yr^{-1}$ (Table 15), although assessments assume M=$0.2yr^{-1}$ given the uncertainty in the estimate (FNZ, 2024a). Assessments for the CR stock (SBW 6I) estimate M as part of the model fitting process.

Southern blue whiting is one of the dominant (in terms of biomass) middle depth fish species found on the CP and BP at depths between 250–600m. Crustaceans and teleosts are the dominant prey groups of southern blue whiting. Crustaceans occurred in 70% and teleosts in 32% of stomachs of southern blue whiting in the Sub-Antarctic (and similarly from the CR), with salps and cephalopods of lesser importances (7% and 2% of stomachs) (Stevens et al. 2011). Predation by marine mammals and large teleosts (including hoki and hake) is probably the main source of mortality for adults, and juveniles are frequently taken by seabirds (MPI,2013).

Table 15. Estimates of biological parameters for the Campbell Rise southern blue whiting stock. (Source: FNZ 2024a).

				Estimate	**Source**
1. Natural mortality (M)					
			Males	Females	
Campbell Rise			0.2	0.2	Hanchet (1991)
			0.17	0.18	Roberts and Hanchet (2019)
			0.16	0.17	Doonan (2020)
			0.19	0.17	Doonan et al. (2024)
2. Weight = a(length)^b (Weight in kg, length in cm fork length)					
		Male		Females	
	a	b	a	b	
Cambell Rise	0.00515	3.092	0.00407	3.152	Hanchet (1991)

10.1.1.2. Fisheries, catches and catch limits

Most of the catch of southern blue whiting is by foreign-owned New Zealand flagged vessels (predominantly large factory trawlers), which produce headed and gutted or dressed product and waste to fishmeal. Landings were primarily taken by USSR foreign-licenced vessels during the 1970s and early 1980s. Japanese surimi vessels entered the fishery in 1986. Table 16 lists the reported catches from logbooks from 1971 to 1977, and Table 17 lists the catches from quota management reporting (QMR) system from 1978 onwards. Catch limits has generally been under-caught. This reflects the economic value of these fish, the availability of alternative fishing opportunities, and difficulties experienced by operators in both timing their arrival on the grounds and locating the aggregations of fish (FNZ, 2024a).

Table 16. Reported annual landings (t) of southern blue whiting for all areas, 1971 to 1977. (Source: FNZ, 2024a).

Fishing year	Landings	Fishing year	Landings
1971	10 400	1975	2 378
1972	25 800	1976	17 089
1973	48 500	1977	26 435
1974	42 200		

The level of illegal and unreported catch of southern blue whiting is believed to be low (FNZ, 2024a), but in 2005 southern blue whiting caught in SBW 6I was falsely reported as having been caught in SBW 6A and SBW 6R. The master and operator of the vessel concerned were convicted for area misreporting. The operators of a vessel were later convicted of illegally discarding. Some discarding occurs in the fishery, Anderson (2004) estimated discard rates of 0.4 to 2.0%, with Anderson (2009) estimating 0.23%.

Table 17. Estimated catches (t) and actual TACCs (or catch limits) of southern blue whiting by area from vessel logbooks and QMRs. - no catch limit in place. Before 1997-98 there was no separate catch limit for Auckland Islands Shelf. Landings for the 2022–23 fishing year are considered preliminary. (Source: FNZ, 2024a).

	SBW 6B		SBW 6I	
	Bounty Plateau		Campbell Rise	
Fishing Year	Catch	Limit	Catch	Limit
1978†	0	–	6 403	–
1978–79+	1 211	–	25 305	–
1979–80+	16	–	12 828	–
1980–81+	8	–	5 989	–
1981–82+	8 325	–	7 915	–
1982–83+	3 864	–	12 803	–
1983–84+	348	–	10 777	–
1984–85+	0	–	7 490	–
1985–86+	0	–	15 252	–
1986–87+	0	–	12 804	–
1987–88+	18	–	17 422	–
1988–89+	8	–	26 611	–
1989–90+	4 430	–	16 542	–
1990–91+	10 897	–	21 314	–
1991–92+	58 928	–	14 208	–
1992–93+	11 908	15 000	9 316	11 000

1993–94+	3 877	15 000	11 668	11 000
1994–95+	6 386	15 000	9 492	11 000
1995–96+	6 508	8 000	14 959	21 000
1996–97+	1 761	20 200	15 685	30 100
1997–98+	5 647	15 400	24 273	35 460
1998–00‡	8 741	15 400	30 386	35 460
2000–01#	3 997	8 000	18 049	20 000
2001–02#	2 262	8 000	29 999	30 000
2002–03#	7 564	8 000	33 445	30 000
2003–04#	3 812	3 500	23 718	25 000
2004–05#	1 477	3 500	19 799	25 000
2005–06#	3 962	3 500	26 190	25 000
2006–07#	4 395	3 500	19 763	20 000
2007–08#	3 799	3 500	20 996	20 000
2008–09#	9 863	9 800	20 483	20 000
2009–10#	15 468*	14 700	19 040	20 000
2010–11#	13 913	14 700	20 224	23 000
2011–12#	6 660	6 860	30 971	29 400
2012–13#	6 827	6 860	21 321	29 400
2013–14#	4 278§	4 028	28 607	29 400
2014–15#	7 054	6 860	24 592	39 200
2015–16#	2 405	2 940	22 100	39 200
2016–17#	2 569	2 940	19 875	39 200
2017–18#	2 423	2 377	18 334	39 200
2018–19#	1 101	3 145	15 147	39 200
2019–20#	788	3 145	26 517	39 200
2020–21#	1 100	2 830	11 982	39 200
2021–22#	801	2 830	19 514	39 200
2022–23#	125	2 264	22 985	39 200

10.1.1.3. Assessment Process and Review

The information needed to assess stock status relative to the limit and target reference points, and to conduct projections are an estimate of recent abundance, $B_{current}$, an estimate of the unfished biomass B_0, and estimates of recruitment. This information is obtained from quantitative stock assessments based on fitting population dynamics models to monitoring data. The stock assessment process is open to anyone who elects to participate. The process is managed by Fisheries New Zealand and supported by quota owners through DWG.

Stock assessments for SBW 6I have been conducted using the general stock assessment package CASAL (Bull et al., 2012) and more recently Casal2 (Casal2 Development Team, 2022, 2024; Doonan et al., 2016). CASAL and Casal2 have many of the features of modern state-of-the-art stock assessment methods, including the ability to consider spatial structure, multiple fisheries and surveys, and populations divided by sex, location and maturity state. CASAL and Casel2 can use a variety of data sets for model-fitting purposes, with the most common data sources being catches by fishery, survey and CPUE-based indices of relative abundance, and fishery and survey age-composition data. The model fitting procedure allows for “additional variance” when fitting to the survey indices of

abundance and the catch and fishery age compositions. The assessment sections for each stock in the Plenary Report document the basis for the extent of additional variance.

The CASAL/Casal2 can estimate the key biological parameters of a population dynamics model (e.g., natural mortality, growth parameters, stock-recruitment steepness and unfished biomass) as well as those related to fishery selectivity and survey catchability. Informative prior (or penalty) distributions can be placed on the parameters of the model. However, it is not uncommon the pre-specify the values of some of these parameters based on auxiliary information. The results of the assessment can be provided as Maximum Posterior Density (MPD) estimates and as well as samples from a Bayesian posterior for the final models. The results of the Bayesian analyses provide the basis to estimate the probability of stock biomass being above or below management reference points and the likelihood of declines in the future given pre-specified time-trajectories of catches.

Assessments generally involve the selection of the data sets for inclusion in the assessment. The Stock Assessment Working Group then examines a variety of candidate model specifications and agrees to a base model (or base models) and a set of sensitivity analyses. Some of the results are based on MPD estimates but the primary focus of the results section of the summary report are the Bayesian results.

10.1.1.4. Assessments and Stock status

Table 18. Summaries of stock status (biomass relative to B_0) and the probability of being below the limit and target reference points based on the base model runs.

Stock	Most recent assessment	Depletion [Year]	P < Limit	P < Target
SBW 6B	Managed using an HCR			
SBW 6I	2023	63 (47-82) [2022]	< 1%	< 1%

10.1.1.4.1. Southern blue whiting (SBW 6B; Bounty Platform)

The most recent attempt to conduct a stock assessment for southern blue whiting on the Bounty Plateau occurred during 2014 (Dunn et al., 2015). However, preliminary model runs did not provide a satisfactory fit to both the high local-area aggregation acoustic biomass estimates observed during 2007–2008 and the lower local-area aggregation biomass estimates observed since 2009. Development of the assessment then focused on evaluating models with different assumptions that allowed a comparison of the extent to which the high biomass and subsequent decline were fitted. However, these have not proven successful, and the stock assessment was rejected by the Working Group and a harvest control rule was developed (FNZ, 2024a).

Acoustic surveys have been conducted for southern blue whiting on the Bounty Platform, and the HCR is based on the acoustic estimates of abundance adjusted for survey catchability (Table 19). The recent (2004 onwards) surveys involved fishing vessels opportunistically collecting acoustic data from the Bounty Plateau fishing grounds using a random survey design over an *ad hoc* area that encompasses an aggregation of southern blue whiting. This survey approach has had variable success, but the surveys during 2010-12 and 2013 appear to have been successful (FNZ, 2024a). However, attempts to obtain survey estimates of abundance in 2018, 2019, 2020, 2021 and 2022 were all unsuccessful, principally because surveyable aggregations of fish were not observed during the survey period (FNZ, 2024a). The proportion of the population available to the surveys in Table 19 is likely to be quite variable inter-annually.

The MSE analyses (Doonan, 2017, 2023) have identified a target threshold exploitation rate of $0.2yr^{-1}$, which would be expected to have a low probability of the stock being depleted to below the NZ soft limit of $0.2B_0$, which can be taken as proxy for the point at which recruitment is impaired This exploitation rate is also taken to be the basis for evaluating whether overfishing is occurring, which is the management target for the stock. Thus, for the purposes of this assessment F_{MSY} has been taken to the target threshold exploitation rate and stock status is evaluated based on the ratio of catch relative to survey biomass and the evaluation of stock status relative to PRI and B_{MSY} is scored using fishing mortality rate,

Table 19. Estimates of biomass (t) for immature and mature fish from wide-area acoustic surveys of the Bounty Plateau from 1993 to 2001 (Fu et al., 2013); and mature fish from local-area aggregation surveys in 2004–2017 and 2023 (O'Driscoll, 2015; O'Driscoll and Dunford, 2017; O'Driscoll and Ladroit, 2017; O'Driscoll, 2018; Wieczorek et al. in prep); and the proportion of catch that occurred before the biomass estimate in each year (based on catch effort data, and sample dates for the acoustic snapshots). Sampling CVs for the surveys are given in parentheses. (Source FNZ, 2024a).

	Wide-area survey estimates		Local-area aggregation survey estimates	
Year	Immature	Mature	Mature	Proportion
1995	0 (–)	17 945 (24%)	–	–
1997	3 265 (54%)	27 594 (37%)	–	–
1999	344 (37%)	21 956 (75%)	–	–
2001	668 (28%)	11 784 (35%)	–	–
2004	–	–	8 572 (69%)	0.73
2005	–	–	–	–
2006	–	–	11 949 (12%)	0.78
2007	–	–	79 285 (19%)	0.93
2008	–	–	75 889 (34%)	0.68
2009	–	–	16 640 (21%)	0.29
2010	–	–	18 074 (36%)	0.35
2011	–	–	20 990 (28%)	0.89
2012	–	–	16 333 (7%)	0.84
2013	–	–	28 533 (27%)	0.76
2014	–	–	11 852 (31%)	0.75
2015	–	–	6 726 (42%)	0.44
2016	–	–	6 201 (35%)	0.93
2017	–	–	7 719 (24%)	0.61
2023	–	–	12 506 (18%).	0.47

Fishing mortality is estimated to be fluctuating about the target level since 2006, but below target in 2023 (Figure 2).

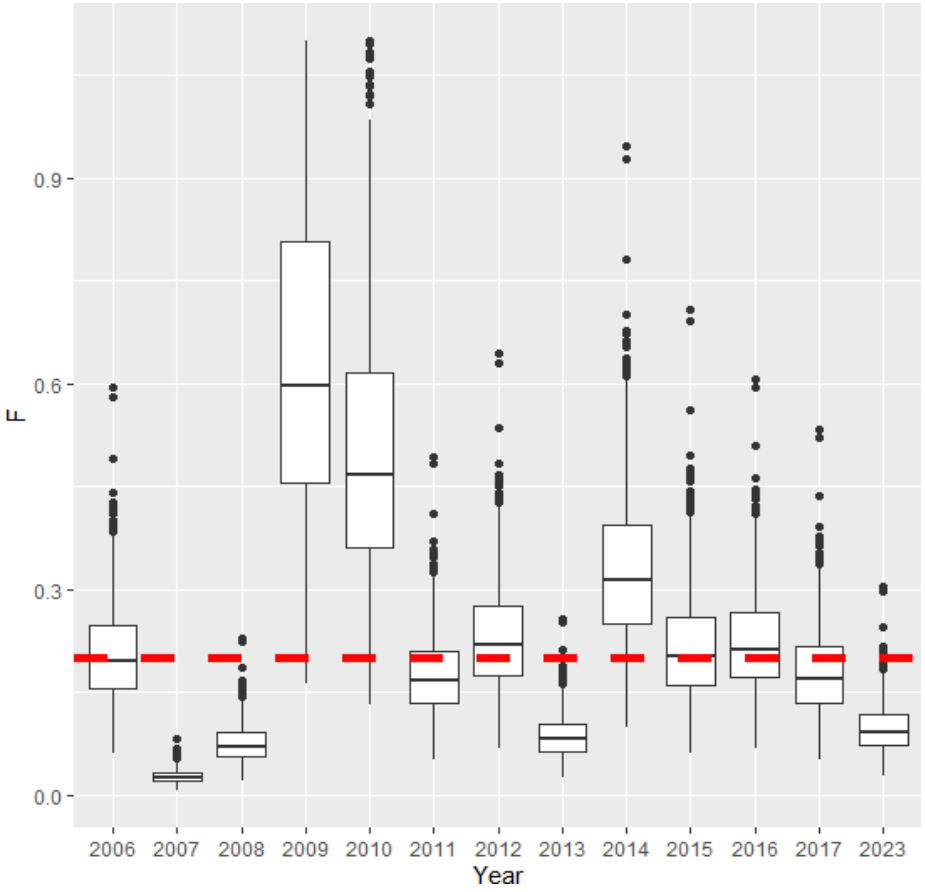


Figure 2. Distribution of exploitation rate (*F*) using historical data and the Q-prior used in the simulations of Doonan (2023). The dashed red line is the agreed target of 0.2 (i.e., M). (FNZ, 2024a).

10.1.1.4.2. Southern blue whiting (SBW 6I; Campbell Island Rise)

The most recent stock assessment for SWB 6I was conducted during 2023 (Doonan et al., 2024). The 2023 assessment considered the period 1960 to 2022 and was based on Casal 2.

Model structure

The 2023 assessment was based on a two-sex age-structured population dynamics model. The model was initiated at equilibrium in 1960, with year-class strengths estimated from 1958 given the evidence for strong year classes in age data, which are available from 1979.

Table 20. Estimated catches and catch limits (TACCs) (t) of SBW 6I for 1971 to 2022‑23 (source: QMRs, MHRs, Roberts and Dunn, 2017; italicised catch figures from 1971 to 1977 were estimated by applying the proportion of the catch taken from the from the Campbell Island stock between 1978 and 2016–17 to the period 1971–1977, following Hanchet, (1998) and Roberts & Dunn (2017) ; '–' denotes no catch limit in place). (Source: Doonan et al., 2024)

Year[1]	Estimated catch[2]	Year[1]	Estimated catch[2]
1971	*7 260*	1996–97	15 685
1972	*18 010*	1997–98	24 273
1973	*33 856*	1998–00	30 386
1974	*29 458*	2000–01	18 049

1975	*1 660*	2001–02	29 999
1976	*11 929*	2002–03	33 445
1977	*18 453*	2003–04	23 718
1978	*6 403*	2004–05	19 799
1978–79	25 305	2005–06	26 190
1979–80	12 828	2006–07	19 763
1980–81	5 989	2007–08	20 996
1981–82	7 915	2008–09	20 483
1982–83	12 803	2009–10	19 040
1983–84	10 777	2010–11	20 224
1984–85	7 490	2011–12	30 982
1985–86	15 252	2012–13	21 321
1986–87	12 804	2013–14	28 606
1987–88	17 422	2014–15	23 397
1988–89	26 611	2015–16	22 100
1989–90	16 542	2016–17	19 875
1990–91	21 314	2017–18	18 334
1991–92	14 208	2018–19	15 147
1992–93	9 316	2019–20	26 517
1993–94	11 668	2020–21	11 982
1994–95	9 492	2021–22	19 514
1995–96	14 959	2022–23	22 985

1: Fishing years defined as 1 April to 30 September for 1978; 1 October to 30 September for 1978–79 to 1997–98; 1 October 1998 to 31 March 2000 for 1998–2000; 1 April to 31 March for 2000–01 to current. 2: Estimated catch. Estimates for 1971 to 1977 are taken from Roberts & Dunn (2017).

The model on which the assessment was based considered ages from 2-15yr, with age 15 treated as a plus-group, fish partitioned into immature and mature fish, and the catch restricted to the mature component of the population (so that fishery selectivity was uniform on mature fish). Table 21 summarizes the annual cycle of the model. Growth was not estimated as part of the model-fitting process given substantial environmentally-driven inter-annual variation in growth. Rather, mean sizes-at-age were pre-specified based on commercial catch-at-length and -at-age data, with missing values inferred based on the relative size of their cohort and mean growth of similar ages in other years. Table 22 lists the values for the remaining biological parameters.

Table 21. Annual cycle of the model for SBW 6I, showing the processes taking place at each step, and the available observations. Fishing mortality (*F*) and natural mortality (*M*) that occur within a time step occur after all other processes. *M*, proportion of *M* that occurs within a time step occur after all other processes. *M*, proportion of *M* occurring in that time step. (Source: FNZ, 2024a).

Step	Period	Processes	*M*	Observations
1	Nov–Aug	Natural mortality	0.9	
2	Sep–Oct	Age, recruitment, *F*, *M*	0.1	Proportion-at-age, acoustic indices

Table 22. Biological parameters for SBW 6I. (Source: Doonan et al., 2024).

Relationship	Reference	Parameter (units)	Both
Natural mortality (yr^{-1})			0.2
Stock recruitment relationship			
Stock recruitment steepness	Doonan et al. (2024)	*h*	0.9
Recruitment variability		σ_R	0.6
Ageing error	Doonan et al. (2024)	CV	0.05
Proportion male at age 2			0.5
Proportion of mature that spawn			1.0
Maximum exploitation rate		U_{max}	0.6

The model was fitted to a time-series of wide-area acoustic survey-based estimates of immature and mature biomass and fishery age-composition data (Table 23).

Table 23. Summary of the relative abundance series applied in the models for SBW 6I, including source years (Model year). The estimate biomass for 2016 from the trawl survey and its associated age-composition were not included in the assessment. (Source: Doonan et al., 2024).

Data series	Model year
Tanagaroa survey estimates (immature and mature)	1993, 1994, 1995, 1998, 2000, 2002, 2004, 2006, 2009, 2011, 2023, 2016, 2019, 2022
Fishery catch-at-age	1979-2022

The model on which the assessment based estimated unfished biomass, survey catchability (separately for mature and immature animals), age-2 year-class strengths for 1960 to 2021, and the parameters governing maturation by sex.

The assessment involved a series of maximum posterior density analyses, with the final estimates based on MCMC sampling. The base model assumed natural mortality (*M*) was $0.2yr^{-1}$ for both sexes, placed a prior (mean 0.54, CV 0.44; Roberts & Hanchet, 2019) on survey catchability, and estimated recruitment deviations for 1958-2019. The sensitivity tests examined were:

- Mfree: As for the base model, but with natural mortality estimated.
- Ttvary: As for the base model, but with time-varying maturity from 1990 to 2022.

The fits to the biomass indices were reasonable (Figure 3) and to the age-composition data (Doonan et al., 2024). As in previous assessments survey catchability was estimated to be less than the prior mean (base-case median 0.41).

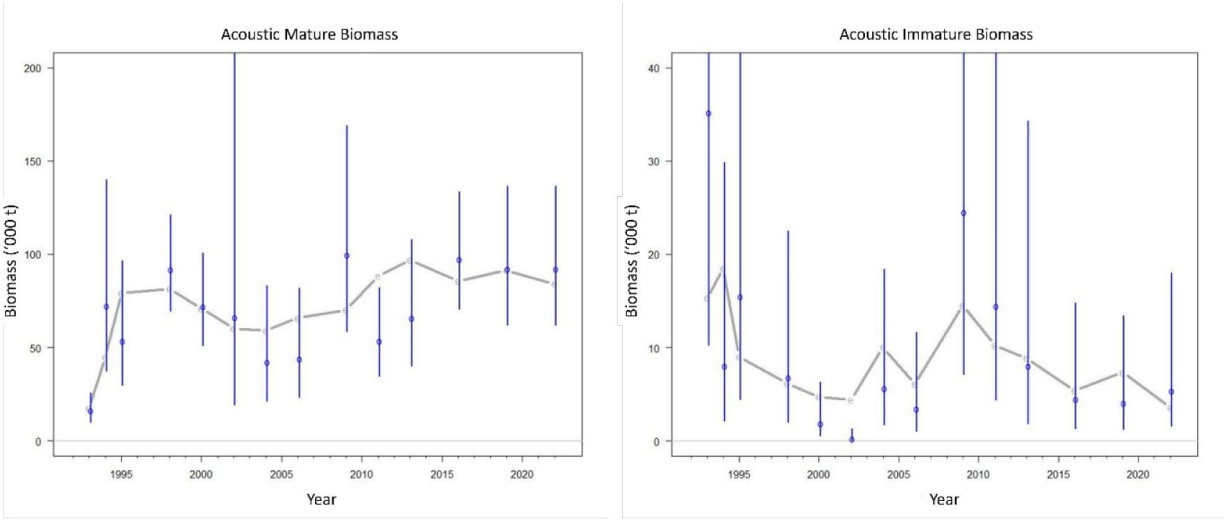


Figure 3. Results of MPD fits for Base model showing (left panel) observed (o) and expected (e) mature acoustic biomass index (± 2 s.d.); and (right panel) immature acoustic observed (o) and expected (e) biomass indices (±2 s.d. including process error). (Source Doonan et al., 2024).

Biomass and recruitment

The stock is characterized by highly variable recruitment (Figure 4), with the 2015 recruitment driving trends in current biomass. The biomass increased early during the modelled period due to strong year-classes during the 1960s, declined to below $0.2B_0$ owing to series of weak year-classes and recovered from 1994 to 1996 due to the very strong 1991 year-class (Figure 4 and Figure 5). The stock is estimated to be well above the target biomass of $0.4B_0$ (Table 24), with exploitation rates lower than that corresponding to the biomass target (Figure 6).

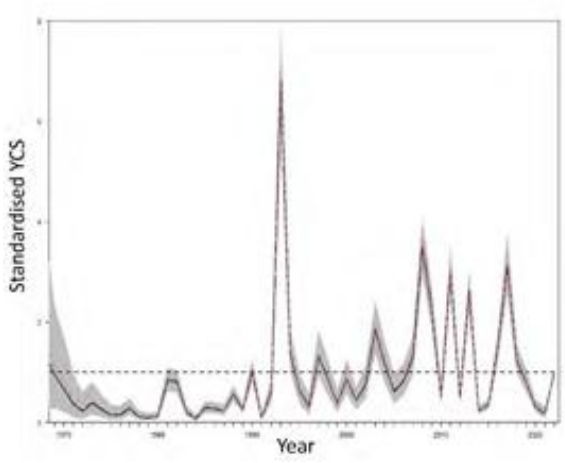


Figure 4. Estimated posterior distributions of relative year class strength for SBW 6I for the base case model. The red dashed line in each plot shows the MPD result. Year is the model year that fish enter the population at age 2. (Source: FNZ, 2024a).

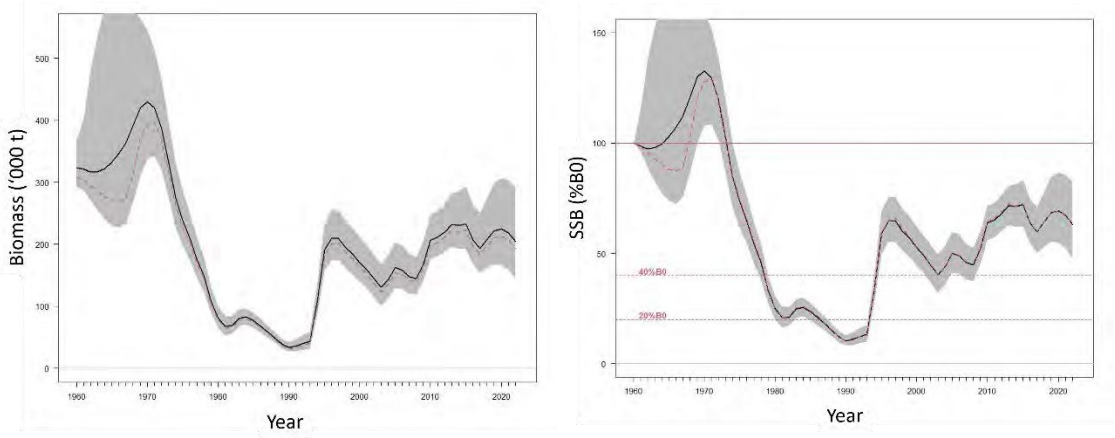


Figure 5. MCMC posterior plots of the trajectories of biomass (left) and current stock status (% B_{2022}/B_0) (right) for the base case mode for SBW 6I. The shaded regions are the 95% credible intervals and the red dashed line shows the MPD result. In the right hand plot, the red dotted lines show the target ($0.4B_0$) and soft limit ($0.2B_0$). (Source: FNZ, 2024a)

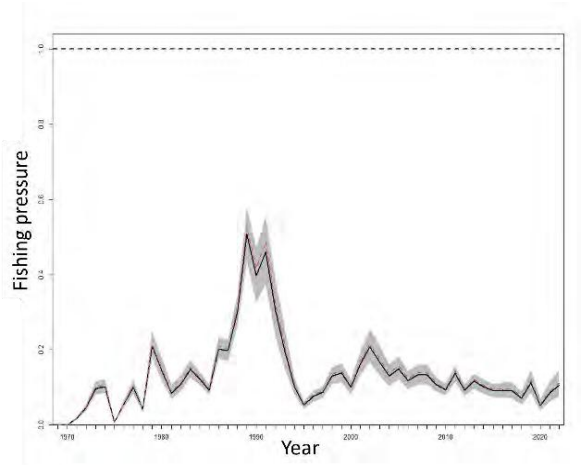


Figure 6. Estimated posterior distributions of exploitation rates for the base case model for SBW 6I. The red dashed line in each plot shows the MPD result. (Source: FNZ, 2024a).

Table 24. Bayesian median (95% credible intervals) (MCMC) of B_0 and B_{2022} ('000t), and B_{2022} as a percentage of B_0 for SBW 6I for the three model runs. (Source: FNZ, 2024a).

Case	B_0 ('000t)	B_{2022} ('000t)	B_{2022} (%B_0)	P(>40%B_0)	P(<20% B_0)
Base case	323 [292-369]	204 [144, 291]	63 [47-82]	<0.01	<0.01
Mfree	319 [294-365]	185 [124, 280]	58 [41-79]	<0.01	<0.01
Tvary	345 [310-400]	196 [138, 278]	57 [42-74]	<0.01	<0.01

Projections

Five-year projections (2022-2027) were undertaken with catches equal to the average catch during 2020-21 to 2022-23 (18,200t) or the TACC (39,200t) and for two recruitment scenarios: (i) long-term recruitment (1960-2021) and (ii) recent recruitment (2012-2021). Projected mean sizes-at-age were assumed to be equal to the average of the estimated sizes-at-age for 2018-2022. The probability of dropping below the soft limit ($0.2B_0$) was low (2%) for the recent average catch

but increased with time for catches equal to the TACC. This probability exceeded 0.2 by 2026-27 if future recruitment was best represented by the long-term series and by 2027-28 if future recruitment was best represented by the recent series.

10.1.1.5. Harvest strategies

10.1.1.5.1. Reference points and harvest strategy

Management advice on setting TACs for southern blue whiting has to be broadly consistent with the Harvest Strategy Standard for New Zealand Fisheries (HSS). The HSS (MPI, 2008, 2011) aims to:

> *"provide a consistent and transparent framework for setting fishery and stock targets and limits and associated fisheries management measures, so that there is a high probability of achieving targets, a very low probability of breaching limits, and acceptable probabilities of rebuilding stocks that nevertheless become depleted, in a timely manner"*.

The HSS specifies probabilities for each of these outcomes. The HSS is consistent with the 2008 Amendments to the Fisheries Act 1996. The Standard (i.e., not the Fisheries Act) includes the need for a target reference point, a soft limit and a hard limit. Stocks that are assessed to be depleted to below the soft limit require a formal, time-constrained rebuilding plan, while stocks that are depleted to below the hard limit should be considered for closure. Under the HSS, stocks depleted to below the soft limit should be rebuilt (with an acceptable probability) to at least the target level/range between T_{MIN} and $2xT_{MIN}$ where T_{MIN} is the theoretical minimum number of years required to rebuild a stock to the target level/range in the absence of fishing (MPI, 2008). The HSS was established following extensive consultation and review (including international peer-review of a draft of the standard). The Standard is not, however, a management strategy because it does not specify, for example, the form of the HCR, and the monitoring requirements, although both monitoring and some form of an HCR are needed to implement the HSS. The TAC is set by the Minister for Oceans and Fisheries (who executes the responsibilities of the Minister of Fisheries) through a public process. The Minister, under Section 13 of the Fisheries Act 1996, sets a TAC for a quota management species that:

a) *maintains the stock at or above a level that can produce the maximum sustainable level; or,*
b) *enables the level of any stock whose current level is below that which can produce the maximum sustainable level to be altered:*
    i. *in a way and at a rate that will result in the stock being restored to or above a level that can produce the maximum sustainable level and*
    ii. *within a period appropriate to the stock, having regard to the biological characteristics of the stock and any environmental conditions affecting the stock or*
c) *enables the level of any stock whose current level is above that which can produce maximum sustainable level to be altered in a way and at a rate that will result in the stock moving towards or above a level that can produce the maximum sustainable yield.*

The Fisheries Act 1996 does not refer to harvest strategies or HCRs. However, the HSS refers to both. MPI (2011) outlines the generic Harvest Control Rule (HCR), which is used to inform sustainable harvesting of all New Zealand fisheries. The genetic HCR provide a framework for application of structured exploitation rate controls to be applied in NZ fisheries. It consists of three core elements:

- Specified target based upon MSY-compatible reference points (B_{MSY} and F_{MSY}) or better about which a fishery or stock should fluctuate with at least a 50% probability of achieving the target
- Soft limit (default of $0.5B_{MSY}$ or $0.2B_0$ whichever is higher) that triggers a requirement for a formal, time-constrained rebuilding plan when probability that stock biomass is below this soft limit is greater than 50% probability.
- Hard limit (default of $0.25B_{MSY}$ or $0.1B_0$ whichever is higher) below which fisheries should be considered for closure when the probability that stock biomass is below this hard limit is greater than 50% probability.

The status of fisheries and stocks is characterised according to these reference points:

- If the MSY-compatible fishing mortality rate, F_{MSY}, or an appropriate proxy is exceeded on average (over 3.5 years), ***overfishing*** is deemed to have been occurring, as stocks fished at rates exceeding F_{MSY} will ultimately be depleted below B_{MSY}.
- A stock that is determined to be below the soft limit will be designated as ***depleted*** and in need of rebuilding.
- A stock that is determined to be below the hard limit is designated as ***collapsed***.

Actions when current biomass is likely to be above soft and hard limits but below targets (or thresholds):

1. Stock Assessment Working Groups will provide best estimates and confidence intervals for current biomass and/or fishing mortality (or related biological reference points).
2. If current biomass is estimated to be between the target (or the threshold) and the soft limit, SWGs should work with fisheries managers to define and evaluate the TACC consequences of:
    a. reducing fishing mortality proportionately to the estimated decrease in biomass below the target or threshold (or taking steps to approximate this for low information stocks), in order to avoid breaching either the soft or hard limits, and/or
    b. reducing catch super-proportionately to the estimated decrease in biomass below the target or threshold (or taking steps to approximate this for low information stocks), in order to avoid breaching either the soft or hard limits.
3. If current biomass is estimated to be above some threshold, Stock Assessment Working Groups will work with fisheries managers to define and evaluate the TACC consequences of:
    a. maintaining a constant *F* that will achieve the target biomass on average (or taking steps to approximate this for low information stocks), and/or
    b. reducing catch proportionately to the estimated decrease in biomass towards the threshold (or taking steps to approximate this for low information stocks), and/or
    c. increasing catch proportionately to the estimated increase in biomass above the threshold (or taking steps to approximate this for low information stocks).

Stocks will be considered to have been fully rebuilt when it can be demonstrated that there is at least a 70% probability that the target has been achieved and there is at least a 50% probability that the stock is above the soft limit. The form of the biomass – fishing mortality relationship is an emergent property of the above HCR and is not a proscribed analytical function. This (and the genetic HCR outline in Fig. 6 of MPI, 2011) is consistent with HCR reduces exploitation rates as the limit reference point is approached.

The effective HCR for southern blue whiting is consistent with the HSS and associated Operational Guidelines and consists of the following:

- Assessment by the Deepwater Fisheries Assessment Working Group every 1-3 years to estimate probability of current biomass and/or fishing mortality relative to limit and target reference points.
- Conduct 5-year projections to evaluate the probability of stock biomass being below the management target (or management target range), the hard limit and the soft limit; these are done for a base case model and for models that explore the main uncertainties in the assessment; these are made using the Markov Chain Monte Carlo (MCMC) samples from the stock assessment, with recruitment drawn randomly from the distribution of year-class strengths over the assessment time period, or more recently (e.g., 10 years) as deemed appropriate by the Deepwater Fisheries Assessment Working Group.
- Decision by the New Zealand Minister of Fisheries on TAC (and associated TACC) during projection period, consistent with HSS and informed by Stock Assessment Working Group and stakeholder engagement; consultation during this step can result in additional projections undertaken by MPI.
- Monitoring of stock performance during projection period to ensure that stock status is not being compromised by the management actions.

The approach outlined above is not a formal (well-specified) harvest control rule but contains the elements of such. There is evidence based on the hoki fishery that the TACC (and exploitation rate) for a fish stock will be reduced when its biomass drops below the target level (and is hence starting to approach the New Zealand soft limit). In this case, the

2021 stock assessment for hoki found that five-year projections of biomass under the current catch limits would lead to the stock being predicted to drop below the management target range the following year. A series of options for TACCs for HOK1 were consulted on (FNZ, 2021) and the Minister of Fisheries selected an option that reduced the catch limit for HOK1W by 10,000t and increased the catch limit for HOK1E by 5,000t (Minister of Fisheries, 2021). This option was predicted to have a 56% probability of the HOK1W stock being within the management target range (FNZ, 2021).

The process for setting TACs first involves Fisheries New Zealand providing a discussion document that outlines a set of options for the TAC (and other management controls including TACCs and other catch limits), and provides the context for the Minister's decision and other relevant background material such as previous management decisions and the results of the stock assessment, including the main uncertainties (e.g., FNZ, 2022, 2024b). The discussion document also outlines for how each option is consistent with the Fisheries Act 1996 and with the harvest strategy (e.g. FNZ, 2022, 2024b). Regarding the latter, in its consideration of TACC options, MPI explicitly addresses whether or not illegal catch and misreporting are issues. Determination on whether or not adjustment to the TACC is required is based upon risk analyses undertaken by MPI as part of its compliance monitoring. The discussion document is then released for a four- to six-week public consultation period during which submissions are received from stakeholders, including industry and non-governmental organizations. These submissions are incorporated into a decision document, which forms the basis for the Minister's decision (e.g., Minister of Fisheries, 2022, 2024).

MPI (2025) outlines a series of proposed amendments to the Fisheries Act. These proposals include the ability for the Minister of Fisheries to set TACs in advance for up to five years and approve procedures that specify how and why catch limits would be adjusted for a period up to five years (essentially formal harvest control rules). The procedures would be consulted on prior to approval, with the decision on catch limits (within the bounds of the procedure) delegated to the MPI Chief Executive. The procedures would include: (a) the objectives for the stocks concerned, (b) the biomass target (if any), (c) performance measure(s), (d) an equation that calculates the appropriate catch limit based on the performance measures, and (e) operating specifications and parameters about how it would operate (including provision for exceptional circumstances where a procedure may not be allowed).

10.1.1.5.2. Informing B_{MSY} and the limit reference point

The default values for the hard and soft limits are $0.1B_0$ and $0.2B_0$. A limit reference point of $0.2B_0$ is consistent with the MSC guidance on the limit reference point, and is used in this assessment for scoring purposes. Values for B_{MSY} are not routinely calculated during stock assessments for New Zealand fish stocks, *inter alia* because these are usually based on deterministic dynamics and can lead to maximum production being inferred to occur at very small fractions of the unfished level. Rather "management targets" are established. The proxy for B_{MSY} has been defined as $0.35B_0$ for medium productivity species and $0.4\text{-}0.5B_0$ for low productivity species (MPI, 2011).

The current B_{MSY} proxy is $0.4B_0$ for southern blue whiting, with the latter supported by a management strategy evaluation (see section 10.1.1.5.3).

10.1.1.5.3. Management strategy evaluations

Management strategy evaluation (MSE) is the use of simulation to evaluate the extent to which management strategies (combinations of monitoring schemes, stock assessment approaches and harvest control rules) are able to satisfy the management objectives (Punt et al., 2016). MSE involves the development of operating models (OMs) that represent the system being managed. The OMs aim to be realistic and plausible to capture a range of uncertainties. OMs are often divided into a 'reference set' on which final recommendations regarding the management strategy to adopt is based and a 'robustness set', which is used to evaluate whether the management strategy behaves as expected given a situation that may less likely than the OMs in the reference set but are nevertheless not entirely implausible.

The work to select harvest control rules (HCRs) aimed to identify HCRs that involve the following elements (Seafood New Zealand, 2025):

- Developing a stock assessment approximately every four years, with peer review provided by the relevant Assessment Working Group, to estimate the probability of current biomass and/or fishing mortality relative to target and limit reference points.

- Conducting multi-year projections to evaluate, in a probabilistic manner, where the stock is and will be in future years in relation to reference points. This would be done for a base model case as well as for models that explore key uncertainties in the assessment.
- Making decisions on the TAC by the Minister of Oceans and Fisheries in a manner consistent with HSS and informed by Assessment Working Group advice and stakeholder engagement. Consultation during this step may result in additional projections being undertaken by Fisheries New Zealand.
- Monitoring of the fishery and stock performance during the projection period to ensure that stock status is not being compromised by the management actions.

The research conducted to evaluate candidate HCRs aimed to identify HCRs that achieve a variety of management objectives, including those related to biological objective as well as the resilience of the management measures under uncertainty and potential socio-economic implications (Seafood New Zealand, 2025). The HSS specifies minimum performance criteria to be met by MSEs: (a) a ≥ 50% probability of achieving the MSY-compatible target or better, (b) a ≤ 10% probability of breaching the soft limit, and (b) a ≤ 2% probability of breaching the hard limit. The NZ government has not adopted HCRs but the Deepwater Council and Fisheries New Zealand intend to apply selected HCRs to support setting of catch limits. This will involve: (a) providing the output from running the selected HCR to inform the formulation of TAC and TACC options, (b) grounding the advice to the Minister of Fisheries in the results of the HCR projections alongside the scientific and stakeholder input, and (c) where there is divergence between the HCR-recommended catch and a Ministerial decision, the Deepwater Council will implement the lower of the two as a precautionary measure (Seafood New Zealand, 2025).

Doonan (2017) conducted an initial management strategy evaluation for SBW 6B. The operating model (OM) was genetic although it had biological features (e.g. length-at-age and its uncertainty) based on assessments for southern blue whiting. The value for unfished biomass was 100,000t (with sensitivity explored to values of 62,000t and 120,000t), although the candidate HCRs were largely scale-invariant. The effects of the parameters of the OM were examined by placing a grid on natural mortality, *M*, Beverton-Holt stock-recruitment steepness, *h*, and the additional CV for the acoustic surveys, Add_{cv}, resulting in 30 potential combinations of parameters. However, for most of the analyses, the five *M* values were run for (a) *h*=0.84 and Add_{cv}=0.2, and (b) *h*=0.9 and Add_{cv}=0 because these cases bounded the risk from all combinations (Doonan, 2017). Year-to-year recruitment variability was assumed to be autocorrelated. The autocorrelation parameter was assigned based on a distribution, with the extent of recruitment variability set to 0.83. Initial depletion was selected from U[0.2, 0.3], A scenario was also explored where a large (15 times normal) recruitment occurred before the fishery commenced.

The HCRs explored were all of the form $TACC_y = \lambda(B_y - C_y)$: where $B_y$is an estimate of acoustic biomass and C_y is the catch. These HCRs therefore respond directly to new information on biomass The value of the parameter λ was selected to satisfy a desired risk objective, with Doonan (2017) basing his work on a risk threshold of a 10% probability that the mid-year biomass is below $0.2B_0$. The simulated biomass was assumed to be log-normally distributed about the product of true biomass and survey catchability (*Q*). The sampling CV was set to 0.27 and the prior for Q was taken to be lognormal with mean of 0.54 and a CV 0.68. The value for was found to be 0.22 by Doonan (2017).

The 2017 HCR ("HCR_{2027}") was used twice, in 2017 and 2018 (FNZ, 2024a), but no new survey estimates of abundance were available until 2023. A "HCR_{2022}" was therefore developed using the same approach as applied by Doonan (2017), but allowing for periods of consecutive years with no surveys. HCR_{2022} used as its base the HCR_{2017}-calculated catch for the year after an acoustic survey, but it cumulatively 'discounted' this catch for each consecutive year with no survey. The harvest control rule for SBW 6B was further updated during 2022 to more fully account for the possibility that an acoustic survey is not completed for the stock (Doonan, 2023). This new HCR involves adjusting the TAC based on a series of multiplicative factors that relate to how many years it has been since a survey was conducted and an estimate of biomass obtained (Table 20 of FNZ [2024a]).

The most recent application of harvest strategy was during 2024. The application of the HCR was based on a 2023 mature biomass estimate of 12,506t (CV 0.18), the average of two snapshots on 18 and 20 September 2023, with the catch at survey time set to 947t (FNZ, 2024a). Given an assumed survey catchability of 0.6, this leads to a biomass

estimate pre-fishery of 21,791t and hence a TAC of 4,988t (i.e., 0.24*(21,791-2010/2)) (FNZ, 2024a). FNZ (2024b)) proposed consideration of an increase in TAC from 2,309 to 4,988t. The proposal for the change in TAC was consulted on and nine submissions were received. One submission supported the status quo, five submissions supported the increase in TAC, and three submissions supported neither of the two options. The Minister of Fisheries decided to increase in the TAC to 4,988t (a TACC of 4,888t) (FNZ, 2024b; Minister of Fisheries, 2024).

Dunn (2024) conducted an evaluation of harvest control rules (HCRs) based on the most recent (2023) stock assessment for SBW 6I (Doonan et al., 2024). The operating models assumed that recruitment averaged at a level comparable to that for the entire period for which recruitment is estimated within the stock assessment (1958-2019), although the MSE also explored sensitivity to autocorrelation in future recruitment. In addition, the MSE explored sensitivity to uncertainty associated with natural mortality and stock-recruitment steepness (Table 8 of Dunn [2024]). The evaluation of HCRs also accounted for the delay between assessments being conducted and when TACCs are subsequently changed.

The results of the MSE were based on performance metrics related to catches, catch variability, and the probabilities of dropping below various biomass reference points, including $0.3B_0$ the upper and lower limits of management target range (0.35 and $0.55B_0$) and the New Zealand soft and hard limits of $0.2B_0$ and $0.1B_0$. The analyst defined selection criteria for the performance metrics considered, including that the probabilities of dropping below 0.2 and $0.3B_0$ should not exceed 0.05 and 0.10 respectively.

Dunn (2024) examined several groups of candidate HCRs: a constant exploitation rate strategy, three threshold strategies in which fishing mortality was ramped up from 0, $0.1B_0$ and $0.2B_0$, and two strategies that ramped fishing mortality from 0 and $0.2B_0$ to either $0.4B_0$ or (1-M) x $0.4B_0$ = $0.32B_0$. Assessments and TAC updates were assumed to occur every three years, and three levels of catch variability constraint were explored (a 10% threshold before changes in TACC were applied, a 20% maximum change in catch limits, and both a 10% threshold before changes in TACC were applied and a 20% maximum change in catch limits). Future estimates of spawning stock biomass were generated from lognormal distributions, in some cases with autocorrelated errors, i.e. using the “shortcut” approach to MSE.

Dunn (2024) found that a target biomass range of 0.4-$0.55B_0$ would maintain the stock above $0.2B_0$ with a probability of at least 90%, and the biomass would fluctuation about $0.4B_0$. The catches under alternative HCRs varied considerably owing in particular to the highly variable recruitment of southern blue whiting. Dunn (2024) highlighted the need for “break out” rules to address uncertainties such as a sustained period of recruitment different from that assumed in the analyses and that surveys are not conducted at the assumed frequency.

No HCRs have yet been adopted by the NZ government for southern blue whiting (Seafood New Zealand, 2025). Industry selected an HCR for SBW6I that involved a target level of fishing mortality corresponding to $0.4B_0$, which is achieved when spawning biomass exceeds 32% of unfished spawning biomass, with TACs set to zero at 10% of unfished spawning biomass (Rule-4 in Figure 7 of Seafood New Zealand, 2025). TACCs for SBW6I has been slightly below the projected 2025 catch range (Seafood New Zealand, 2025).

The guidelines for applying the HSS (MPI, 2011) refer to the fisheries management targets accounting for ecosystem (and other) considerations and that catch levels should be set more conservatively than those that meet single-species considerations alone. Southern blue whiting would not be considered low trophic level species. However, the MSE work has not referenced how ecological role was accounted for.

10.1.1.5.4. Tools

The tools to control fishing to achieve the objectives of the harvest strategy have not changed since the last recertification. To summarize, since 1986, the 636 fish stocks harvested by the major commercial fisheries in New Zealand fisheries waters, have been managed through a quota management system (QMS) using individual transferable quotas (ITQs). Each fish stock has 100,000,000 quota shares issued in perpetuity. The quota shares are a property right. This system is fully described on MPI’s website (https://fs.fish.govt.nz/). Within the QMS, fisheries sustainability objectives are achieved by setting an overall annual total allowable catch (TAC) that is consistent with the productivity of a fishery. The

TAC is apportioned amongst user groups such as the TACC for the commercial fishery, allocations for Maori and the recreational sector and an allocation to address other fishing-related mortality such as illegal fishing or accidental loss of fish from nets.

Each license holder owns a set of tradable shares associated with a particular fish stock. The TACC for each fishery is split across these shares and thus apportioned amongst quota owners. The sum of these shares is the licensee's Annual Catch Entitlement (ACE). The ACE is a hard limit. Each commercial fishing permit holder must balance their catch against their ACE holding. If the permit holder does not hold ACE, they must purchase ACE from another ACE holder. Some ACE is held by entities that do not intend to fish but sell their ACE to fishers who need to balance their catch against ACE. If a licensee catches more fish than their ACE, a charge is levied as per a Deemed Value (DV) determined annually by MPI on an increasing scale above the ACE. Thus, while TACC overruns can occur, there is a large financial incentive for licensees to maintain their catch within their allotted ACEs.

The 1996 Fisheries Act and associated regulations describe a wide array of effort-based tools (e.g. gear configuration, time and area closures, etc.), which are used in addition to quotas to control fishing mortality.

10.1.1 Catch data

Table 20 summarizes the catch data for southern blue whiting by area and FishStock.

10.1.2 Principle 1 catch

Table 25. TACC (agreed catch proportion) and catch data for southern blue whiting (SBW 6B).

TACC / Catch Data	Year	Amount
TACC (catch limit)	Year (2023-24)	2,264 t
UoA share of TACC	Year (2023-24)	2,264 t
Total catch by UoC (most recent year)	Year (2023-24)	2,010 t
Total catch by UoC (second most recent year)	Year (2022-23)	125 t

Table 26. TACC (agreed catch proportion) and catch data for southern blue whiting (SBW 6I).

TACC / Catch Data	Year	Amount
TACC (catch limit)	Year (2023-24)	39,200 t
UoA share of TACC	Year (2023-24)	39,200 t
Total catch by UoC (most recent year)	Year (2023-24)	21,583 t
Total catch by UoC (second most recent year)	Year (2022-23)	22,985 t

10.1.2 Principle 1 species

Fishing method	Species	Management Area	Stock	UoC
Semi-pelagic trawl	Southern blue whiting *Micromesistius australis*	SBW 6B SBW 6I	Bounty Platform (SBW 6B) Campbell Islands (SBW 6I)	1 2

10.1.3 Principle 1 Performance Indicator scores and rationales

PI 1.1.1 – Stock status

PI 1.1.1		The stock is at a level that maintains high productivity and has a low probability of recruitment overfishing		
Scoring issue		SG 60	SG 80	SG 100
A	Stock status relative to recruitment impairment			
	Guidepost	It is **likely** that the stock is above the point of recruitment impairment (PRI).	It is **highly likely** that the stock is above the PRI.	There is a **high degree** of certainty that the stock is above the PRI.
	Met?	SBW 6B: Y SBW 6I: Y	SBW 6B: Y SBW 6I: Y	SBW 6B: N SBW 6I: Y
Rationale		For the purposes of this assessment the PRI is taken to be the soft limit in the New Zealand Harvest Strategy Standard. **SBW 6B:** There is no accepted stock assessment for SBW 6B so empirical estimates of fishing mortality rate (catch relative the catchability-adjusted survey biomass; exploitation rate) are used to assess stock status relative to the PRI (GSA2.2.4). The F_{MSY} proxy is taken to be 0.2yr^{-1}, which is an exploitation rate computed using MSE simulations (Doonan, 2017, 2023) to lead to a low probability of breaching the soft limit of 0.20 B_0. Figure 2 shows that the empirical measures of exploitation rate have fluctuated about the F_{MSY} proxy since at least 2006. An estimate of generation time for southern blue whiting is 8 (age-at-maturity plus 1/M = 3 +1/0.2; Box GSA4). **SG 60 and 80 are met** because F is likely to have been at or below F_{MSY} for at least 2 generations (GSA 2.24). **SG 100 is not met** because there is no evidence that exploitation rate has been below the F_{MSY} proxy for 3 generations. **SBW 6I:** The stock assessment estimates stock status relative to the estimate of unfished spawning biomass for a range of model configurations and identifies a base-model. MCMC sampling is used to compute posterior distributions for current spawning biomass and current spawning biomass relative to unfished spawning biomass (i.e. $B_{current}/B_0$). Based on section 10.1.1.4.2 the probability that the spawning biomass from the most recent assessment is below 0.2B_0 is < 1% **so SG 60, 80 and 100 are met.**		
B	Stock status in relation to achievement of maximum sustainable yield (MSY)			
	Guidepost		The stock is at or fluctuating around a level consistent with MSY.	There is a high degree of certainty that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.
	Met?		SBW 6B: Y SBW 6I: Y	SBW 6B: N SBW 6I: Y
Rationale		**SBW 6B:** There is no accepted stock assessment for SBW 6B so empirical estimates of fishing mortality rate (catch relative the catchability-adjusted survey biomass; exploitation rate) are used to assess stock status relative to the B_{MSY} (GSA2.2.4). The F_{MSY} proxy is taken to be 0.2yr^{-1}, which is an exploitation rate computed using MSE simulations (Doonan, 2017, 2023) to lead to a low probability of breaching the soft limit of 0.20 B_0. Figure 2 shows that the		

	empirical measures of exploitation rate have fluctuated about the F_{MSY} proxy since at least 2006. An estimate of generation time for southern blue whiting is 8 (age-at-maturity plus 1/M = 3 +1/0.2; Box GSA4). **SG 60 and 80 are met** because F is likely to have been at or below F_{MSY} for at least 2 generations (GSA 2.24). **SG 100 is not met** because there is no evidence that exploitation rate has been below the F_{MSY} proxy for 3 generations. **SBW 6I:**For the purposes of this assessment whether the stock is fluctuating at a level consistent with the biomass level corresponding to MSY for SBW 6I is based on the biomass relative to the management target for the stock of 0.4B_0. This value is larger than the estimate of B_{MSY} that would be computed from the stock assessments based on the assumption of deterministic dynamics given the assumed values for stock-recruitment steepness, but is not inconsistent with the management targets for other similar species. The stock assessment estimates stock status relative to the estimate of unfished spawning biomass for a range of model configurations and identifies a base-model. MCMC sampling is used to compute posterior distributions for current spawning biomass and current spawning biomass relative to unfished spawning biomass (i.e. $B_{current}/B_0$). Based on section 10.1.1.4.2 the probability that the spawning biomass from the most recent assessment is below the management target 0.4B_0 is < 1%, and the stock is estimated to have been above the management target since before 2000 (Figure 5) so **SG 60, 80 and 100 are met**.

Stock status relative to reference points			
	Type of reference point	Value of reference point	Current stock status relative to reference point
Reference point used in scoring stock relative to PRI (SIa)	SBW 6B: exploitation rate SBW 6I: spawning biomass	SBW 6B: 0.2yr^{-1} SBW 6I: 0.2B_0	SBW 6B: fluctuating about 0.2yr^{-1} since 2006 SBW 6I: 0.63B_0
Reference point used in scoring stock relative to MSY (SIb)	SBW 6B: exploitation rate SBW 6I: spawning biomass	SBW 6B: 0.2yr^{-1} SBW 6I: 0.2B_0	SBW 6B: fluctuating about 0.2yr^{-1} since 2006 SBW 6I: 0.63B_0

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	SBW 6B: ≥ 80 SBW 6I: ≥ 80
Information gap indicator	None

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	SBW 6B: 80 SBW 6I: 100
Condition number (if relevant)	N/A

PI 1.2.1 – Harvest strategy

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring issue		SG 60	SG 80	SG 100
A	Harvest strategy design			
	Guide post	The harvest strategy is **expected** to achieve stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80.	The harvest strategy is **responsive** to the state of the stock and the elements of the harvest strategy **work together** towards achieving stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80.	The harvest strategy is **responsive** to the state of the stock and is **designed** to achieve stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		The harvest strategy is responsive to the status of the stock. This has been shown most recently for SBW 6B where the TACC was modified in 2024 based on the information from the most recent survey and the HCR, along with input from the public (section 10.1.1.5.3) The harvest strategy for SBW 6B involves monitoring of stock status based on survey indices of abundance and the use of a harvest control rule (HCR) that was designed based on a management strategy evaluation that included the major uncertainties associated with assessment and management of this stock, including most recently (Doonan, 2023) uncertainty in whether it is possible to adequately obtain an estimate of biomass using acoustic methods. The HCR is responsive to stock status and is designed to move the stock away from the limit reference point, **which meets SG 60, 80 and 100**. The harvest strategy for SBW 6I involves monitoring (generally catches, estimates of biomass from surveys, and fishery and survey age-compositions), application of an integrated age-structured method of stock assessment (CASAL/Casal2) to determine stock status relative to the biomass reference points on which the evaluation of PI1.1.1 can be based, and use of projections to assess the consequences of the future catches. For stocks assessed to be below the soft limit, a time-constrained rebuilding analysis is required based on the NZ Harvest Strategy Standard. The HCR selected by industry involves a target level of fishing mortality corresponding to $0.4B_0$, which is achieved when spawning biomass exceeds 32% of unfished spawning biomass, with TACs set to zero at 10% of unfished spawning biomass. These elements are responsive to stock status and are designed to move stocks towards to the management target / management target range. The HCRs were selected using MSE and the MSE results suggest that spawning biomass will remain about the estimate of B_{MSY} from the stock assessment with very high probability (>80%) although B_{MSY} as inferred from the stock assessment is a low proportion of unfished biomass. Thus **SG 60, 80 and 100 are met**.		
B	Harvest strategy evaluation			
	Guide post	The harvest strategy is **likely** to work based on prior experience or plausible argument.	The harvest strategy has been **tested** and is expected to meet the objectives reflected in PI 1.1.1/ PI 1.1.1A SG80 or there is evidence that the	The performance of the harvest strategy has been **evaluated** and evidence exists to show that it is achieving the objectives

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
			harvest strategy is achieving its objectives reflected in PI 1.1.1/ PI 1.1.1A SG80.	reflected in PI 1.1.1/ PI 1.1.1A SG80, including being clearly able to maintain stocks at target levels.
	Met?	**Yes**	**Yes**	**Yes (SBW 6B); Yes (SBW 6I)**
Rationale		The harvest strategies for SBW 6B and SBW 6I are all well-defined and responsive to the state of the stock. They are consistent with the NZ Harvest Strategy Standard as well as the Fisheries Act. The TACC for SBW 6B has been modified according to the adopted HCR. Both HCRs have been evaluated using MSE and show that they are able to maintain stocks at target levels. **Both UOAs therefore achieve SG 60 and 80.** The MSE for SBW 6B provides strong (but indirect) evidence that the harvest strategy is achieving its objectives. The MSE (Doonan, 2023) reports the probabilities of the stock dropping below $0.2B_0$ over 120 years, with a threshold of 10% and considers several key uncertainties. These MSEs for SBW 6B and 6I examined the primary sources of uncertainty appropriate to the scale and intensity of the fishery (e.g. natural mortality, obtained uncertainty, process uncertainty, and productivity). HCRs have been evaluated using MSE and show that they are able to maintain stocks at target levels, so **all UOAs achieve SG 100.**		
C	**Harvest strategy monitoring**			
	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	**Yes**		
Rationale		Survey estimates of abundance are available for all UoAs on a regular basis, which provide the primary manner for tracking changes over time in biomass. The assessments for SBW 6I also make use of fishery and survey age-compositions, which are collected regularly. The medium-term research plan for deepwater fisheries (FNZ, 2024c) includes data collection at the level needed to support future assessments of SBW 6I and the application of the HCR for SBW 6B. The surveys for SBW 6B are attempted on a regular basis but often do not result in estimates of biomass. The frequency of survey is sufficient to assess the overall success of the harvest strategy. In addition, the HCR is specifically designed to account for the time since the last assessment so that infrequent successful survey lead to reduced TACCs (section 10.1.1.5.3). **Both UoAs meet SG 60**.		
D	**Harvest strategy review**			
	Guide post			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			**No**
Rationale		The HCR for SBW 6B was revised twice since it was developed by Doonan (2017) to better account for the lack of survey estimates of biomass at the expected frequency**.** The HCR for SBW 6I was revised in 2025 based on analyses in 2024**. The harvest strategy itself was not reviewed, which means that SG 100 was not met**		

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
E	**Shark finning**			
	Guide post	There is a **high degree of certainty** that shark finning is not taking place.		
	Met?	**NA**		
Rationale		Not scored - shark is not a target species in any of the fisheries concerned.		
F	**Review of alternative measures**			
	Guide post	There has been a review of **alternative measures** to minimise UoA-related mortality of unwanted catch of the target stock.	There is a **review** every 5 years of **alternative measures** to minimise UoA-related mortality of **unwanted catch** of the target stock and they are implemented as appropriate.	There is a **review** that happens every 2 years of **alternative measures** to minimise UoA-related mortality of **unwanted catch** of the target stock, and they are implemented, as appropriate.
	Met?	**Yes**	**Yes**	**No**
Rationale		There is a limited unwanted catch of southern blue whiting. The process for dealing with unwanted catch has changed over time. For example, under the new discard rules introduced by the Fisheries Amendment Act 2022 (https://www.legislation.govt.nz/act/public/2022/0056/latest/whole.html), all QMS species must be retained and landed unless the target species are subject to a Ministerial exemption or are permitted for return under observer-authorised provisions pursuant to s72 of the Fisheries Act 1996. The form in which it is landed is not specified (Vessels with meal plants onboard will meal this unwanted catch, vessels without meal plants onboard will still have to land the product.), but all QMS species landed must have an associated catch weight estimate reported by fishstock (irrespective of product type landed). Also, for any authorised discards of QMS species, a catch report must also provided (catch weight estimate, stock, area, etc.). The 2024 and 2025 landings and discard exceptions documents (FNZ, 2024d, 2025) outline the rules related to discarding, including of the target species. The measures to reduce unwanted catch have been reviewed in the last five years **so SG 60 and 80 are met.**		

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	SBW 6B: ≥ 80 SBW 6I: ≥ 80
Information gap indicator	None.

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	SBW 6B: 90 SBW 6I: 90

Condition number (if relevant)	N/A

PI 1.2.2 – Harvest control rules and tools

PI 1.2.2		There are well-defined and effective HCRs in place		
Scoring issue		SG 60	SG 80	SG 100
A	HCRs design and application			
	Guide post	**Generally understood** HCRs are **in place** that are **expected to reduce the exploitation rate as the PRI is approached.**	**Well-defined** HCRs **are in place** that **ensure** the exploitation rate is reduced as the PRI is approached, and are expected to keep the stock **fluctuating around** a target level consistent with (or above) MSY, or for key LTL species at levels consistent with ecosystem needs.	The HCRs are expected to keep the stock **fluctuating at or above** a target level consistent with MSY, or another more appropriate level **most** of the time, taking into account the ecological role of the stock.
	Met?	**Yes**	**SBW 6B No; SB6I Yes**	**SBW 6B No; SB6I No**
Rationale		The New Zealand system is well structured to ensure that catches remain below the catch limits. The harvest strategy for SBW 6I involves projections under different levels of catch and an assessment of the probability whether a stock is projected to drop below the soft limit. Stocks assessed to be below the soft limit are required to have rebuilding plans in place that rebuild them, where the time to recover is time-constrained. If current biomass is estimated to be between the target (or the threshold) and the soft limit, Stock Assessment Working Groups should work with fisheries managers to define and evaluate the TACC consequences of: (a) reducing fishing mortality proportionately to the estimated decrease in biomass below the target or threshold (or taking steps to approximate this for low information stocks), in order to avoid breaching either the soft or hard limits, and/or (b) reducing catch super-proportionately to the estimated decrease in biomass below the target or threshold (or taking steps to approximate this for low information stocks), in order to avoid breaching either the soft or hard limits (section 10.1.1.5). The industry-selected HCR reduces fishing mortality if spawning biomass is less than 32% of unfished spawning biomass, with TACs set to zero at 10% of unfished spawning biomass. Thus, generally understood HCRs are in place that are expected to reduce the exploitation rate as the PRI is approached **so SG 60 is met.** In addition, the exploitation is reduced as the PRI is approached under the selected HCR, **meaning that SG 80 is met**. The MSE-based simulations show that the SBW6I should fluctuate about 0.4B_0 However, the MSE did not account for the ecological role of the stock **so SG 100 is not met**. The HCR for SBW 6B reduces the catch limit as a function of biomass and was designed based on the probability of dropping below 0.2B_0 over 120 years not exceeding 10%. Thus, it **meets SG 60** because the HCR "acts to keep the stock above an LRP that avoids possible recruitment failure and attempts to maintain the stock at a TRP that is consistent with B_{MSY} or a similar "highly productive" level." (GSA2.5). **SG 80 is not met** because the harvest control rule for SBW 6B is based on a constant exploitation rate so the exploitation rate is not reduced as the PRI is approached.		
B	The robustness of HCRs to uncertainty			

	Guide post		The HCRs are **likely** to be robust to the main uncertainties.	The HCRs take account of a **wide** range of uncertainties including the ecological role of the stock, and there is **evidence** that the HCRs are robust to the main uncertainties.
	Met?		**Yes**	**No**
Rationale		The assessment for SBW 6I accounts for the main uncertainties related to the biology and monitoring of the stocks. Projections are usually conducted for two recruitment scenarios: (a) the entire period of estimated recruitments, and (b) recent recruitment, with parameter values selected from Bayesian posterior distributions. Uncertainty in future recruitment is usually the main source of uncertainty when conducting projections under future catches. The MSE accounts for some sources of uncertainties but not a wide range such as accounting for uncertainty in natural mortality, stock structure, and changes over time in biological parameters such as expected recruitment, etc. The design of the HCR for SBW 6B accounted for uncertainty in natural mortality, stock-recruitment steepness, the uncertainty of the future estimates of biomass, and most recently, whether estimates of biomass can be obtained at the required rate. However, several factors such as stock structure and variable survey coverage have yet to be considered in the MSE. **Both UoAs meet SG 80 but not SG 100.**		
C	**Evaluation of HCRs**			
	Guide post	There is **some evidence** that tools used or **available** to implement HCRs are appropriate and effective in controlling exploitation.	**Available evidence indicates** that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	**Evidence clearly shows** that the tools in use are effective in achieving the exploitation levels required under the HCRs.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		The primary tool in the NZ system are the TACCs are the associated monitoring programs. However, the 1996 Fisheries Act and associated regulations describe a wide array of effort-based tools (e.g. gear configuration, time and area closures, etc.), which can be used in addition to catch limits to control fishing mortality. Catches in New Zealand fisheries are at or below agreed catch limits, with monitoring tools summarized in section 7.4. While there is some evidence that catches for some deepwater species have been mis-reported in the past, there is no evidence for substantial mis-reporting. Thus, the evidence clearly shows that the tools are effective at achieving the exploitation levels consistent with the HCR. **Both UoAs achieve SG 60, 80 and 100**.		

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	SBW 6B: ≥ 80 SBW 6I: ≥ 80
Information gap indicator	None

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	SBW 6B: 75 SBW 6I: 85
Condition number (if relevant)	Condition 1

PI 1.2.3 – Information and monitoring

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring issue		SG 60	SG 80	SG 100
A	Range of information			
	Guide post	**Some** relevant information related to stock structure, stock productivity, and fleet composition is available to support the harvest strategy.	**Sufficient** relevant **informati**on related to stock structure, stock productivity, fleet composition, and other data are available to support the harvest strategy.	A **comprehensive range of information** (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals, and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	**Yes**	**Yes**	**No**
Rationale		The stocks of southern blue whiting have been subject to considerable biological and ecological research. Stock structure assumptions are based on the outcomes of the analysis of a variety of data types including genetic studies, morphology, and trends in demographic parameters such as age-structure (Hanchet, 1999). The stock structure hypotheses on which assessments and management advice are based are reviewed as part of the annual stock assessment process. Information is available on length as a function of age, weight as a function of age, and maturity at the level needed to support the stock assessments. Knowledge of the population dynamics of the species is sufficient to support the harvest strategy. The most notable gap in knowledge relates to the form and parameters of the stock-recruitment relationship, which remains assumed. There is a plan for when surveys and assessments are to be conducted (Table 7 and Table 8), but no such plan exists regarding improving biological knowledge, including stock structure and environmental impacts on population dynamics. **Thus, SG 60 and 80 are met, but not SG 100.**		
B	Monitoring			
	Guide post	Stock abundance and UoA removals are monitored and **at least 1 indicator** is available and monitored with sufficient frequency to support the harvest strategy.	Stock abundance and UoA removals are **regularly monitored at a level of accuracy and coverage consistent with the harvest strategy**, and **1 or more indicators** are available and monitored with sufficient	**All information** required by the harvest strategy is monitored with high frequency and a **high degree of certainty**, and there is a good understanding of the inherent **uncertainties** in the information (data) and the robustness of assessment and

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring issue		SG 60	SG 80	SG 100
			frequency to support the harvest strategy.	management in dealing with this uncertainty.
	Met?	**Yes**	**Yes**	**No**
Rationale		Catches of southern blue whiting are reported to Fisheries New Zealand. Reporting requirements are set out in the Fisheries (Reporting) Regulations 2001, most notably in sections 5 and 6. It is illegal under the Fisheries Act 1996 to discard any species in the Quota Management System (QMS) at-sea unless the species is listed on Schedule 6 (of the Fisheries Act), the return to the sea is recorded, and the specified conditions are met, or an MPI observer on the vessel authorizes the discard. As hoki, hake, ling and southern blue whiting are QMS species, all catch of these species is recorded and reported with a high degree of accuracy. The biomasses of the stocks are monitored using surveys. Acoustic surveys are conducted regularly (usually every three years (Table 7, Table 19), although for SBW 6B, the success of obtaining indices of biomass has been low). Overall, stock abundance of UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest strategy, and one or more indicators are available and monitored with sufficient frequency to support the harvest strategy. A three-year survey frequency is sufficient to support the harvest strategies, but is not high compared to some similar species. **Thus, SG 60 and 80 are met but not SG 100**.		
C	**Comprehensiveness of information**			
	Guide post		There is good information on all other fishery removals from the stock.	
	Met?		**Yes**	
Rationale		As QMS stocks, SBW 6B and SBW 6I are monitored across all sectors that take these species – reporting is required by the Fisheries (Reporting) Regulations 2001. Therefore, there is good information on all removals. **Thus, SG 80 is met**.		

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	SBW 6B: ≥ 80 SBW 6I: ≥ 80
Information gap indicator	None

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	SBW 6B: 80 SBW 6I: 80
Condition number (if relevant)	N/A

PI 1.2.4 – Assessment of stock status

PI 1.2.4		There is an assessment of the stock status		
Scoring issue		SG 60	SG 80	SG 100
A	Appropriateness of assessment to stock under consideration			
	Guide post		The assessment is appropriate for the stock and for the harvest strategy.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?		**Yes**	**Yes**
Rationale		SBW 6B: There is no accepted stock assessment for SBW 6B so empirical estimates of fishing mortality rate (catch relative the catchability-adjusted survey biomass; exploitation rate) are used to assess stock status and provide management advice. The primary inputs to the HCR are catches and survey estimates of biomass because the management advice is based on a simulated tested HCR, which accounted for the major uncertainties. The uncertainties associated with the input to the HCR are those associated with the survey estimates of abundance, which was accounted for (along with uncertainty regarding the frequency of surveys) in the MSE used to design the HCR and the MSE was tailored to the biology of southern blue whiting. The operating model for the MSE (along with the survey estimates of abundance) is the "assessment" for this stock and takes the biology and nature of the UoA into account, The evaluation on which PI 1.1.1 was scored was based on the survey estimates of abundance and there are available. **Thus SG 80 and 100 are met**. The most recent assessments for SBW 6I involve fitting an age-structured population dynamics model to catch and monitoring data. The parameters governing growth and stock-recruitment steepness are pre-specified. Key inputs to the assessments include prior distributions for survey catchability (Q). The assessments involve multiple model runs to identify a base model, which is then fitted using Bayesian techniques. The assessment then explores sensitivity (usually based on MPD estimation) to various assumed parameters and data set choices. The assessments then form the basis for projections under future catch scenarios, with sensitivity explored to the level of future recruitment. The assessments are configured within the CASAL/ Casal2 package to take key specifics, including the biology of the species and the nature of the fishery, into account**, so meeting SG 80 and 100.**		
B	Assessment approach			
	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	
	Met?	**Yes**	**Yes**	
Rationale		SBW 6B: There is no accepted stock assessment for SBW 6B so empirical estimates of fishing mortality rate (catch relative the catchability-adjusted survey biomass; exploitation rate) are used to assess stock status and provide management advice. The primary inputs to the HCR are catches and survey estimates of biomass because the management advice is based on a simulated tested HCR which accounted for the major uncertainties, **thus meeting SG 60 and 80**.		

PI 1.2.4		There is an assessment of the stock status		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
		The assessment for SBW 6I estimates stock status relative to the hard limit, soft limit and management target/management target range, **thus meeting SG 60 and 80**.		
C	**Uncertainty in the assessment**			
	Guide post	The assessment **identifies major sources** of uncertainty.	The assessment **takes uncertainty into account**.	The assessment evaluates stock status relative to reference points in a **probabilistic** way.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		SBW 6B: There is no accepted stock assessment for SBW 6B so empirical estimates of fishing mortality rate (catch relative the catchability-adjusted survey biomass; exploitation rate) are used to assess stock status and provide management advice. The estimates of biomass are provided with measures of uncertainty (sampling error (Figure 2). The primary inputs to the HCR are catches and survey estimates of biomass because the management advice is based on a simulated tested HCR which accounted for the major uncertainties, **thus meeting SG 60, 80 and 100**. The assessment method for SBW 6I is Bayesian, and the results are expressed in terms of posterior distributions for quantities of management interest such as current spawning biomass and current spawning biomass relative to B_0. The uncertainty in the assessment is also quantified using sensitivity tests, and some of those sensitivity tests are carried forward to form the basis for projections. The number of sensitivity tests reported in the assessment FARs and the plenary report are fairly low compared to the numbers that would be seen in other assessments for some similar methods. The assessments for SBW 6I provide the ability to assess stock status in probabilistic terms using Bayesian methods. Consequently, these assessments take uncertainty into account and evaluate stock status relative to reference points in a probabilistic way, **meeting SG 60, 80 and 100**.		
D	**Evaluation of assessment**			
	Guide post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			**No**
Rationale		SBW 6B: Management advice for SBW 6B is based on a simulation-tested HCR which explored the major uncertainties, but not one that has explored many alternative hypotheses so **SG 100 is not met**. The basic assessment method (integrated analysis) applied to SBW 6I is used for many fisheries around the world and simulation studies have led to an understanding of how assessment methods of this type perform. However, no formal evaluations of an assessment method that is identical to CASAL/Casal2 have been undertaken. In particular, no evaluation of the implications of errors in specifying priors for key parameters has been undertaken. The assessment method (CASAL/Casal2) has yet to be formally tested using simulations and hence not tested the way it is configured for SBW 6I, **thus not meeting SG 100**.		

PI 1.2.4		There is an assessment of the stock status		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
E	**Peer review of assessment**			
	Guide post		The assessment of stock status is subject to peer review.	The assessment has been **internally and externally peer** reviewed.
	Met?		**Yes**	**No**
Rationale		The assessment is reviewed by the Deepwater Working Group, which has a broad range of members, including those from government, industry and NGOs, **meeting SG 80**. However, the assessments have not recently been formally reviewed by scientists external to the New Zealand assessment process. **Thus, the SG 80 is met but not SG 100.**		

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	SBW 6B: ≥ 80 SBW 6I: ≥ 80
Information gap indicator	None.

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	SBW 6B: 90 SBW 6I: 90
Condition number (if relevant)	N/A

10.2. Principle 2

10.2.1. Principle 2 background

Deepwater and middle-depth fisheries are those generally between 12 nautical miles and 200 nautical miles offshore. Fisheries are categorised into three tiers:

- Tier 1 – high volume, high value quota management system stocks that commercial fishers usually target;
- Tier 2 –quota management system stocks that are smaller or less valuable bycatch fisheries, or are only targeted at certain times of the year; and
- Tier 3 – bycatch species that are not managed through the quota management system.

Each species or species group is split into 1–10 stocks for management purposes. However, the boundaries of biological stocks often differ from the management boundaries. In general, biological stocks tend to occur at smaller scales than management boundaries, although in a few instances the reverse is true. The southern blue whiting midwater and demersal trawl fishery is a Tier 1 fishery. The SBW stocks are managed as four fishstocks – SBW 6A, 6B, 6I and 6R. The Units of Assessment (UoAs) incorporate the fishery for SBW operating on the Bounty Plateau (SBW 6B) and Campbell Rise (SBW 6I). Characteristics of the trawl fleet targeting southern blue whiting in the UoAs are presented in Table 27.

The management of the majority of New Zealand's deepwater fisheries takes an evidence-based approach, supported by a robust and comprehensive monitoring and research programme. Information and data come from a variety of sources including independent Fisheries New Zealand Observer data, industry reporting, contracted fisheries independent research surveys, and contracted projects (FNZ, 2024). Research needs to inform management of New Zealand's deepwater fisheries are reflected in the medium term research plan (MTRP; FNZ 2024). The MTRP is a living document, updated regularly to reflect changes in management priorities where these occur, and identification of new information requirements. The MTRP should be read alongside the National Fisheries Plan for Deepwater and Middledepth fisheries (National Deepwater Plan; FNZ, 2019). Annual research plans are consulted with stakeholders through the Deepwater Fish Plan Advisory Group and reported in the Annual Operational Plans and Annual Review Reports for deepwater fisheries.

Table 27. Fleet characteristics, 2023/24, for the trawl fleet targeting southern blue whiting in SBW 6B and SBW 6I (Rob Tilney pers comm.).

Vessel Size (LOA)	Freezer with meal plant	Freezer no meal plant	Fresher	No. Vessels
> 80 m	7	0	0	7
56 - 69 m	3	0	0	3
32 - 45 m	0	0	0	0
24 - 28 m	0	0	0	0
< 24 m (inshore)	0	0	0	0
Totals	**10**	**0**	**0**	**10**

10.2.1.1. In-Scope Species

Observer coverage of deepwater fisheries is planned by financial year and is based on biological information requirements, international requirements, percentage-level coverage targets and observer programme capacity. The level of observer coverage for the different fisheries/sectors is tailored to suit the data and information requirements, including for stock assessment, compliance monitoring and ETP species captures. FNZ considers that 80-100% is

required for the SBW fishery as it is deemed by management to pose a high-risk to the protected New Zealand sea lion[1]. Observer coverage in the SBW 6B and SBW 6I fisheries over the last five years has averaged 95.4% (Table 28).

Table 28: Observer coverage in the southern blue whiting fisheries (D. Foster, FNZ, pers. comm. in SNZ, 2024).

Fishing season	Total tows	Observed tows	Observed tows (%)
2018/19	749	748	99.9%
2019/20	348	348	100.0%
2020/21	441	340	77.1%
2021/22	512	512	100.0%
2022/23	617	617	100.0%

Catch composition data from the MPI Fishery Observer Services programme between 2018-19 and 2022-23 was used to determine species categories (e.g. in-scope or out-of-scope). While observer data contained 134 individual species, southern blue whiting comprised 99% of the total catch (Table 29).

Table 29: Catch composition (t) from MPI Fishery Observer Services data for targeted tows in the southern blue whiting fishery. Green rows are QMS species, white rows are non-QMS species.

Common name	Scientific name	2018/19	2019/20	2020/21	2021/22	2022/23	5-year avg. (t)	5-year avg. (%)
Southern blue whiting	*Micromesistius australis*	28,740	13,185	14,998	22,050	23,234	20,441	99.34%
Southern boarfish	*Pentaceros richardsoni*	33	45		65	50	48	0.24%
Hoki	*Macruronus novaezelandiae*	14	7	2	73	57	31	0.15%
Ling	*Genypterus blacodes*	16	10	6	7	29	13	0.06%
Porbeagle shark	*Lamna nasus*	10	6	8	9	20	11	0.05%
Hake	*Merluccius australis*	7	8	11	6	21	11	0.05%
Javelin fish	*Lepidorhynchus denticulatus*	1	12	2	3	6	5	0.02%
Rattails	*Macrouridae*	<1	2	<1	<1	19	4	0.02%
Red cod	*Pseudophycis bachus*	<1	2	1	5	6	3	0.01%
Arrow squid	*Nototodarus gouldi, N. sloanii*	2	2	1	<1	2	2	0.01%
Silverside	*Argentina elongata*	2	2	1	<1	3	2	0.01%
Spiny dogfish	*Squalus acanthias*	1	2	1	<1	4	2	0.01%
Other (122 spp <0.01%)		9	4	3	4	11	6	0.03%
Totals		**28,835**	**13,286**	**15,035**	**22,224**	**23,462**	**20,580**	**100.00%**

Per SA3.1.1d.ii, *For fish or invertebrate species, negligible means the UoA mortalities represent less than 2% of total UoA catch, except where the total catch of the UoA is exceptionally large.* Guidance is provided that assessment teams

[1] Note: The levels of interactions with NZ sea lions are very low. However, as sea lions are considered 'high risk' from a political perspective, high observer coverage is essential to ensure good capture-rate estimations are available.

should (GSA3.1.1.d.ii), *interpret "exceptionally large" as being when the UoA catch is equal to or greater than 400,000 mt.* The fishery under assessment does not meet the criteria for exceptionally large catches, therefore any species contributing less than 2% of the total catch meets the definition of negligible. All species, excepting the target species, reflected in Table 29 meet the definition of negligible.

Per SA3.6.3 The team shall categorise a scoring element as a "main species" if:

a. The catch of a species by the UoA comprises 5% or more by weight of the total catch of all species by the UoA, or
b. The species is classified as "less resilient" and the catch of the species by the UoA comprises 2% or more by weight of the total catch of all species by the UoA, or:

    i. The team shall identify a species as "less resilient" if:

        A. The productivity of the species indicates that it is intrinsically of low resilience, and/or

        B. Its intrinsic resilience is high and existing knowledge of the species indicates that its resilience has been lowered because of anthropogenic or natural changes to its life history.

c. The species is a shark and the fishery client trades in shark fins.

Per SA3.6.4 The team shall categorise all other scoring elements that are not categorised as "main species" as "minor species".

There are no main in-scope species in the fishery under assessment, thus they are categorised as minor in-scope species, but also meet the definition of negligible (SA3.1.1d.ii).

Per SA3.2.3.2 If the team categorises the UoA's interaction with a species as "negligible", the team shall not assess this species as a scoring element unless either of the following apply:

a. The species is a marine mammal and intentional harassment or intentional killing of that species is an integral part of the fishing operation as per SA3.9.3, or
b. The team decides to score all species with which the UoA has a "negligible" interaction for a given component.

Neither of the SA3.2.3.2 caveats are applicable to the SBW fishery under assessment.

Per SA3.2.3.1 If there is insufficient information to determine whether the UoA's interaction with a species is "negligible" as per SA3.1.1.d, the team shall not categorise the interaction as "negligible".

In the case of the SBW fishery under assessment, barring the 2020/21 fishing season during which observer coverage was restricted by the COVID-19 pandemic, the fishery has 100% observer coverage (Table 28). There is therefore sufficient information to assert a high level of confidence to determine the UoAs interactions with species represented in the observed catch profile are negligible.

Per SA3.2.2, *The team shall categorise any invertebrate species that is benthic-habitat forming as a scoring element under the habitats component, irrespective of the species endangered, threatened or protected (ETP) status and irrespective of its catch proportions.* There are no criteria in the MSC Standard V3.1 or associated guidance to classify benthic habitat forming invertebrates. The assessment team takes these to be species that form aggregations, are mostly sessile, enhance complexity of physical habitats and support other biodiversity and ecosystem functions, including corals, sponges and sea pens but excluding horse mussels and anemones.

Benthic-habitat forming invertebrates will be assessed under the habitats components of the standard noting however that each species will not be assessed as a separate scoring element but as components of benthic habitats that are defined by their substratum, geomorphology and characteristic floral or faunal groups (SA3.12.2).

10.2.1.1.1 In-scope species management

The Fisheries Act 1996 provides the legal basis for managing fisheries in New Zealand, including the Minister's responsibilities for setting and varying sustainability measures such as TACCs. The management of New Zealand's deepwater fisheries is a collaborative arrangement between Fisheries New Zealand and the commercial fishing industry, represented by Seafood New Zealand's Deepwater Council (DWC).

The management of deepwater fisheries encompasses all target and bycatch stocks and the environmental effects of fishing. All 28 deepwater species/species groups in the quota management system (QMS), have been categorised into two tiers according to their commercial value and volume of catch. Tier 1 fisheries are high volume and/or high value fisheries and are the targets of dedicated fisheries. Tier 2 fisheries are typically less commercially valuable, may comprise the bycatch component of Tier 1 fisheries, or are only targeted periodically throughout the year (National Fisheries Plan for Deepwater and Middle-depth Fisheries 2019. Fisheries New Zealand Technical Paper No: 2019/03. 34 p. https://www.mpi.govt.nz/dmsdocument/3967/direct). Tier 3 species are non-QMS and are generally of little or no commercial value.

10.2.1.2 ETP/OOS Species

Information on incidental captures of ETP species reported by the MPI Observer Programme are published on the Dragonfly website (https://protectedspeciescaptures.nz/PSCv7/), which enable the incidental captures of seabirds, chondrichthyans, marine mammals and turtles by the commercial fisheries to be monitored on an ongoing basis.

Observed captures include distinction of the capture method (being warp or door, deck, net, mitigation device for trawlers), the identification method (observer, necropsy, imputation, photograph), the status (dead or alive), the fishing method and declared target species (which allows distinction between UoAs), vessel size, fishing area, location of capture, mitigation equipment used and whether the record is included in further analysis. These data are not presented in full in this report.

Per SA3.1.1d, "Negligible" has two specific definitions depending on the taxa of a species:

i. *For amphibians, birds, mammals and reptiles (out-of-scope species), negligible means the average estimates of total mortality from the UoA are less than 10 individuals per year, and the lower bound of estimated breeding population size is equal to or greater than 5,000 individuals.*
ii. *For fish or invertebrate species, negligible means the UoA mortalities represent less than 2% of total UoA catch, except where the total catch of the UoA is exceptionally large.*

Where observed captures are useful to determine the species with which the fishery interacts, raised estimates to ascertain average total annual mortality are required to determine whether the UoA(s) impacts are negligible. Further analysis is conducted through Dragonfly protected species captures that includes estimation of total captures in some fisheries for seabirds, fur seals and common dolphins. 'Cryptic mortalities' (unobserved) are not included in the estimates of total captures and any mortalities not directly associated with the fishing gear are also excluded (for example where an individual is decomposed or interacted with the deck). Whilst those total capture estimates can be a helpful indication of the trend in captures over time and the proportion of animals released alive as a proxy for uptake of mitigation and release procedures, spatially explicit risk assessments provide a more accurate estimate of fishing related captures and crucially, mortality. However in both cases, through the analytical and modelling approaches applied, the representativity of observer coverage is tested and a degree of confidence or coefficient of variation is determined for total mortality

estimate point or mean values. Where available both spatially explicit assessments raised mortality estimates and Dragonfly data protected species raised capture estimates are used during this assessment.

Seabirds

All New Zealand seabird species, with one exception, are protected species under the Wildlife Act 1953 and the Fisheries Act 1996. The one that is not protected is the black-backed gull (*Larus dominicanus*).

Information and data on incidental captures of ETP species reported by the MPI Observer Programme is published on Fisheries New Zealand's Protected Species Bycatch website, which enables captures of protected seabirds, marine mammals, sharks and turtles by the commercial fisheries to be interrogated by species, fishery type, vessel type, area and fishing year (FNZ 2021).

Between 2002–03 and 2020–21 (i.e. 19 years), there were 140 observed captures of all seabirds in southern blue whiting trawl fisheries (Figure 7 and Figure 8). Grey petrel is the species encountered most often, accounting for around 56% of captures. In 2018-19 there was an unexplained spike in petrel captures (grey petrel (x27), Snares Cape petrel (x4), Cape petrel (x3), fairy prion (x1, grey-backed storm petrel (x1) and New Zealand white-capped albatross (x1)), most of which were released alive (Figure 9).

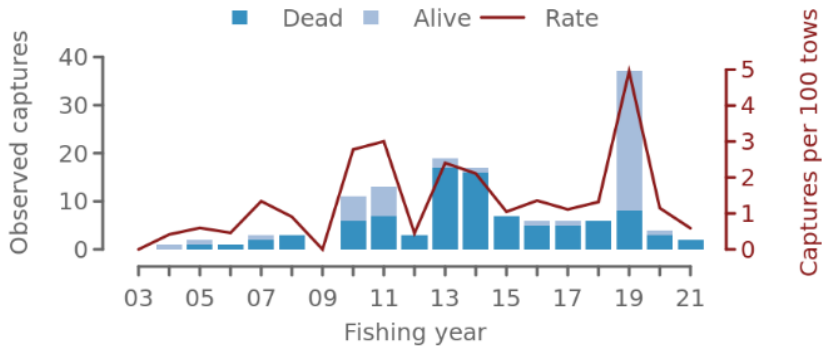


Figure 7: Observed captures, capture rate and release status of all birds in southern blue whiting fisheries 2002-03 to 2020-21. Dragonfly Data Science (2024).

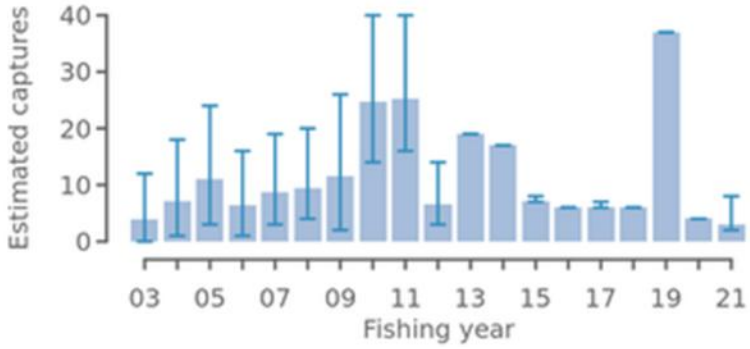


Figure 8: Estimated total incidental seabird captures (dead and live released) by southern blue whiting fisheries 2002-03 to 2019-20. Dragonfly Data Science (2024).

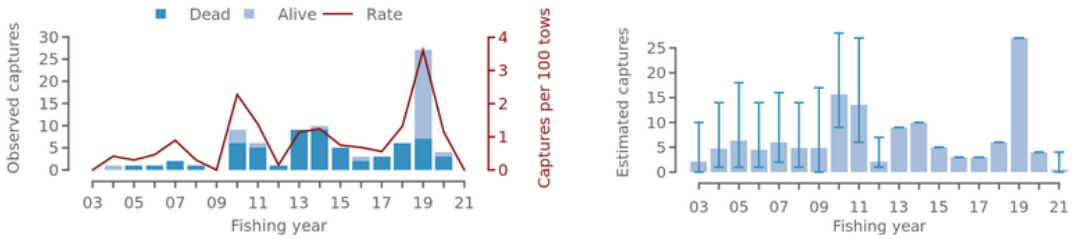


Figure 9: Southern blue whiting trawl fishery interactions with grey petrel. Left: Observed captures and capture rates. Right: Estimated captures. Dragonfly Data Science (2024).

All seabird species in New Zealand are protected (bar one) and all interactions/mortalities are required to be reported. A summary of observed interactions of southern blue whiting-targeted tows with ETP seabirds over the 5-year period 2016-17 to 2020-21 is provided below (Table 30). Data were sourced from the New Zealand Protected Species Database.

Table 30: Summary of observer-recorded interactions of southern blue whiting fisheries with ETP/OOS seabirds from 2016-17 to 2020-21. Data sourced from FNZ Protected Species Database. Observer coverage averaged 95% of tows for southern blue whiting. Population information was from the New Zealand Protected Species Captures (PSC) database Dragonfly Data Science (2024). Risk ratings are from Edwards, et al., (2023).

Common and scientific name	ETP Listing	Risk (+ 95% CI)	No. individuals in population	2016/17		2017/18		2018/19		2019/20		2020/21		Desig-nation
				Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead	
Southern black-browed albatross *Thalassarche melanophris*	Seabird IUCN-LC	0.05 (0.03-0.14)	1,4 million mature individuals		1									OOS-negligible Meets SA3.1.1di
Fairy prion (XFP) *Pachyptila turtur*	Seabird IUCN-LC	0.00 (0.00-0.00)	5 million individuals						1					OOS-negligible Meets SA3.1.1di
Grey-backed storm petrel *Garrodia nereis*	Seabird IUCN-LC		>200,000 individuals					1						OOS-negligible Meets SA3.1.1di
New Zealand white-capped albatross (XWM) *Thalassarche cauta steadi*	Seabird IUCN-NT	0.50 (0.29-1.07)	>200,000 mature individuals					1						OOS-negligible Meets SA3.1.1di
Snares Cape petrel (XCA) *Daption capense australe*	Seabird IUCN-LC	0.02 (0.00-0.13)	2 million individuals (global Cape petrel)	1				6						OOS-negligible Meets SA3.1.1di
Southern royal albatross (XRA) *Diomedea epomophora*	Seabird IUCN-VU	0.08 (0.04-0.17)	27,200 mature individuals		1								2	OOS-negligible Meets SA3.1.1di
Grey Petrel (XGP) *Procellaria cinerea*	Seabird IUCN-NT	0.02 (0.01-0.05)	151,500 mature individuals		3		6	20	7	1	3			OOS-negligible Meets SA3.1.1di

As FNZ observers are present on a very high percentage of southern blue whiting fishing events, averaging 95% coverage for the period 2016-17 to 2020-21 and increased to 100% in 2021-22 and 2022-23 fishing seasons (Table 28), the observed and mean estimated numbers of captures presented in the Protected Species Bycatch in New Zealand Fisheries database (https://protectedspeciescaptures.nz/) are very similar. The PSC website provides mean estimated captures of seabirds based on the total number of tows, the number of observed tows, observer coverage (the percentage of tows that were observed), the number of observed captures (both dead and alive), the capture rate (captures per hundred tows) per fishing year to provide the mean number of estimated total captures (with 95% confidence interval), and the percentage of tows included in the estimate. While estimated captures are not available by species, the estimates for all seabird species combined for southern blue whiting-targeted tows (Table 31) provide support for the designation of negligible for all bird species (see Table 30) based on ratios provided.

Table 31: Observed and estimated seabird interactions by the southern blue whiting fishery. Data sourced from the Protected Species Bycatch database (Dragonfly Data Science (2024) https://protectedspeciescaptures.nz/).

Year	% Tows observed	No. observed captures	Observed capture rate	Mean estimated captures	95% CI
2016/17	100.0	6	1.1	6	6-7
2017/18	100.0	6	1.3	6	6-6
2018/19	99.9	37	5.0	37	37-37
2019/20	100.0	4	1.2	4	4-4
2020/21	77.1	2	0.6	3	2-8

Edwards et al 2023 (Spatially Explicit Fisheries Risk Assessment – SEFRA) supplies the annual estimated mortality, including cryptic mortality, for each commercial fishery and fishery group, attempting to quantify the impact of commercial fisheries on New Zealand populations of 71 seabird species. This allowed the assessment team to distinguish the southern blue whiting UoAs impacts from the trawl sector as a whole (that includes hoki, hake, ling, southern blue whiting, mackerel, scampi and squid trawls). The SEFRA also provides summary statistics for the annual number of breeding pairs, proportion of adults breeding, current age at first reproduction and optimum survivorship (see Table 32 of Edwards et al 2023). In combination this permits the assessment team to determine which of the top thirty at risk seabirds have negligible interaction with the UoAs.

The SEFRA approach uses a limit reference to measure the likely risk of population decline given estimated deaths. The reference point is dependent on the intrinsic growth rate for each species. This reference point is referred to as the Population Sustainability Threshold (PST). The default objective is that Risk = 1 corresponds to a median population-stabilisation outcome of 75% of the unimpacted level (Richard et al., 2020; Fisheries New Zealand, 2020; Sharp, 2017).

The results from the 2023 SEFRA show that only southern Buller's albatross (code XBM) was estimated to have a risk metric of greater than one, indicating that current captures are higher than can be sustained by the population over the long term (Table 32), noting that the SEFRA considered captures by all trawl, longline and setnet fisheries in the EEZ. It is assumed that the bulk of captures by the UoA would have been accounted for within the category 'Large Freezer', which accounted for only 27% of all southern Buller's captures over the period 2006-07 to 2019-20 (Edwards et al., 2023).

Table 32: Annual observable captures, deaths and risk per species, ranked from highest to lowest median risk for the top 14 species. Red: risk ratio with a median over 1 or upper 95% credible limit (u.c.l.) over 2; dark orange: median over 0.3 or u.c.l. over 1; light orange: median over 0.1 or u.c.l. over 0.3; yellow: u.c.l. over 0.1. Source: Edwards et al 2023.

	C_s		D_s		Risk	
Code	Mean	95% CI	Mean	95% CI	Median	95% CI
XBM	242.2	[208.0-280.7]	728.5	[554.5-938.7]	1.19	[0.71-2.65]
XSA	299.5	[256.0-349.0]	1706.3	[1291.0-2258.5]	0.69	[0.35-1.69]
XWM	570.0	[506.3-638.3]	2634.8	[2071.1-3334.1]	0.50	[0.29-1.07]
XBP	221.8	[180.3-279.0]	256.1	[177.6-352.2]	0.49	[0.30-0.82]
XWP	89.9	[65.7-121.3]	143.3	[91.2-220.5]	0.38	[0.17-0.88]
XCI	26.9	[14.7-43.0]	61.5	[33.5-98.7]	0.27	[0.13-0.68]
XFS	253.0	[211.7-296.7]	368.1	[264.3-493.5]	0.22	[0.12-0.44]
XNB	63.2	[43.3-88.7]	173.8	[109.3-262.9]	0.19	[0.10-0.43]
XAU	33.0	[20.7-48.0]	41.9	[22.9-68.4]	0.16	[0.08-0.37]
XAN	31.8	[21.0-44.0]	38.3	[21.8-60.3]	0.16	[0.08-0.35]
XWC	895.8	[820.0-975.0]	1694.3	[1295.3-2319.9]	0.09	[0.06-0.18]
XRA	22.5	[12.7-36.3]	49.6	[25.9-84.6]	0.08	[0.04-0.17]
XNP	6.2	[1.7-14.3]	16.0	[4.1-35.0]	0.08	[0.02-0.22]
XCM	30.9	[18.7-46.7]	68.5	[37.8-117.6]	0.05	[0.03-0.14]

Species codes:

XBM southern Buller's albatross; XSA Salvin's albatross; XWM New Zealand white-capped albatross; XBP black petrel; XWP Westland petrel; XCI Chatham Island albatross; XFS flesh-footed shearwater; XNB northern Buller's albatross; XAU Gibson's albatross; XAN Antipodean albatross; XWC white-chinned petrel; XRA southern royal albatross; XNP northern giant petrel; XCM Campbell black-browed albatross.

Reviewing the 2017 (Richard et al., 2017), 2020 (Richard et al., 2020) and 2023 (Edwards et al 2023) risk assessment results indicates, overall, a continued reduction in risk, indicating that ongoing operational mitigation is resulting in beneficial outcomes. The 2020 risk assessment (FNZ, 2020) noted an overall decline in seabird interactions consistent with the declining effort in all trawl fisheries over the study period.

DOC's conservation status classifications (Robertson et al., 2013; 2017; 2021), and putative 2023 classifications, are provided below (Table 33) for the main species incidentally captured by New Zealand fisheries.

Table 33. Change in DOC threat classifications for the most prevalent incidental seabird captures in all trawl fisheries.

Species	**DOC Threat Classification 2012**	**DOC Threat Classification 2016**	**DOC Threat Classification 2021**	**DOC Threat Classification 2023**	**Status change**
Southern Buller's albatross	Naturally Uncommon	Naturally Uncommon	At Risk - Declining	Nationally Critical	Worse
Salvin's albatross	Nationally Critical	Nationally Critical	Nationally Critical	At Risk - Declining	Better
White-capped albatross	At Risk - Declining	At Risk - Declining	At Risk - Declining	At Risk - Declining	No change
Black (Parkinson's) petrel	Nationally Vulnerable	Nationally Vulnerable	Nationally Vulnerable	Nationally Vulnerable	No change

Westland petrel	Naturally Uncommon	Naturally Uncommon	Naturally Uncommon	Naturally Uncommon	No change

The median risk ratios of the top 5 most at risk seabird species from the 2015, 2017, 2020 and the 2023 Spatially Explicit Fisheries Risk Assessment (SEFRA) are provided below (Table 34). Species with a median risk ratio <1 are not expected to hinder the achievement of population management (Richard et al., 2020). While the risk ratio for southern Buller's albatross is currently assessed to be >1, it is clear that estimates for this species have been highly variable over the last four risk assessments, and it is important to note that these risk assessments consider impacts by all fisheries in New Zealand waters, not just the UoA fisheries

Table 34: Median risk ratios (and 95% CIs) and SEFRA risk classifications for captures of the top 5 seabird species across all trawl, longline and setnet fisheries in New Zealand waters.

Species	2015 risk ratio (data to 2012-13)	2017 risk ratio (data to 2014-15)	2020 risk ratio (data to 2016-17)	2023 risk ratio (data to 2019-20)	2023 SEFRA Risk Classification (all fisheries combined)	Risk Ratio Trend
Southern Buller's albatross	1.82 (0.97-3.67)	0.4 (0.22-0.69)	0.37 (0.21-0.6)	1.19 (0.71-2.65)	Very high	Variable
Salvin's albatross	3.44 (1.82-6.50)	0.79 (0.52-1.12)	0.65 (0.42-0.94)	0.69 (0.35-1.69)	High	Steady
White-capped albatross	1.10 (0.59-1.97)	0.38 (0.22-0.62)	0.29 (0.18-0.46)	0.50 (0.29-1.07)	High	Variable
Black petrel	11.34 (6.85-19.81)	1.15 (0.51-2.03)	1.23 (0.55-2.11)	0.49 (0.30-0.82)	High	Decreasing
Westland petrel	0.53 (0.21-1.38)	0.55 (0.21-1.28)	0.54 (0.26-1.12)	0.38 (0.17-0.88)	High	Steady

Analysis of the annual deaths attributed to southern blue whiting fisheries shows that the mean number of southern Buller's albatross (XBM) deaths is zero and that the fishery has very low numbers of seabird encounters overall (Table 35), (see Table 32 for species code descriptions). The associated seabird catchability and vulnerability to SBW fisheries are shown in Figure 10, Figure 11 and Figure 12.

Table 35: Southern blue whiting trawl fishery annual deaths for the top thirty at-risk species, ranked in order of highest to lowest median risk (Source: Edwards et al., 2023).

	Southern Blue Whiting	
Code	Mean	95% CI
XBM	0	[0–2]
XSA	2	[0–6]
XWM	0	[0–3]
XBP	0	[0–0]
XWP	0	[0–0]
XCI	0	[0–0]
XFS	0	[0–0]
XNB	0	[0–0]
XAU	0	[0–0]
XAN	0	[0–0]
XWC	0	[0–0]
XRA	0	[0–4]
XNP	0	[0–0]
XCM	2	[0–7]
XYP	0	[0–0]
XPP	0	[0–0]
XNR	0	[0–0]
XLM	0	[0–2]
XGM	0	[0–2]
XGP	9	[4–19]
XCA	3	[0–23]
XSI	0	[0–0]
XBS	0	[0–0]
XKS	0	[0–0]
XBC	0	[0–0]
XFC	0	[0–0]
XPS	0	[0–0]
XPV	0	[0–0]
XFX	0	[0–0]
XSH	0	[0–1]

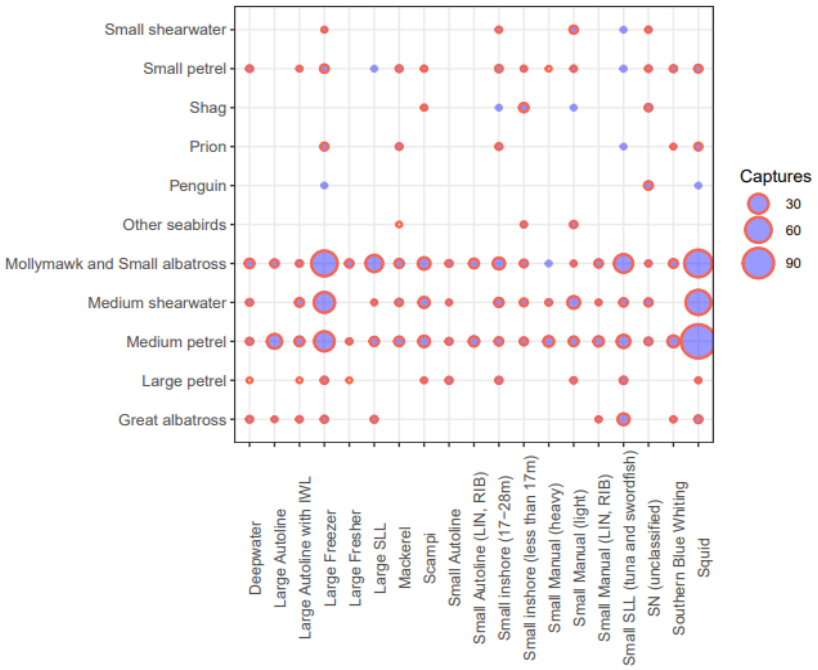


Figure 10: Model fit to observed average annual captures (C 0 f,z) per species and fishery group combination, between 2006/07 and 2019/20. Model predicted values are represented by the posterior median of the sum across species per group and shaded in blue. Empirical values are represented by red circles (Source: Edwards et al., 2023).

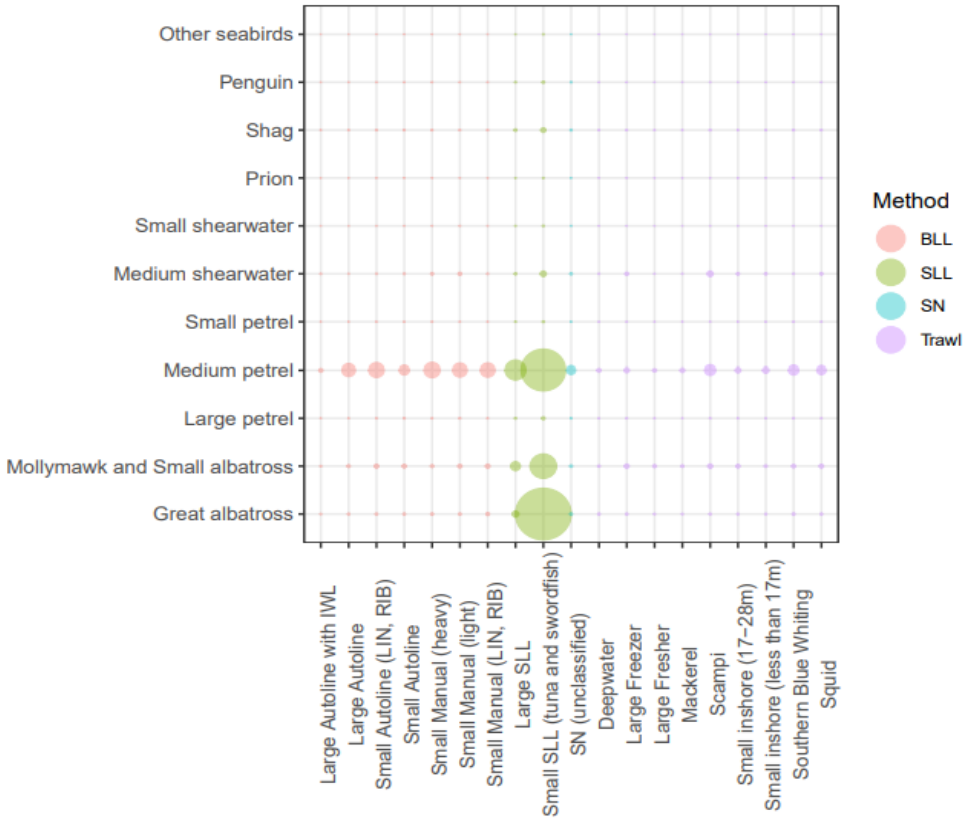


Figure 11: Catchability (qf,z) per species group and fishery group combination. Catchabilities are only comparable between methods and groups that share the same effort units (Source: Edwards et al., 2023).

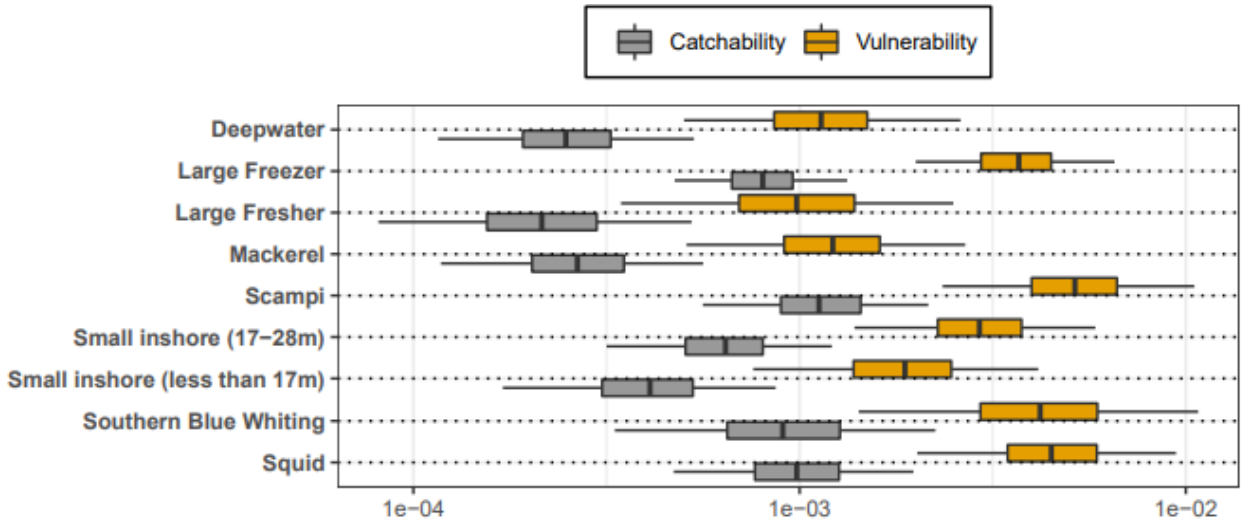


Figure 12: Marginal catchability (qf) and vulnerability (uf) per trawl fishing group assuming a geometric mean across species. Values are given on a log10-scale. Boxplots show the median, and 75% and 95% posterior quantiles (Source: Edwards et al., 2023).

Based on the level of mortality and the population size (Table 30), all seabird species with which the southern blue whiting trawl fishery UoAs interact meet the definition of negligible per SA 3.1.1dii.

Chondrichthyans

Around 21 chondrichthyan species/species groups have been observed in catches over the most recent five-year period and are caught in negligible quantities. Porbeagle (*Lamna nasus*) is the most abundant species caught, averaging 11 t per annum and comprising only 0.05% of the overall total catch. Catches of spiny dogfish (*Squalus acanthias),* the second-most abundant chondrichthyan, average less than 2 t per annum and contribute less than 0.01% of the overall catch. Both these species are managed under the Quota Management System. The other 19 chondrichthyan species observed caught occur in very negligible quantities (Table 36).

Table 36: Observed chondrichthyan catch composition (tonnes) by southern blue whiting targeted tows 2018-19 to 2022-23. Percentages based on total catch of all fish and invertebrate species. Green rows are QMS species, white rows are non-QMS species. (FNZ Research Database Rep Log 15659 in SNZ 2024).

Species	2018/19	2019/20	2020/21	2021/22	2022/23	5-Year Average (t)	5-Year Average (%)
Porbeagle shark *Lamna nasus*	9.93	6.29	7.70	9.38	20.31	10.72	0.052%
Spiny dogfish *Squalus acanthias*	1.01	1.61	0.93	0.33	4.05	1.58	0.008%
Mako shark *Isurus oxyrinchus*	0.23	0.29	0.11	0.10	1.38	0.42	0.002%

Pale ghost shark *Hydrolagus bemisi*	0.13	0.34	0.42	0.16	0.49	0.31	0.001%
Long-nosed chimaera *Harriotta raleighana*	0.10	0.12	0.06	0.03	0.30	0.12	0.001%
School shark *Galeorhinus galeus*	0.00	0.20	0.00	0.00	0.03	0.05	0.000%
Blue shark *Prionace glauca*	0.00	0.00	0.05	0.07	0.00	0.02	0.000%
Rough skate *Dipturus nasutus*	0.02	0.01	0.00	0.07	0.02	0.02	0.000%
Ghost shark *Hydrolagus* spp.	0.02	0.00	0.05	0.00	0.03	0.02	0.000%
Smooth skate *Dipturus innominatus*	0.01	0.00	0.00	0.00	0.08	0.02	0.000%
Widenosed chimaera *Rhinochimaera pacifica*	0.08	0.00	0.00	0.00	0.00	0.02	0.000%
Shark other	0.03	0.00	0.00	0.00	0.00	0.01	0.000%
Leafscale gulper shark *Centrophorus squamosus*	0.00	0.00	0.03	0.00	0.00	0.01	0.000%
Seal shark *Dalatias licha*	0.01	0.00	0.00	0.00	0.00	0.00	0.000%
Deepwater dogfish *Etmopterus* spp.	0.00	0.00	0.00	0.00	0.00	0.00	0.000%
Longnosed velvet dogfish *Centroselachius crepidater*	0.00	0.00	0.00	0.00	0.00	0.00	0.000%
Chimaera spp.	0.00	0.00	0.00	0.00	0.00	0.00	0.000%
Other sharks and dogs	0.00	0.00	0.00	0.00	0.00	0.00	0.000%
Dawson's catshark *Bythaelurus dawsoni*	0.00	0.00	0.00	0.00	0.00	0.00	0.000%
Lucifer dogfish *Etmopterus lucifer*	0.00	0.00	0.00	0.00	0.00	0.00	0.000%
Skate other	0.00	0.00	0.00	0.00	0.00	0.00	0.000%
Total	**11.56**	**8.86**	**9.35**	**10.15**	**26.68**	**13.32**	**0.065%**

Based on the level of mortality (Table 36) all shark species with which the southern blue whiting trawl fishery UoAs interact meet the definition of negligible per SA 3.1.1dii. Their status as ETP which is defined by SA3.2.5 and SA3.2.7 is not relevant due to SA3.2.3.2.

Marine mammals

All species of seal (*Pinnipedia*), whale, dolphin, and porpoise (*Cetacea*), and dugong and manatee (*Sirenia*) are protected under the Marine Mammal Protection Act 1978. A summary of observed interactions of southern blue whiting-targeted tows with ETP marine mammals over the 5-year period 2016-17 to 2020-21 is provided below (Table 37). Data were sourced from the New Zealand Protected Species Database.

Table 37: Summary of observer-recorded interactions of the southern blue whiting fisheries with marine mammals from 2016-17 to 2020-21. Observed captures in numbers of individuals. Data sourced from FNZ Protected Species Database. Observer coverage averaged 95% of tows. Population information sourced from Abraham, et al., (2017).

Common and scientific name	ETP Listing	Risk (+ 95%CI)	No. individuals in population	2016/17		2017/18		2018/19		2019/20		2020/21		Desig-nation
				Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead	
New Zealand sea lion *Phocarctos hookeri*	Mammal IUCN-EN	0.10 (0.05-0.19)	11,650 individuals				2			1		2	2	OOS-negligible Meets SA3.1.1di
New Zealand fur seal *Arctocephalus forster*	Mammal IUCN-LC	0.31 (0.13–0.64)	100,000 mature individuals	1	10	1	16		11		8		3	OOS-negligible Meets SA3.1.1di

New Zealand sea lions

The indigenous New Zealand sea lion (*Phocarctos hookeri*) has a population size of approximately 12,000 and has four known breeding sites, the largest being at the Auckland Islands. Other sites are Campbell Island, Stewart Island and the southern tip of South Island (Figure 13).

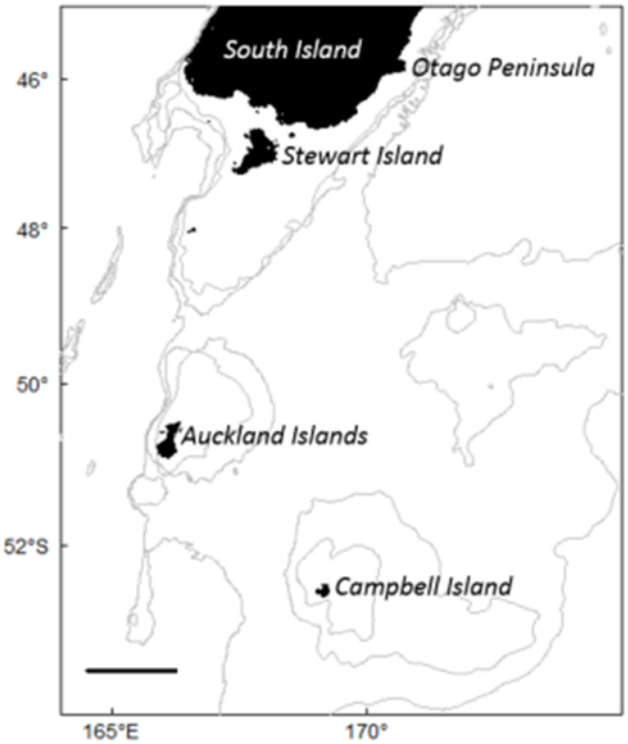


Figure 13: Location of New Zealand sea lion breeding populations on Auckland Islands, Campbell Island, Stewart Island and the southern tip of South Island (after Roberts & Doonan, 2016).

Annual pup counts at the Auckland Islands are used to index trends in the sea lion population. Pup counts halved between 1998 and 2009, prompting a risk assessment to be undertaken (Roberts et al., 2016) and the development

and implementation of a New Zealand Sea Lion/ràpoka Threat Management Plan in 2017 (DOC, 2017) with a vision to "promote recovery and ensure the long-term viability of New Zealand sea lions".

While their conservation threat status is 'Nationally Vulnerable' (Baker et al., 2019; FNZ, 2022c), the mandatory use of Sea Lion Exclusion Devices (SLEDs) under the southern blue whiting Operational Plans and agreed Operational Procedures followed by vessels, has arrested captures. The estimated number of annual fishing-related deaths has declined from around 160 in the mid-1990s to an average of three over the last decade. Annual pup production has been relatively stable over the 13-year period 2008-09 to 2021-22, although large, unexplained inter-annual fluctuations continue to feature (Young & Manno, 2022). Pup production declined by 24% in 2022-23 (Figure 14), which triggered a review of the New Zealand sea lion Threat Management Plan (DOC & MPI 2017). No estimate of pup production was obtained in 2020-21 due to Covid-19-related cancellation of the field season.

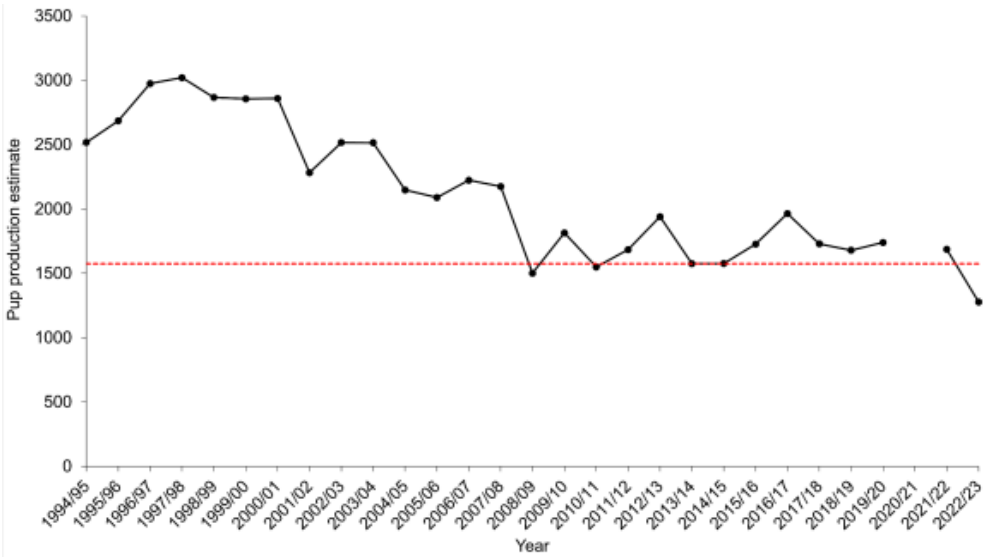


Figure 14: Total estimated sea lion pup production at the Auckland Islands colonies 1994-95 to 2022-23. The dashed line represents the minimum count of 1 575 pups set to trigger reviews of the New Zealand sea lion Threat Management Plan (DOC & MPI, 2017).

The status of New Zealand sea lion (*Phocarctos hookeri*) has improved from Threatened – Nationally Critical to Threatened – Nationally Vulnerable (Baker et al 2019). The overall rate of population decline has slowed to 29%, though a precautionary approach is taken, and the decline is estimated at >30% over three generations. Populations are stable or increasing at most breeding locations. Pup production is presently increasing at both Stewart Island and mainland New Zealand but appears to be approximately stable (i.e. ± 10%) at both the Auckland Islands and Campbell Island.

Two data sets were used in estimating the number of mature females (Roberts 2017, Roberts 2018). These two estimates combined provide a total estimate of mature females of 3570 (Baker et al 2019). Assuming a female to male sex ratio of 1:1 (based on a known birth rate ratio of 1:1 and broadly consistent survival rates between sexes), this would lead to a total estimate of the number of mature individuals (i.e. females and males) of 7140. Mackenzie et al 2022 estimated the New Zealand population size at 11 743 individuals.

For New Zealand sea lion the following results from Mackenzie et al 2022:

r_{max}: 0.102 (95% credible interval, 0.070 - 0.131)

Derived annual deaths: 33.46 (95%, 26.9 - 42.1)

Predicted exploitation rate: stock 0.29 (95%, 0.2-0.4)

Predicted equilibrium status: stock 97.09 (95%, 95.9 - 97.9)

The PST estimated for NZ sea lion by Abraham et al 2017 was 257.6 (95 c.i. 168.9–379.8). The risk ratio is the number of annual potential fatalities in fisheries to the Population Sustainability Threshold (PST) with New Zealand sea lion found to have a mean ratio of 0.10 (95% c.i. 0.05–0.19) (Abraham et al. 2017).

The observed number of captures has averaged 1.4 per annum by southern blue whiting fisheries (Figure 15). These captures are well below the annual Fishing-Related Mortality Limit (FRML). Due to the ongoing low capture rate, the sea lion FRML was rescinded in April 2024.

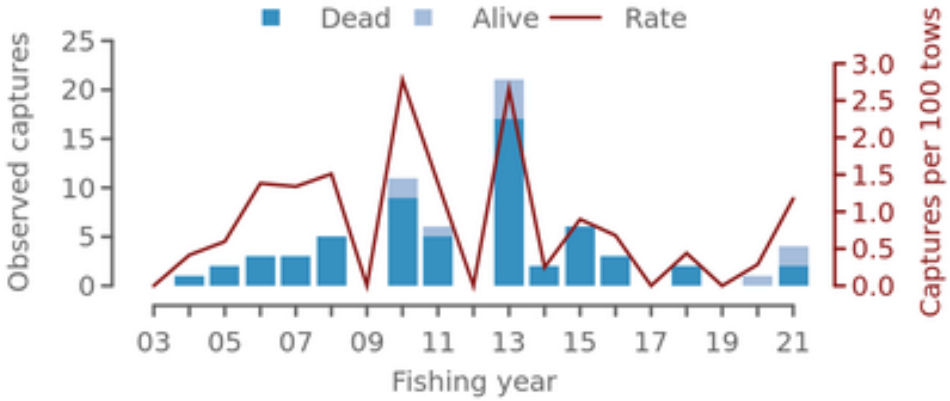


Figure 15: Observed captures and capture rates of New Zealand sea lion by southern blue whiting fisheries 2002-03 to 2020-21. Dragonfly data science.

Based on the level of mortality and the population size, New Zealand Sea Lion interactions with the southern blue whiting trawl fishery UoAs meets the definition of negligible per SA 3.1.1di.

New Zealand fur seal

New Zealand fur seals (*Arctocephalus forsteri*) are classified as 'Not threatened' by the New Zealand Department of Conservation (Baker et al 2019) and as 'Least Concern' by the International Union for Conservation of Nature (Chilvers and Goldsworthy, 2015).

Abrahams et al 2017 multi-species marine mammal risk assessment showed the level of risk from fisheries to the New Zealand fur seal is unlikely to pose a threat to the NZ fur seal population sustainability. Briefly the SEFRA method uses spatially resolved species density layers and the location, and amount, of observed fishing effort to quantify the 'overlap' between the protected species and observed fishing activities, which is then used in combination with observed species captures to estimate the 'catchability' of the species in different fisheries. Once catchability has been estimated, the total number of captures can be predicted for the set of commercial effort of interest. Further calculations are used to convert the number of captures to a predicted number of deaths, enabling quantification of a risk metric for the impact of fishing-related deaths on the protected species populations.

The PST estimated for NZ fur seal by Abraham et al 2017 was 3393.7 (95 c.i. 1644.0-6414.0). The risk ratio is the number of annual potential fatalities in fisheries to the Population Sustainability Threshold (PST) with New Zealand fur seal found to have a mean ratio of 0.31 (95% c.i. 0.13-0.64) (Abraham et al. 2017).

An updated SEFRA by Mackenzie et al 2022 did not use PST, hence their results are not directly comparable with those of Abraham et al. (2017). They produced updated intrinsic rate of population increase (r_{max}) estimates for species where demographic parameters were available, predicted annual exploitation rates (predicted fishing-related death per individual in the population) and determined the equilibrium status metric of population impact (proportion of carrying capacity K after long-term constant exploitation rate).

For New Zealand fur seal the following results from Mackenzie et al 2022:

r_{max}:	0.074 (95% credible interval, 0.040 - 0.115)
Derived annual deaths:	1,172.35 (95%, 893.3 - 1,541.5)
Predicted exploitation rate:	stock 0.60 (95%, 0.3-1.0), NZ population 0.95 (95%, 0.5-1.5)
Predicted equilibrium status:	stock 91.38 (95%, 84.1 - 96.0), NZ population 86.40 (95%, 74.9 - 93.7)

Over the recent 5-year period 2016-17 to 2020-21 the fur seal capture rate by southern blue whiting fisheries has reduced to a low level, averaging just below 10 per annum at a capture rate of 2.1 per 100 tows. The very high observer coverage, averaging 95%, provides a high level of confidence in the results (Figure 16).

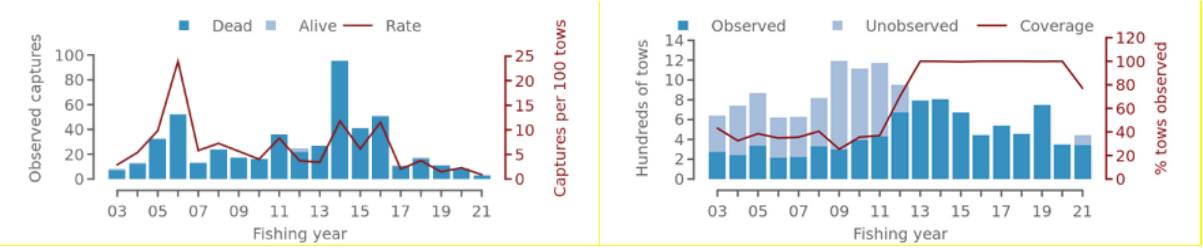


Figure 16: Observed captures and capture rates (Left) and fishing effort and observer coverage (Right) of New Zealand fur seal by southern blue whiting fisheries from 2002-03 to 2020-21. Dragonfly data science.

Based on the results of both Abraham et al 2017 and Mackezie et al 2022, it would appear that the risk to New Zealand fur seal from all commercial fisheries in New Zealand is below the level that would reduce the population to a level below 50% of the carrying capacity (defined as favourable conservation status per SA3.9.2.1).

For the southern blue whiting UoAs the impact meets the definition of negligible per SA3.1.1di as mortalities have averaged 9.6 individuals per annum from 2016/17-2020/21 and the estimated population size for the New Zealand fur seal (NZ and Australia) is 192 632 (Mackenzie et al 2022) and the population size within New Zealand (i.e. the portion of the population managed within the geographic boundary of New Zealand) is 126 945 (Abraham et al 2017).

10.2.1.2.1 ETP/OOS Management

A range of management measures, including industry-led, non-regulatory initiatives, are employed to monitor environmental interactions in deep water fisheries and to reduce the risk of any adverse effects on protected species

populations. Measures relating to the deepwater industry's monitoring of ETP species are described in DWG's Operational Procedures (OPs) and Vessel Management Plans (VMPs), (DWG, 2024), which include:

- Southern Blue Whiting Operation Plan
- Marine Mammals OPs
- Reporting OPs
- Seabirds OPs
- Sharks OPs
- Benthic OPs (implemented in 2021-22)
- Deepwater Trawl VMP (template)
- Trawl Vessel Protected Species Risk Management Plan (template)
- Ten Commandments for:
    - Marine Mammals
    - Saving Seabirds
    - SQU 6T & SBW 6I Fisheries
- Ten Golden Rules for Protected Species Reporting.
- Vessel Notice - Sea Lion Risk Management Actions SBW 6I - Campbell Island (2023)

The Operational Procedures (OPs) for each species-group include elements of identifying and mitigating risk, safe handling and release following capture, reporting and event response, audit and review. They are monitored and administered by the Deepwater Council (DWC) with performance and conformance audited by Fisheries New Zealand Observers. The OPs are underpinned by New Zealand legislation and National Plans of Action (NPOAs).

Key legislation includes :

- Seabird Scaring Devices Regulations 2006: requires trawlers over 28 m LOA to deploy devices to reduce warp risk to seabirds
- Fisheries Act 1996: requires that:
    - measures are taken to avoid, remedy or mitigate any adverse effects of fishing-related mortality on any protected species.
    - This Act also includes requirements to report captures of protected species.
    - All catch be reported
    - All QMS-species be landed if taken, except where Schedule 6 applies and provides for their return to the sea (e.g. blue, mako, porbeagle, rig, school shark and spiny dogfish)
    - Adherence to the prohibition of Shark Finning
- Wildlife Act 1953 states it is an offence to deliberately take, or attempt to take, harass, injure, mutilate or retain all or any part of any Protected Species
- Animal Welfare Act 1999
- Marine Mammals Protection Act 1978: the accidental capture of any marine mammal is permitted provided that the capture is reported to the appropriate authority without delay. It is an offence to accidentally capture a marine mammal and to not report it.

National Plans of Action

New Zealand has a responsibility to act in accordance with the objective of International Plans of Action for Seabirds and Sharks. The two NPOAs applicable to deepwater fisheries are:

NPOA-Sharks 2022 (FNZ, 2022)

New Zealand's first NPOA-Sharks was in 2008 and the most recent one was NPOA-Sharks 2013. The 2013 NPOA has been reviewed and the NPOA-Sharks 2022 has been consulted on and a draft NPOA circulated. The final NPOA-Sharks 2022 is imminent with consultations having closed in September 2022.

The NPOA sharks 2022's vision is New Zealanders work toward ensuring the long-term viability, biodiversity and functional role of sharks, and that any utilisation of sharks in Aotearoa is sustainable. Its seven goals are:

1) Maintaining biodiversity and ecological long-term viability of shark populations;
2) Ensuring full utilisation of sharks and maintaining the prohibition on shark finning in New Zealand;
3) Avoiding protected and unwanted shark captures, and maximising post release survival;
4) Minimising anthropogenic effects other than direct fisheries impacts;
5) Better Integration of Tangata Whenua Perspectives and Value;
6) International engagement through enhanced monitoring, data collection and information sharing; and
7) Continuous improvement in the research, data and information to conserve and manage sharks, guided by the SEFRA framework and conservation threat status.

NPOA Seabirds (FNZ, 2020)

New Zealand's first NPOA was published in 2004 and a revised NPOA-Seabirds published in 2013. The NPOA Seabirds 2020 is New Zealand's third iteration of a national plan of action.

The NPOA Seabirds 2020's vision is New Zealanders work towards zero fishing-related seabird mortalities. Its four goals are:

1) Avoiding bycatch — effective bycatch mitigation practices are implemented in New Zealand fisheries;
2) Healthy seabird populations — direct effects of New Zealand fishing do not threaten seabird populations or their recovery;
3) Research and information — information to effectively manage direct fisheries effects on seabirds is continuously improved; and
4) International engagement — New Zealand actively engages internationally to promote measures and practices that reduce impacts on New Zealand seabirds.

10.2.1.3 Habitats

According to the MSC Standard V3.1, the assessment of the habitats component of the Standard shall be done in relation to the effects of the UoA on the structure and function of the habitats impacted by the UoA.

As per MSC V3.1 SA3.2.2 *The team shall categorise any invertebrate species that is benthic-habitat forming as a scoring element under the habitats component, irrespective of the species endangered, threatened or protected (ETP) status and irrespective of its catch proportions*. This contradicts SA3.12.1a *The team shall score each habitat as a separate*

scoring element as per SA3.13.2 (MSC V2.01) and SA3.12.2 (MSC V3.1): If a benthic habitat is being assessed, the team shall recognise habitats based on the following habitat characteristics:

a) Substratum – sediment type.
b) Geomorphology – seafloor topography.
c) Biota – characteristic floral and/or faunal group(s).

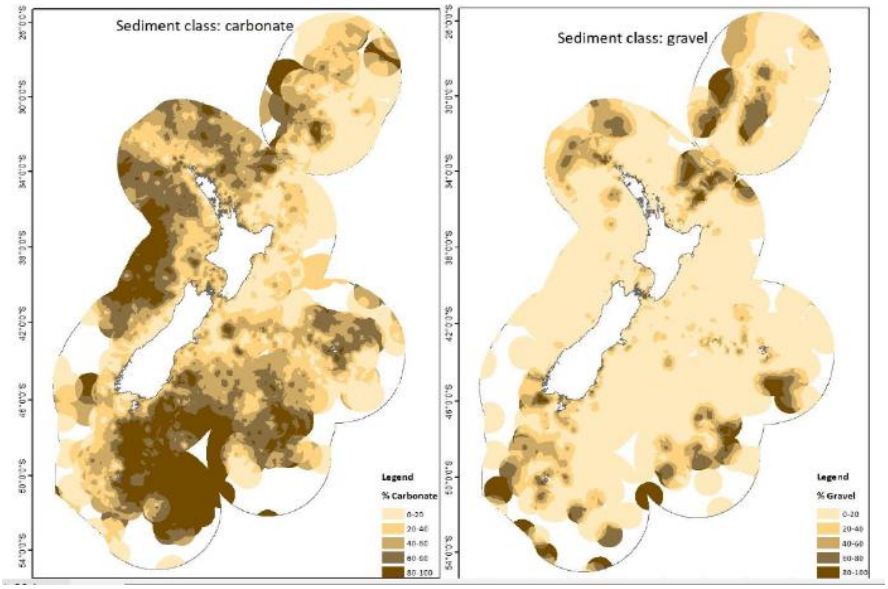
Habitats, as defined by the MSC Standard are not single benthic habitat-forming invertebrate species, rather they are a combination of substratum, geomorphology and community of biota. In response to this apparent contradiction the assessment team follow that all benthic habitat-forming invertebrates are listed as scoring elements but distinct broader habitat types are assessed under PI2.3.1.

MSC V3.1 SA3.12.6 stipulates that "When assessing the status of habitats and the impacts of fishing, the team shall consider the full area managed by the local, regional, national, or international body(ies) responsible for fisheries management in the area(s) where the UoA operates, otherwise known as the "managed area".

> and SA3.12.6.4 (V3.1) "If a habitat's range extends beyond the "managed area", the team shall consider the habitat's range both inside and outside the "managed area"."

Habitat distribution

Broad scale habitat maps indicate that sand, mud and gravel are the primary habitat types encountered by southern blue whiting fisheries (Figure 17). Surficial sediment (>40% classes) in the main fishery areas in depth zone 200-800m show that sand and carbonate are the dominant sediments across the fishery areas (Table 38).



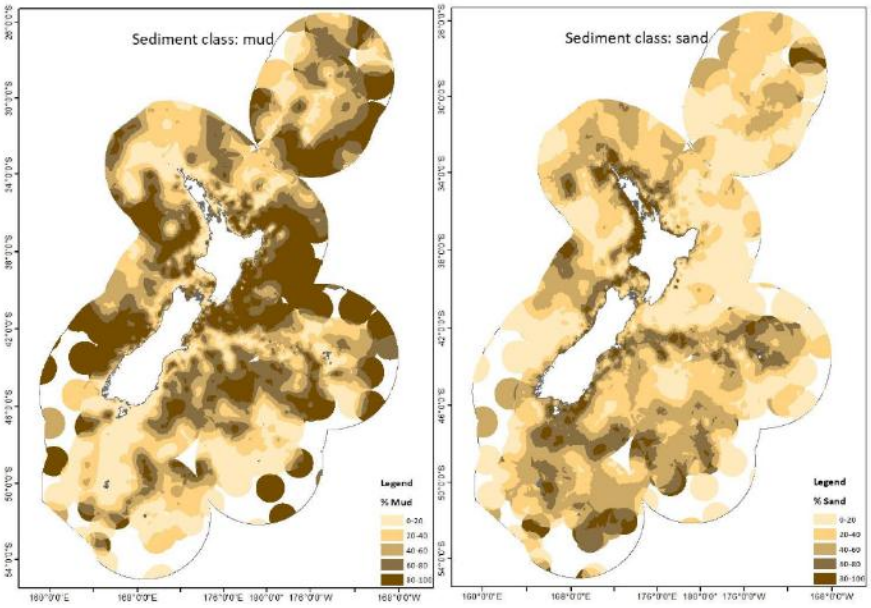


Figure 17: The interpolated distribution (%) of carbonate, gravel, mud, and sand based on the nzSEABED database. Source: (MacGibbon & Mules, 2023).

Table 38: Percentage overlap of the seafloor area of the substrate classes by the fishable area 1990–2021 and 2021 for all Tier 1 stocks. For gravel, mud, and sand, the percentage classes total 100% of the fishable area, while for carbonate the percentage represents the proportion that is carbonate versus noncarbonate. Source: (MacGibbon & Mules, 2023).

Substrate	Class (%)	Class area within fishable area (km²)	1990–2021 overlap (%)	2021 overlap (%)
Carbonate	0–20	138 252.7	63.5	14.9
Carbonate	20–40	282 469.8	48.4	9.0
Carbonate	40–60	275 070.0	33.6	4.3
Carbonate	60–80	288 732.7	22.8	3.0
Carbonate	80–100	369 402.8	21.2	2.2
Gravel	0–20	1 037 250.7	35.0	5.9
Gravel	20–40	188 550.0	37.4	5.7
Gravel	40–60	77 886.4	25.8	2.6
Gravel	60–80	26 682.0	22.1	0.7
Gravel	80–100	14 188.5	11.0	2.9
Mud	0–20	387 549.1	38.8	6.1
Mud	20–40	323 852.0	34.8	5.2
Mud	40–60	299 719.3	34.8	6.3
Mud	60–80	233 123.9	27.9	4.7
Mud	80–100	109 712.9	26.3	3.9
Sand	0–20	142 639.8	28.9	4.5
Sand	20–40	348 482.0	26.5	4.3
Sand	40–60	482 383.1	34.6	5.4
Sand	60–80	303 832.8	40.3	6.3
Sand	80–100	77 166.5	49.3	10.5

Benthic habitats and communities are impacted to varying extents by the impact of trawling depending on a range of factors, including:

- the type of gear used (design and weight) and the towing speed,
- features of seafloor habitats, including their natural disturbance regimes,
- the species present, and
- the frequency and intensity of fishing.

Previous studies show that recovery rates are slowest in stable, muddy or structurally complex habitats compared to sandy sediment communities that show little change after two to three bottom trawl passes per year (Kaiser, et al., 2006). Hiddink, et al., (2017) found that trawl gears removed 6–41% of faunal biomass per pass (average 15.5%), and that recovery times post-trawling were 1.9–6.4 years depending on the fisheries and environmental context. Of the trawl gears examined, otter trawls caused the least depletion, removing 6% of biota per pass and penetrating the seabed on average down to 2.4 cm (Hiddink, et al., 2017). Pitcher, et al., (2022) also estimated trawl depletion rates of benthic communities in mud, sand, and gravel habitats for a range of trawl gear types, average depletion rates ranged from 0.047 to 0.261 depending on gear and habitat. Otter trawls caused the lowest depletion followed by beam trawls and towed dredges and depletion rates were lower in sand than in gravel and mud (Pitcher, et al., 2022). Some habitat-creating organisms require substantial periods to recover after trawling (e.g., > 8 years for some sponges, >10 years for corals, see Kaiser, et al., 2006)

More Sensitive Habitats

All black, gorgonian, stony, and hydrocorals are protected under the Wildlife Act 1953. However, SA3.2.2 requires that all benthic habitat forming species should be assessed under habitats. Therefore, benthic habitat forming species including protected corals are assessed under habitats and considered more sensitive habitats.

For the purpose of this assessment, less sensitive habitats are considered to be gravel, mud, and sand, upper and mid-slope, with more sensitive habitats designated as sand covered hard substrate with emergent fauna (i.e., sponges, bryozoans, corals) in line with FAO guidelines.

A Benthic Optimised Marine Environment Classification (BOMEC) was developed to identify ecologically distinct New Zealand bioregions (i.e., broad scale delineation of spatial patterns) (Figure 18), (Leathwick, et al., 2012). BOMEC is restricted to depths <3000 m depth and was developed using benthic community and environmental data, including sediment type. A BOMEC comprised of 15 bioregions across the NZ EEZ was used to assess the potential impact of bottom trawling on these bioregions.

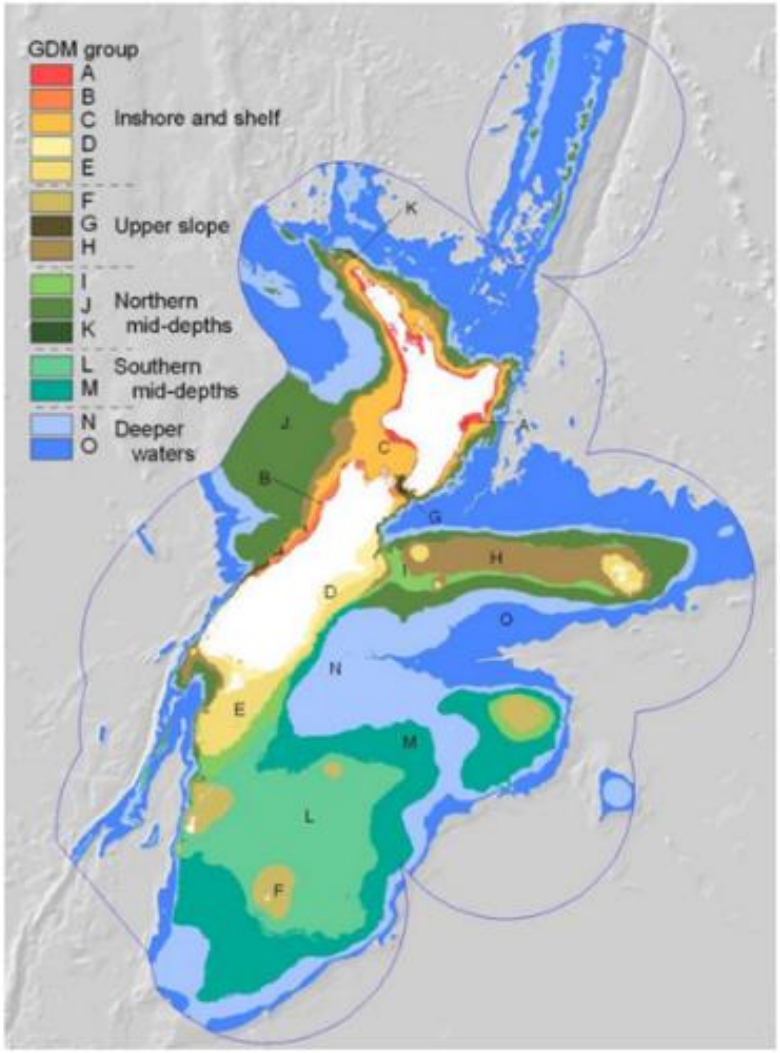


Figure 18: Map of the distribution of 15-class Benthic-Optimised Marine Environment Classification (BOMEC) classes. Source: Leathwick, et al., (2012).

Fishing overlap

Geospatial position reporting (GPR) devices, for position reporting, are required to be installed and operational on all commercial fishing vessels. Data are therefore available to monitor the trawl footprint of the southern blue whiting fisheries.

The trawl footprint of New Zealand's trawl fisheries is assessed annually to monitor the scale and intensity of their interactions with the benthic habitat. The latest trawl footprint report released in July 2023 presents the spatial analysis of bottom-contacting trawl effort by commercial trawlers within the New Zealand 200 nm Exclusive Economic Zone and Territorial Sea (EEZ+TS), in waters open to trawling down to 1,600 m depth (the 'fishable area'), for different time periods.

MacGibbon & Mules (2023) analysed data from 1989-90 to 2021 to examine the extent of bottom contact by commercial trawling. Hoki data accounted for the majority of the annual tow data, with 447,248 tows for the time period and more than 20,000 tows in each year between 1996 and 2003. The data show there has been a major reduction in the overall footprint from the early 2000s, driven mainly by the reduced hoki TACC following completion of the fish-down period. The number of bottom-contacting trawl tows by the southern blue whiting fisheries has been consistently low over the entire period (Figure 19).

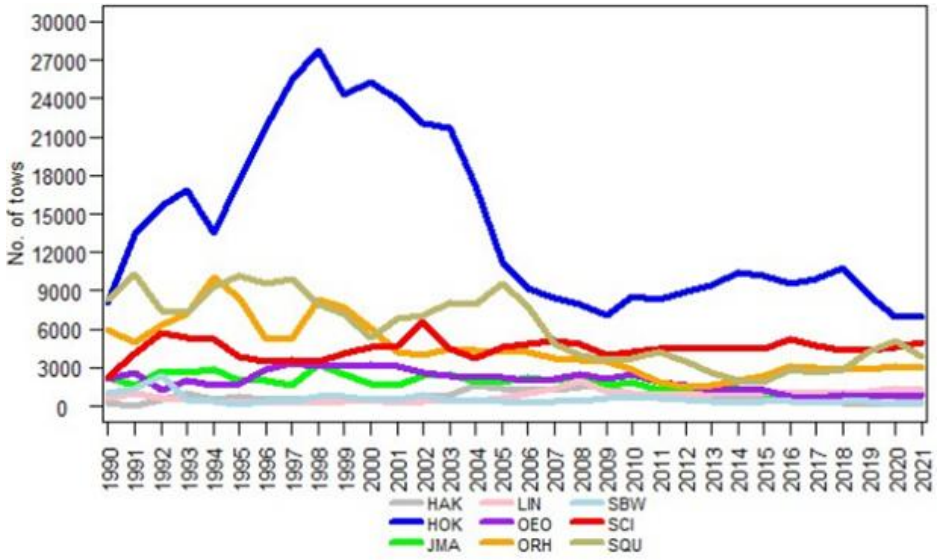


Figure 19: The number of bottom-contacting tows by year for the Deepwater Tier 1 species (MacGibbon and Mules, 2023).

MacGibbon & Mules, (2023) examined the aggregate number of 25 km^2 cells in the fishable area contacted by Tier 1 species as an indicator of fishery footprint, with southern blue whiting contacting 11% of the fished cells over all years and 3% in 2020-21 (Table 39).

Table 39: Percentages of the total number of cells contacted, aggregate area (km^2) and footprint (km^2) for Tier 1 targets 1990-2021 (left) and for 2021 (right). Note: the footprint of some target species overlap. Source: (MacGibbon & Mules, 2023)

Target	Percent of total Tier 1 for 1990–2021			Percent of total Tier 1 for 2021		
	Cells	Aggregate area	Footprint	Cells	Aggregate area	Footprint
HAK	12	2.8	6.4	5	1.1	1.8
HOK	58	55.1	50.9	38	52.1	50.5
JMA	17	6.2	14.3	14	4.7	6.9
LIN	19	2.2	8.7	8	3.5	3.9
OEO	15	1.3	5.3	5	0.5	0.7
ORH	25	4.1	13.4	22	9.1	13.4
SBW	11	1.3	7.1	3	0.8	1.3
SCI	17	6.7	6.4	8	12.7	11.3
SQU	22	20.5	12.9	11	15.6	10.1
Total	36 466	3 396 811.2	328 669.4	8 477	75 668.0	40 622.8

The indicative bottom contact by depth profile shows that SBW trawls are primarily in the 400 - 600m depth zone and that the trawl footprint overlap in this depth zone is only 0.21% of the area (Table 40). Analysis of trawl tow data showed that the median fishing depth for bottom-contacting tows was 430 m for the period 1989-90 to 2022-23 and was 460 m for the most recent year i.e. 2022-23 (L. Easterbrook-Clark, GNS Science, pers. comm.).

Table 40: The total area of the seafloor in each depth zone within 'fishable' waters, all depth zones ≤ 1600 m combined, and the percentage of each depth zone covered by the 2021 trawl footprint for each Tier 1 target species and for the Tier 1 targets combined. – indicates no overlap (MacGibbon & Mules, 2023).

Depth zone (m)	Area (km^2)	Footprint area overlap (%)									
		HAK	HOK	JMA	LIN	OEO	ORH	SBW	SCI	SQU	Tier 1
< 200	249 341.90	0.01	0.06	1.10	0.05	–	0.00	–	0.01	1.09	2.30
200–400	98 295.90	0.04	0.73	0.06	0.32	–	0.00	0.01	2.73	1.07	4.81
400–600	253 939.20	0.13	5.66	0.00	0.37	–	0.00	0.21	0.75	0.12	7.07
600–800	185 161.60	0.18	2.65	0.00	0.12	0.00	0.06	–	0.00	0.00	2.94
800–1000	166 645.00	0.01	0.20	–	0.00	0.09	1.91	–	0.00	0.00	2.22
1000–1200	144 930.50	0.00	0.00	–	–	0.08	1.13	–	–	–	1.21
1200–1400	168 376.80	–	0.00	–	–	0.01	0.23	–	–	–	0.24
1400–1600	124 988.80	–	0.00	–	–	0.00	0.07	–	–	–	0.08
≤ 1600	1 391 679.70	0.05	1.47	0.20	0.12	0.02	0.39	0.04	0.33	0.29	2.86

The fishable area in the New Zealand EEZ (i.e. waters <1 600 m depth) is 1,391,680 km^2, of which the southern blue whiting fisheries have contacted 23,467 km^2 over the period 1989-90 to 2020-21 (i.e. 1.7%), (Table 41). In 2020-21, the most recent year of the analysis, southern blue whiting fisheries contacted only 547 km^2 (i.e. 0.04% of the fishable area), showing that a considerably reduced area of the seabed is now being contacted.

Table 41: The total seafloor area in each depth zone within 'fishable' depth zones ≤ 1600 m, and the percentage of each depth zone contacted by the 1990–2021 Tier 1 footprint (MacGibbon & Mules, 2023).

Depth zone (m)	Area (km^2)	Footprint area overlap (%)									
		HAK	HOK	JMA	LIN	OEO	ORH	SBW	SCI	SQU	Tier
< 200	249 341.90	0.1	5.3	15.8	1.2	0.0	0.1	0.0	0.7	9.9	27.4
200–400	98 295.90	1.2	18.6	6.1	7.0	0.1	0.2	3.7	9.5	8.0	36.7
400–600	253 939.20	5.1	28.0	0.4	4.8	0.1	0.2	7.6	3.6	2.1	40.1
600–800	185 161.60	3.0	28.6	0.2	3.3	0.7	0.9	0.2	0.2	1.7	31.3
800–1000	166 645.00	0.6	5.3	0.0	0.2	5.2	12.2	0.0	0.1	0.3	21.4
1000–1200	144 930.50	0.0	1.3	0.0	0.0	3.5	9.6	0.0	0.1	0.2	13.3
1200–1400	168 376.80	0.0	0.3	0.0	0.0	0.9	3.2	0.0	0.0	0.1	4.1
1400–1600	124 988.80	0.0	0.3	0.0	0.0	0.3	1.5	0.0	0.1	0.1	2.0
≤ 1600	1 391 679.70	1.5	12.0	3.4	2.1	1.3	3.2	1.7	1.5	3.0	23.6

Figure 20 illustrates the probability of capture distribution for southern blue whiting, based on the probability of capture (%) of a fish in a standardised trawl.

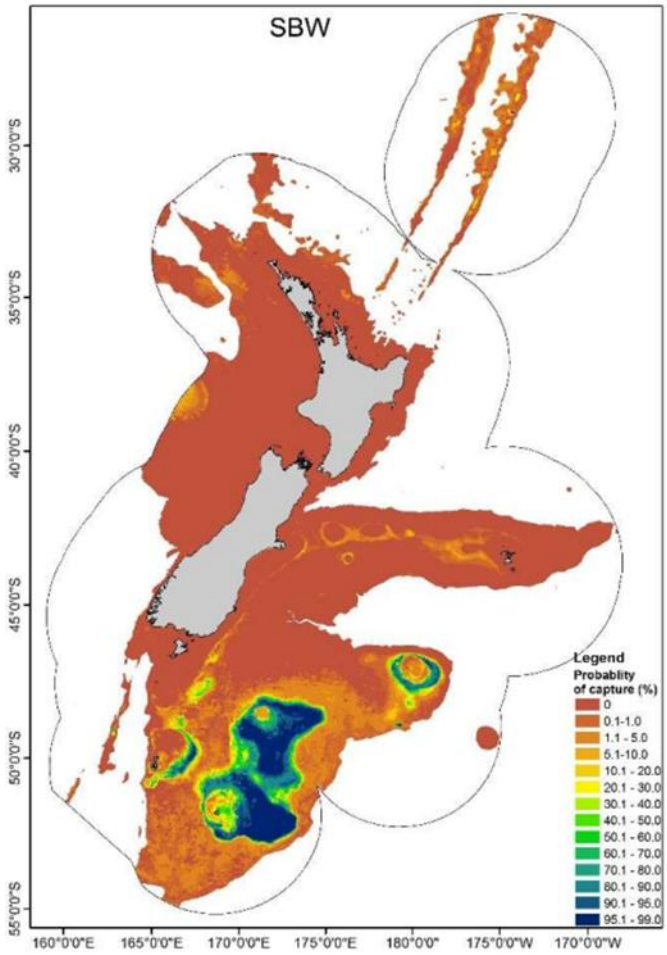


Figure 20: The extent of the predicted distribution of the preferred habitat for southern blue whiting (after Leathwick et al. 2006), where the preferred habitat represents the probability of capture of that species in a standardised trawl in waters down to 1950 m depth (MacGibbon & Mules, 2023).

The overlap of the southern blue whiting fishery footprint on the preferred habitat distribution shows that SBW trawls occur predominantly in areas where the species is most likely to be captured (i.e. in the 70% - 95% probability of occurrence areas; Figure 21; Table 42).

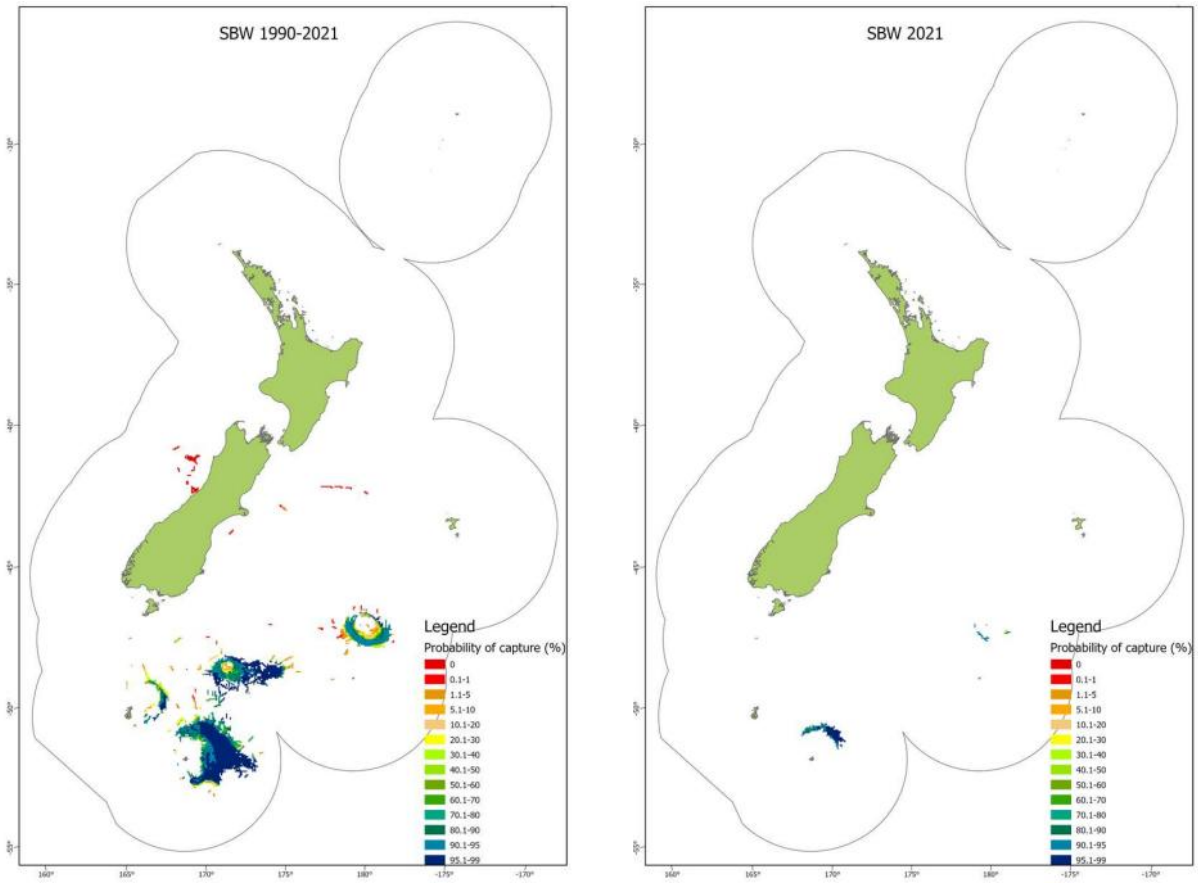


Figure 21: Distribution of the 1990–2021 (left) and the 2021 trawl footprints (right) for southern blue whiting, displayed by 25-km^2 contacted cell, relative to the probability of capture for that species (after Leathwick et al. 2006) (MacGibbon & Mules, 2023).

Table 42: The total area of each 'preferred habitat' (probability of capture) and the percentage of each species 'preferred habitat' (probability of capture) area for SBW covered by the 1990–2021 and 2021 bottom-contact trawl footprint. – indicates no data. (MacGibbon & Mules, 2023).

Preferred habitat (%)	SBW Area (km^2)	SBW Footprint overlap (%) 1990–2021	SBW Footprint overlap (%) 2021
0	931 718.1	0.01	-
0.1–1.0	122 249.7	0.08	-
1.1–5.0	140 341.1	0.27	-
5.1–10.0	23 088.7	1.52	-
10.1–20.0	18 499.5	2.71	<0.01
20.1–30.0	13 156.5	3.28	<0.01
30.1–40.0	11 096.7	3.44	0.01
40.1–50.0	9 764.8	3.63	<0.01
50.1–60.0	8 856.4	6.14	0.01
60.1–70.0	8 626.1	8.74	0.03
70.1–80.0	11 355.4	12.02	0.07
80.1–90.0	21 664.4	17.54	0.74
90.1–95.0	20 464.7	26.49	0.91
95.1–99.0	50 797.8	17.67	0.37
0.0–99.0	1 391 679.7	1.69	0.04

The trawl footprints for southern blue whiting fisheries over the period 1989-90 to 2022-23, and for the 2022-23 fishing year alone, show that the current annual benthic impact is, by comparison, very minor (Figure 22).

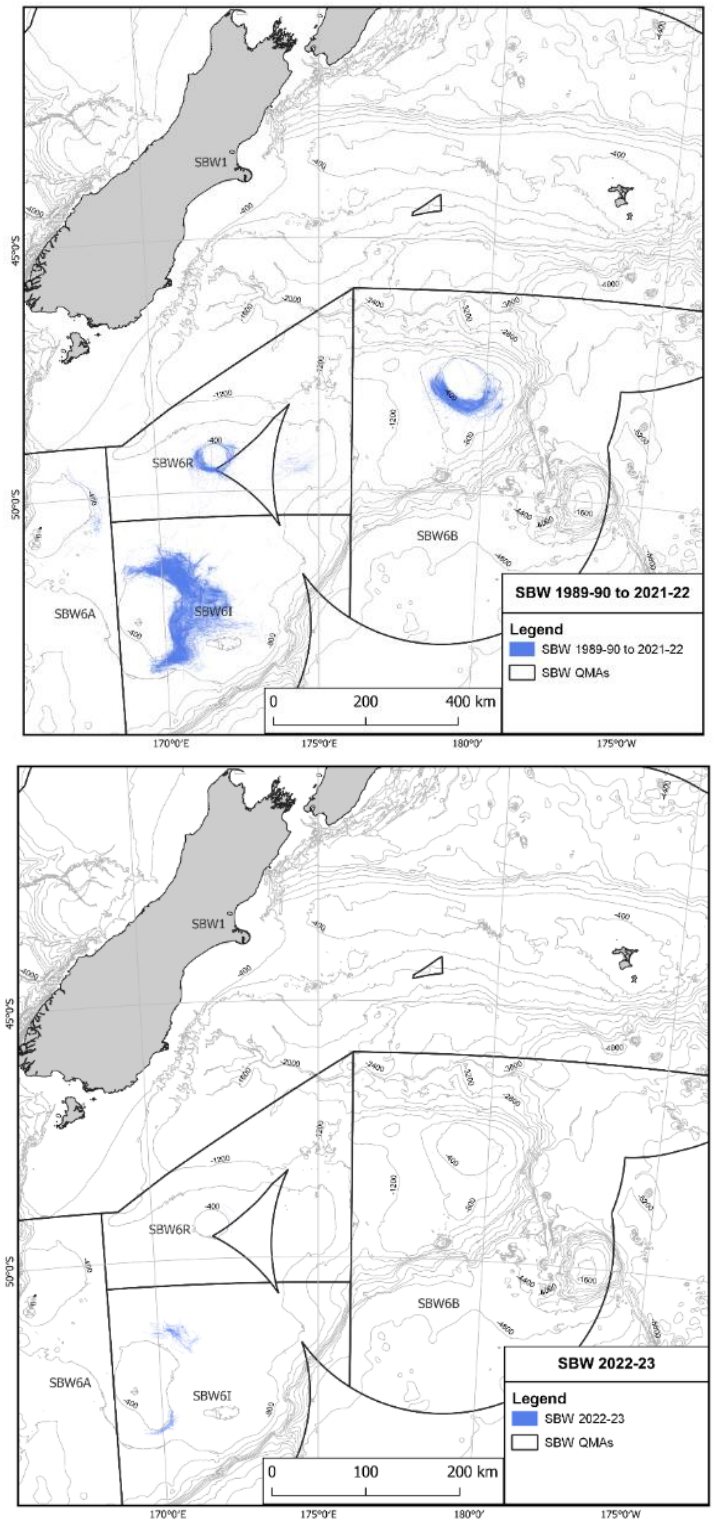


Figure 22: Southern blue whiting trawl footprint for the period 1989-90 to 2022-23 (Top) and for the 2022-23 fishing season (Bottom). Data source: FNZ Rep Log 15702).

Benthic interactions

Per SA3.2.2, *The team shall categorise any invertebrate species that is benthic-habitat forming as a scoring element under the habitats component, irrespective of the species endangered, threatened or protected (ETP) status and irrespective of its catch proportions.* There are no criteria in the MSC Standard V3.1 or associated guidance to classify benthic habitat forming invertebrates. The assessment team takes these to be species that form aggregations, are mostly sessile, enhance complexity of physical habitats and support other biodiversity and ecosystem functions, including corals, sponges and sea pens but excluding horse mussels and anemones.

Benthic-habitat forming invertebrates are assessed under the habitats components of the standard noting however that each species will not be assessed as a separate scoring element but as components of benthic habitats that are defined by their substratum, geomorphology and characteristic floral or faunal groups (SA3.12.2).

All landings of protected corals must be returned to the water immediately, and commercial fishers must report their capture on NFPS catch returns. Although not protected, catches of other benthic bycatch such as anemones, bryozoans, sea pens and sponges are also recorded by FNZ observers.

Protected corals are rarely encountered by southern blue whiting trawlers, which operate primarily using mid-water trawl gear and which is occasionally in contact with the seabed. There has been no observed coral bycatch by these fisheries over the 5-year period 2018-19 to 2022-23 (Table 43). Less than 1 kg of coral was reported captured on Non-Fish Protected Species forms by vessels (Table 44). It is clear that the impact of the southern blue whiting UoA fisheries on ETP corals is negligible.

The most commonly captured non-protected sessile benthic species group is sponges, which are taken in small quantities. Deepsea anemones are occasionally encountered in very small quantities. Catches reported independently by observers and by vessels show that sponges are the main benthic bycatch species encountered (Table 43 and Table 44).

Table 43: Observed incidental capture of sessile benthic invertebrates (kg) by southern blue whiting target tows, 2018-19 to 2022-23. Percentages calculated against total observed catch of all fish and invertebrate species (data source: FNZ COD database).

Common name	2018/19	2019/20	2020/21	2021/22	2022/23	5-Year Avg. (kg)	5-Year Avg. (%)
Sponges	80	340			67	162	0.001%
Floppy tubular sponge	169	10	100	1	164	89	0.000%
Grey fibrous massive sponge					30	30	0.000%
Anemones				7		7	0.000%
Deepsea anemone		2			0	1	0.000%
Totals	**249**	**352**	**100**	**8**	**261**	**289**	**0.001%**

Table 44: Vessel-reported incidental catches (kg) of sessile benthic species by southern blue whiting trawl fisheries. (Data source: FNZ Non-Fish Protected Species catch forms).

Common name	Species Code	2018-19	2019-20	2020-21	2021-22	2022-23	5-Year Avg. (kg)	5-Year Avg. (%)
Sponges	ONG	155	373	-	1	252	156	0.001%
True Coral (Unid.)	COU			-		0	0	0.000%
Totals		**155**	**373**	-	**1**	**252**	**156**	**0.001%**

Analysis of incidental catches of sessile benthic invertebrate taxa during the period 1989-90 to 2022-23 and in 2022-23, showed that corals and bryozoans were not impacted by the southern blue whiting UoAs and that anemones were encountered by a very minor percentage of tows and in minor quantities. Sponges were similarly encountered by a small proportion of tows but involved slightly greater quantities (noting that catch weights were likely over-estimated due to water retention), (Table 45).

Table 45: Incidental capture of sessile benthic invertebrate taxa by the southern blue whiting UoAs during the period 1989-90 to 2022-23 and in 2022-23.

	1989-90 to 2022-23				2022-23			
Benthic Taxa	**No. tows**	**No. tows with captures**	**% tows with captures**	**Capture weight (kg)**	**No. tows**	**No. tows with captures**	**% tows with captures**	**Capture weight (kg)**
Corals	-	-	-	-	-	-	-	-
Bryozoans	-	-	-	-	-	-	-	-
Sponges	2,634	73	2.8%	1,100.5	617	36	5.8%	298.7
Anemones	2,634	2	0.1%	2.2	617	1	0.2%	0.2

Encounters with sponges were patchy and occurred over an area north-east of Campbell Island (Figure 23). Rare encounters of anemones occurred in the same general area (Figure 24).

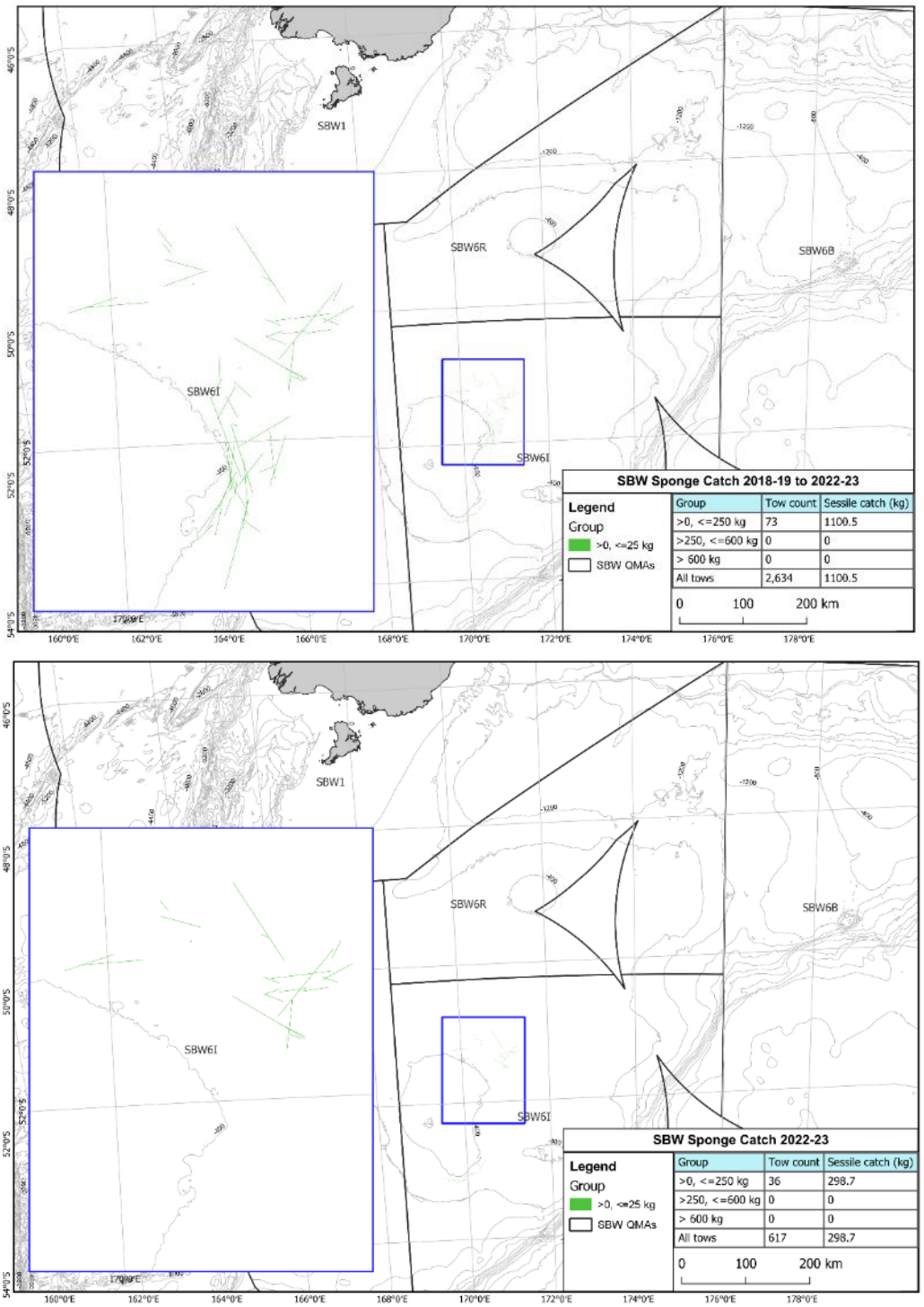


Figure 23: Incidental catches of sponges by the southern blue whiting UoAs for the period 1989-90 to 2022-23 (Top) and during 2022-23 (Bottom). Data source: FNZ. (L. Easterbrook-Clarke, GNS Science, pers. Comm. in SNZ 2024)

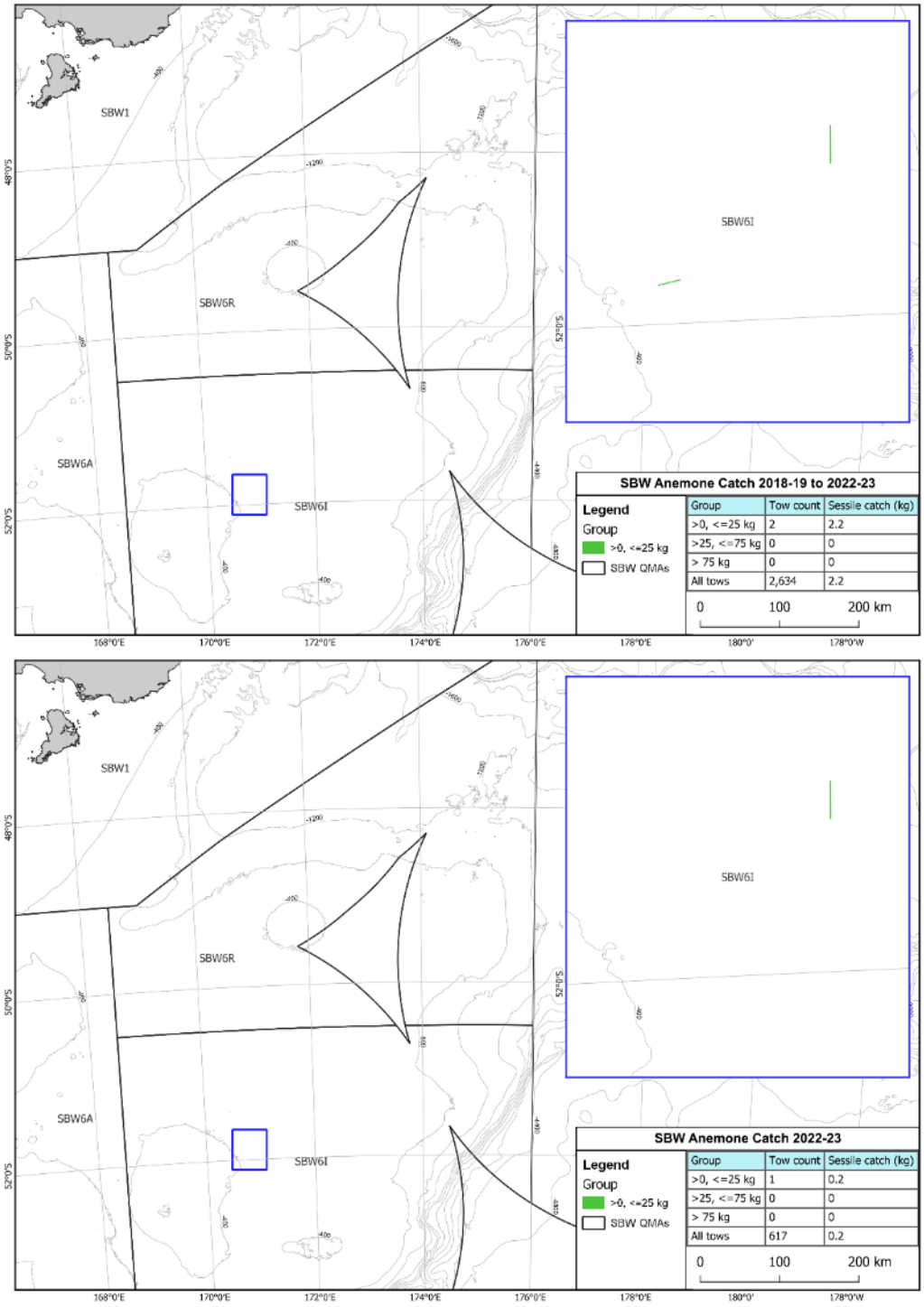


Figure 24: Incidental catches of anemones by the southern blue whiting UoAs for the period 1989-90 to 2022-23 (Top) and during 2022-23 (Bottom). Data source: FNZ. (L. Easterbrook-Clarke, GNS Science, pers. Comm. in SNZ 2024)

10.2.1.3.1 Habitat Management

There are a suite of management measures in place in New Zealand deepwater fisheries to conserve benthic habitats and ecosystems.

- Key legislation
  - Wildlife Act 1953
  - Conservation Act 1987
  - Fisheries Act 1996 (Fisheries Amendment Act 2022)
  - Marine Reserves Act 1971
  - Resource Management Act 1991
  - Marine and Coastal Area (Takutai Moana) Act 2011
  - Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012
- Plans
  - National Fisheries Plan for Deepwater and Middle-depth Fisheries, 2019[2]
  - Annual Operational Plan for Deepwater Fisheries[3]
  - Medium term research plan for deepwater fisheries 2024/25-2029/30[4]
  - Conservation Services Programme Annual Plan[5]
  - Deepwater Trawl Benthic Operational Procedures[6] (apply to all trawlers over 28 m)
    - Ten Commandments – Benthic[7]
- Reporting
  - Trawl Catch Effort and Processing Returns (TCEPRs), Trawl Catch and Effort
  - Returns (TCERs), Catch Effort and Landing Returns (CELRs), and Electronic Reporting (ERS).
    - Fisheries New Zealand Electronic Reporting System (ERS) Guidelines and Requirements
      - Capture of non-fish or protected fish species (NFPS) report (only for corals, sponges and bryozoans)
      - Disposal report (for any other types of benthic organisms)
  - At sea observers report catches of protected and non-protected sessile benthic invertebrates
- Research
  - The Aquatic and Biodiversity Annual Review list ongoing and completed pieces of research on key aquatic environment issues for fisheries management. Themes include six broad areas of research: protected species (PRO), non-QMS bycatch (mostly fish) (BYC/NPB), benthic effects (BEN), ecosystem issues (ECO), marine biodiversity (ZBD), and aquaculture.
  - Some key benthic effects projects include:
    - BEN2019-04 - A spatially explicit benthic impact assessment for inshore and deepwater fisheries in New Zealand
    - BEN2019-05 - Towards the development of a spatial decision support tool for managing the impacts of bottom fishing on in-zone, particularly vulnerable or sensitive habitats

[2] https://www.mpi.govt.nz/dmsdocument/3967-National-Fisheries-Plan-for-Deepwater-and-Middle-depth-Fisheries-2019
[3] https://www.mpi.govt.nz/dmsdocument/51892-Annual-Operational-Plan-for-Deepwater-Fisheries-202223
[4] https://www.mpi.govt.nz/dmsdocument/21746-medium-term-research-plan-for-deepwater-fisheries-report
[5] https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/marine-conservation-services/plans-and-submissions/202425/final-csp-annual-plan-2024-25.pdf
[6] https://deepwatergroup.org/wp-content/uploads/2022/09/Benthic-OP-version-2022-23.pdf
[7] https://deepwatergroup.org/wp-content/uploads/2024/08/SNZ-DWC-Benthic-10-commandments-2023-24.pdf

- BEN2020-01 - Extent and intensity of seabed contact by mobile bottom fishing in the New Zealand Territorial Sea and Exclusive Economic Zone
- BEN2020-07 - Extent and intensity of trawl effort on or near underwater topographic features in New Zealand's Exclusive Economic Zone
- BEN2021-01 - Characterisation of benthic habitats in four inshore areas and their potential as HPSFM
- The trawl footprint of New Zealand's trawl fisheries is assessed annually to monitor their interactions with the benthic habitat (see MacGibbon and Mules 2023).

- New proposed fisheries research projects are published annually through the MPI[8] and previous years completed work is also published.

To date New Zealand's MPA Policy has only been applied to the 12 nm TS. The Fisheries Act 1996 has been the primary legislation for establishing marine protection in the EEZ (given the Marine Reserves Act only applies in the TS). The main protection measures established in the EEZ to date have been the 'Seamount' Closures and the Benthic Protection Areas. Marine reserves, SCAs, BPAs and other major spatial restrictions to trawling are presented in Figure 25.

In 2007 New Zealand established Benthic Protection Areas (BPAs). BPAs close 17 large areas to bottom trawling and to dredging. These areas comprise over 1.1 million km^2 of largely pristine seabed, an area equal to about 30% of New Zealand's EEZ. Within the BPAs, bottom trawling and dredging is prohibited and any form of mid-water trawling may only be undertaken under strictly controlled and monitored conditions to preclude contact with, and therefore impacts on, the benthic environment.

Table 46. New Zealand MPA Policy Classification.

NZ MPA Policy Classification	Type of Area	Main Objective
Type 1 MPA	Marine reserves	Established under the Marine Reserves Act for the purpose of preserving marine life for scientific study
Type 2 MPA	Other MPAs	Meets the MPA Policy's Protection Standard but has not been established under the Marine Reserves Act such as marine mammal sanctuaries
Protection Tools	-	Not recognised as an MPA because does not meet the MPA Policy Standard but still recognised as a protection tool

[8] https://www.mpi.govt.nz/dmsdocument/51409-Fisheries-Research-Services-for-202425

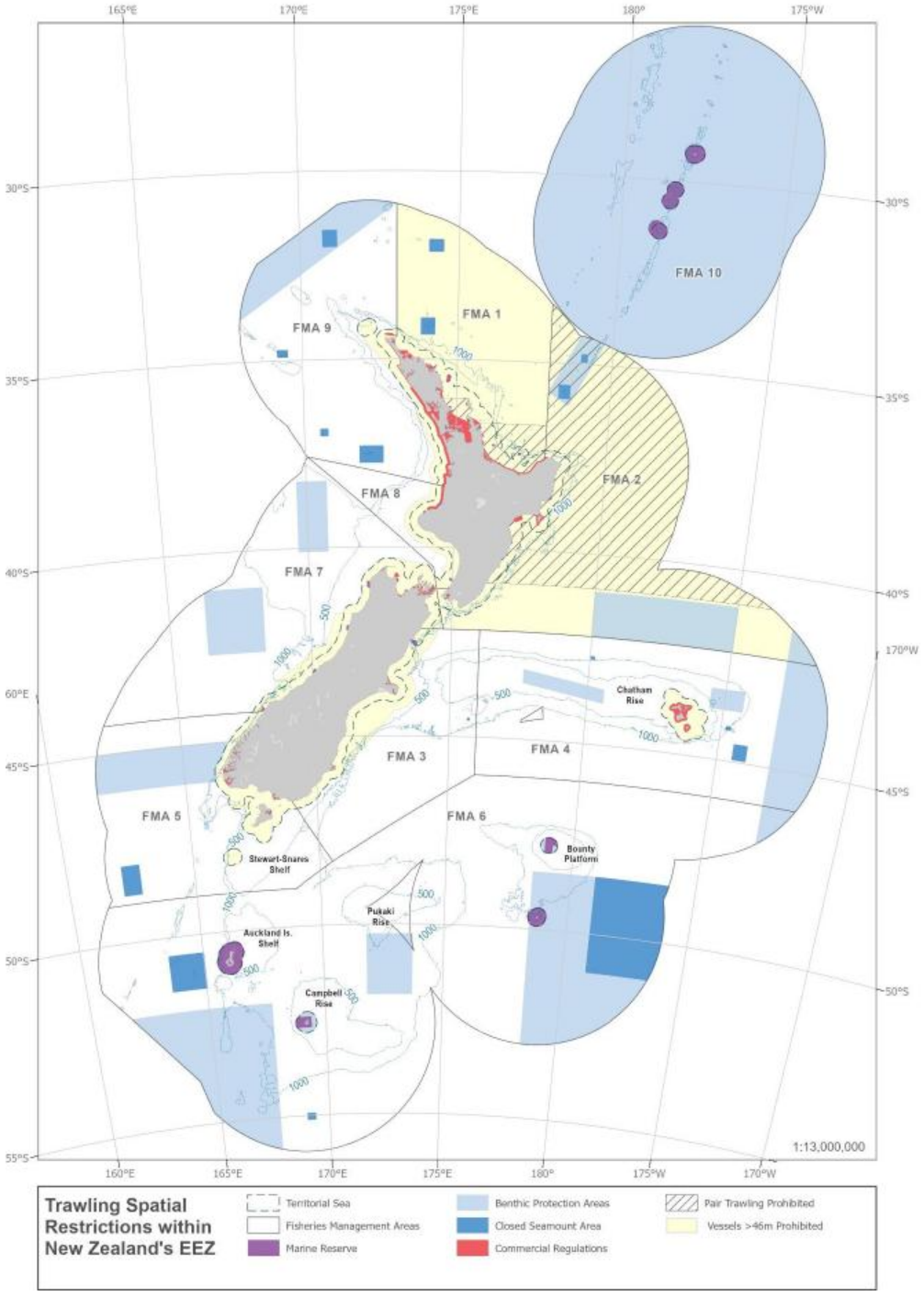


Figure 25. Map of the major spatial restrictions to trawling and Fisheries Management Areas (FMAs) within the outer boundary of the New Zealand EEZ. (AEBAR 2021 – Chapter 11).

10.2.1.4 Ecosystem

Southern blue whiting is one of the dominant (in terms of biomass) middle depth fish species found on the Campbell Plateau (SBW 6I) and Bounty Plateau (SBW 6B) at depths between 250–600 m. Its distribution is centred on about 500 m depth and latitude 51° S. During August and September, southern blue whiting form large dense spawning aggregations on the Campbell Rise and Bounty Plateau and, to a lesser extent, on the Pukaki Rise and near the Auckland Islands. The species is also found in much lower numbers on the Stewart-Snares shelf and Chatham Rise.

The stocks are characterised by highly variable year-class strengths, with strong year classes growing at a significantly lower rate than others (i.e. showing signs of density dependent growth). Their substantial abundance suggests that southern blue whiting are probably an important part of the Campbell Rise and Bounty Plateau ecosystems, but their variability suggests that these systems may function differently at different times. Very large changes have been observed in abundance on the Bounty Plateau, with a 7-fold increase between 2005 and 2007 followed by a 4-fold decrease to 2009 (Dunn & Hanchet 2011). The large increase was due to the very strong 2002 year-class recruiting to the fishery, but the rapid decline is not easily explained. Whatever the reason, there are likely to be implications for the role of the southern blue whiting population in the ecosystem during such events.

Predation by marine mammals and large teleosts is probably the main source of mortality for adults, while juveniles are frequently taken by seabirds. Large hake and ling taken as bycatch in the fishery have usually been feeding on southern blue whiting, and large hoki caught during Sub-Antarctic trawl surveys have occasionally been feeding on juvenile southern blue whiting. Juvenile (90–130 mm FL) southern blue whiting were found to be the main prey item of black-browed albatross at Campbell Island during the chick rearing period and are also regularly taken by grey-headed albatross and rockhopper penguins breeding at Campbell Island (Cherel et al 1999).

Crustaceans are the dominant prey groups for southern blue whiting in the Sub-Antarctic with crustaceans occurring in 70% of stomachs, mainly euphausiids (37%), natant decapods (24%), and amphipods (11%). Teleosts occur in 32% of stomachs, mainly myctophids (10%). Salps (7%) and cephalopods (2%) were of lesser importance (Stevens et al., 2011).

Data from the Sub-Antarctic trawl survey series were used to derive fish-based ecosystem indicators using diversity, fish size, and trophic level. There were generally increasing trends in the proportion of threatened fish species and those with low resilience, while indices of fish diversity often showed positive trends. The proportion of piscivorous and demersal species and the mean trophic level generally declined over the time-period, especially in areas where southern blue whiting are more common. It was postulated that the highly variable recruitment of dominant species like southern blue whiting may strongly influence such trends Tuck et al (2009).

Since the launch of NZ's Biodiversity Strategy 2000, Fisheries New Zealand has run a Marine Biodiversity Research Programme with 67 projects to date, addressing biodiversity knowledge gaps. Research projects pertinent to the deepwater environment include:

- ZBD2020-07 Recovery of Seamount Communities
- ZBD2020-06 Recovery of biogenic habitats
- ZBD2019-11 Development of Electronic Automated Reporting System (EARS) to improve seabird bycatch monitoring
- ZBD2019-01 Quantifying benthic habitats
- ZBD2019-04 Plastics and marine debris across the ocean floor in New Zealand waters
- BD2018-01 5-year continuous plankton survey (Phase 3)
- ZBD2018-05 Ecosystem function and regime shifts in the Subantarctic

- ZBD2016-11 Quantifying benthic biodiversity across natural gradients
- ZBD2016-04 Organic Carbon Recycling in Deepwater
- ZBD2014-03 Sublethal effects of environmental change on fish populations.

Climate change

Cummings et al., (2021) reviewed the biological and ecological characteristics of 32 commercial fisheries species or species groups and evaluated their potential to be impacted by climate related changes. For offshore species information was sparse. Predicting the effects of climate variations on fisheries is limited by the understanding of how large-scale climate patterns affect the oceanography of New Zealand waters, how environmental variability affects species and how species interact in an ecosystem. However, the authors concluded that for offshore fish (e.g. southern blue whiting), a variety of interacting factors, including temperature, circulation and stratification, made it difficult to draw direct linkages between environmental variables and stock performance.

Current climate change research projects include:

- ZBD2018-02 Climate change, fish distribution meta-analysis
- ZBD2018- 03 Climate variability, trends, and fish population parameters
- ZBD2018-05 Ecosystem function and regime shifts in the Sub-Antarctic.

10.2.1.5 Principle 2 Scoring Elements

Table 47. Principle 2 scoring elements assessed for the southern blue whiting trawl fishery UoAs.

Scoring Element		Stock	Component	Rationale for categorisation
Common name	**Scientific name**			
Sponges	*Porifera*	N/A	Habitats	See Table 43, Table 44, Table 45
Floppy tubular sponge	*Hyalascus sp*	N/A	Habitats	
Grey fibrous massive sponge	*Phorbas sp.*	N/A	Habitats	
Anemones	*Cnidaria*	N/A	Habitats	
Deepsea anemone	*Bolocera spp.*	N/A	Habitats	
True Coral (Unid.)	*Alcyonacea, Gorgonacea, Scleractinia, Antipatharia & Stylasteridae*	N/A	Habitats	
BOMEC Classes A-O		N/A	Habitats – less sensitive	See Section 10.2.1.3
Sand covered hard substrate with emergent fauna		N/A	Habitats – more sensitive	See Section 10.2.1.3
Southern blue whiting biomass		N/A	Ecosystem	See Section 10.2.1.4

10.2.2. Principle 2 Performance Indicator scores and rationales

PI 2.1.1 – In-scope species outcome

PI 2.1.1		The UoA aims to maintain in-scope species above the PRI and does not hinder recovery of in-scope species if they are below the PRI		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
A	**Main in-scope species stock status**			
	Guide post	**Main** in-scope species are **likely** to be above the PRI. or If the species is below the PRI, it is **likely** that the UoA does not hinder recovery and rebuilding.	**Main** in-scope species are **highly likely** to be above the PRI. or If the species is below the PRI, there is evidence of recovery, or it is **highly likely** that the UoA does not hinder recovery and rebuilding.	There is a **high degree of certainty** that **main** in-scope species **are** fluctuating around a level consistent with MSY.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		Per SA3.6.5 If there are no "main species" scoring elements, the team shall award a score of SG100 for scoring issue (a). **SG100 is met**.		
B	**Minor in-scope species stock status**			
	Guide post			**Minor** in-scope species are **highly likely** to be above the PRI. or If below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of **minor** in-scope species.
	Met?			**Yes**
Rationale		Per SA3.6.6 If there are no "minor species" scoring elements, the team shall award a score of SG100 for scoring issue (b). **SG100 is met.**		

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**100**

Condition number (if relevant)	**NA**

PI 2.1.2 – In-scope species management strategy

PI 2.1.2		**There is a strategy in place that is designed to maintain or to not hinder rebuilding of in-scope species**		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
A	**Management strategy in place**			
	Guide post	There are **measures** in place for the UoA, **if necessary**, that are expected to maintain or to not hinder rebuilding of the **main** in-scope species at/to the in-scope species outcome SG60 level.	There is a **partial strategy** in place for the UoA, **if necessary**, that is expected to maintain or to not hinder rebuilding of the main in-scope species at/to the in-scope species outcome SG80 level. or Where in-scope species outcome fails to meet the SG80, a demonstrably effective strategy is in place between all MSC UoAs that categorise this species as **main** in-scope to ensure that they collectively do not hinder recovery and rebuilding.	There is a **strategy** in place for the UoA for managing **main** and **minor** in-scope species at the in-scope species outcome SG80 level.
	Met?	**Yes**	**Yes**	**No**
Rationale		Per SA3.7.1 In scoring issues (a) and (b), if there are no “main species” scoring elements, the team shall apply the term “if necessary”. SA3.7.1.1 The team shall award a score of SG80 for scoring issues (a) and (b). SA3.7.1.2 The team shall still assess SG100 for scoring issues (a) and (b). **SG80 is met.** Three key components of the fisheries management system are noteworthy with respect to in-scope species management in New Zealand. They work in concert to set the catch limit of a given fish stock. Total Allowable Commercial Catch (TACC) quota is the total quantity of each fish stock that the commercial fishing industry can catch in a given year. The TACC is a portion of the TAC that is set after allowances have been made for customary and recreational fishing, and for other sources of fishing-related mortality (FNZ Infosite). have been in place since 1986-87. Species which have a TACC are part of the Quota Management System (QMS).		

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of in-scope species

The annual catch entitlement (ACE) scheme was added to New Zealand's quota management system for fisheries in 2001. The scheme allocates quota owners an annual share of the total allowable commercial catch (TACC) in proportion to their quota holding of a particular fishstock and overcatch attracts paid deemed values that are scaled to level over overcatch (FNZ InfoSite). ACE may also be carried over to the following fishing year.

The "Adaptive Management Programme" (AMP) approach was introduced into New Zealand's fisheries management decision making in 1991. The AMP allows a variation in the TAC for fisheries management units (defined as fishstocks) for which there is limited information on stock size (Peacey et al 2001)

The southern blue whiting trawl fishery management system has documented a comprehensive and effective monitoring, control and surveillance system through:

1. compulsory use of satellite-based Vessel Monitoring System (VMS) with an onboard automatic location communicator (ALC);
2. government observers who may be placed on board to observe fishing, transhipment and transportation to collect any information on hoki, hake and ling fisheries resources. This includes information to monitor the effects of hoki, hake and ling fishing on the aquatic environment; and,
3. accurate recordkeeping and recording requirements to establish auditable and traceable records to ensure all catches are counted and do not exceed the ACE held by each operator.

Deepwater and middle-depth fisheries are those generally between 12 nautical miles and 200 nautical miles offshore. Fisheries are categorised into three tiers:

- Tier 1 – high volume, high value quota management system stocks that commercial fishers usually target;
- Tier 2 –quota management system stocks that are smaller or less valuable bycatch fisheries, or are only targeted at certain times of the year; and
- Tier 3 – bycatch species that are not managed through the quota management system.

The southern blue whiting trawl fishery is categorised as a Tier 1 fishery.

The management of the majority of New Zealand's deepwater fisheries takes an evidence-based approach, supported by a robust and comprehensive monitoring and research programme. Information and data come from a variety of sources including independent Fisheries New Zealand Observer data, industry reporting, contracted fisheries independent research surveys, and contracted projects (FNZ, 2024). Research needs to inform management of New Zealand's deepwater fisheries are reflected in the medium term research plan (MTRP). The MTRP is a living document, updated regularly to reflect changes in management priorities where these occur, and identification of new information requirements. The MTRP should be read alongside the National Fisheries Plan for Deepwater and Middle depth fisheries (FNZ (2019), National Deepwater Plan). Annual research plans are consulted with stakeholders through the Deepwater Fish Plan Advisory Group and reported in the Annual Operational Plans and Annual Review Reports for deepwater fisheries.

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of in-scope species		
		The basic information for each species (see Section 10.1.1) needed when conducting stock assessments relates to information on stock structure, biological parameters such as natural mortality, length as function of age, weight as a function of age, and fecundity as a function of age. The species descriptions (see Section 10.1.1) refer to whether these parameters depend on sex and for natural mortality whether there is evidence for age or length dependence. Tier 1 and Tier 2 stocks are subject to stock assessments, with subsequent Plenary reports summarising fisheries, biological, environmental, stock assessment and stock status information. The Plenary reports take into account the most recent data and analyses available to Science Working Groups (SWGs) and Fisheries Assessment Plenary meetings, and also incorporate relevant analyses undertaken in previous years. Tier 3 stocks, which encompass the majority of minor in-scope species, do not benefit from the same level of scientific rigour and focus as target and main bycatch species in Tier 1 and Tier 2 fisheries. Nevertheless for most fishstocks in New Zealand TACCs are used to limit and manage catches. The TACCs typically constitute the main and only management measure in place for those stocks specifically. Per SA3.4.1c the assessment team shall interpret "*Strategy" to mean a cohesive and strategic arrangement that may comprise 1 or more measures and an understanding of how the measures work to achieve an outcome. A "strategy" should be designed to manage impact on that component specifically, it needs to be appropriate to the scale, intensity, and cultural context of the fishery and should contain mechanisms for the modification of fishing practices if unacceptable impacts are identified.* Whether exceeded or under caught the TACCs do not constitute a strategy as defined by the MSC, **SG100 is not met** for main and minor in-scope species.		
B	**Management strategy effectiveness**			
	Guide post	The measures, **if necessary**, are considered **likely** to work for the **main** in-scope species, based on plausible argument.	There is some **evidence** that the measures/partial strategy, **if necessary**, is achieving the objectives for **main** in-scope species set out in scoring issue (a), based on some information directly about the UoA and/or species involved.	**There is evidence** that the partial strategy/strategy is achieving the objectives set out in scoring issue (a), based on information directly about the UoA and/or species involved.
	Met?	**Yes**	**Yes**	**No**
Rationale		Per SA3.7.1 In scoring issues (a) and (b), if there are no "main species" scoring elements, the team shall apply the term "if necessary". SA3.7.1.1 The team shall award a score of SG80 for scoring issues (a) and (b). SA3.7.1.2 The team shall still assess SG100 for scoring issues (a) and (b). **SG80 is met.**		

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of in-scope species		
		Without having completed a comprehensive review of the status of all fish stocks in New Zealand with which the southern blue whiting trawl UoAs interact (>125 species) it is not possible to conclude that there is evidence that the management of those stocks is achieving the objectives set out in scoring issue (a), based on information directly about the UoA and/or species involved. **SG100 is not met.**		
C	**Review of alternative measures**			
	Guide post	There is a **review** of **alternative measures** to minimise UoA-related mortality of **unwanted catch** of **main** in-scope species	There is a **review** at least once every 5 years of **alternative measures** to minimise UoA-related mortality of **unwanted catch** of **main** in-scope species and they are **implemented, as appropriate**.	There is a **review** that happens every 2 years of **alternative measures** to minimise UoA-related mortality of **unwanted catch** of all in-scope species, and they are **implemented, as appropriate**.
	Met?	**Not applicable**	**Not applicable**	**Not applicable**
Rationale		Unwanted catch is defined per SA3.1.1e as, the part of the catch that the UoA did not intend to catch but could not avoid and did not want or chose not to use. Per SA3.7.2.1 the purpose of alternative measures is to, “minimise” incidental observed and/or unobserved mortality of the species or species type to the lowest achievable levels. Noting the observed catch composition reflecting the “clean” nature of the fishery, with the highest proportion of bycatch attributed to southern boarfish at 0.24% (Table 29), it is clear that mortality of species, other than the target species southern blue whiting, has been minimised to the lowest achievable levels. This scoring issue is therefore **not applicable** as there are no ‘main’ or “minor” in-scope species scoring elements as all other catch meets the definition of “negligible” per SA3.1.1.d.ii..		
D	**Shark finning (V2.01 SGs per accepted Variation Request – Section11.11.1)**			
	Guide post	It is **likely** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		There is a Fins Naturally Attached (FNA) policy requirement in New Zealand since 2014, with eight exceptions to the requirement. For those shark species it is not possible to confirm that the UoA has adopted the FNA because GSA2.4.3–GSA2.4.4 of MSC Standard v3.1 does not permit exemptions to an FNA Policy. LRQA applied for and were granted a Variation Request – Section 11.11.1 to apply a blanket modification to the assessment tree for scoring issue 2.1.2d and 2.2.2d, applying the requirements of SA2.4.3–SA2.4.7 (MSC V2.01) to ensure that shark finning is not being undertaken in the UoA. Subject to application of the Variation Request per MSC V2.01, at SG100:		

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of in-scope species

SA2.4.7.1, If sharks are landed with fins naturally attached, there is some external validation such that there is a high degree of certainty that shark finning is not taking place.

SA2.4.7.2, If sharks are processed on board:

a. There are comprehensive regulations in place governing the management of sharks;
b. There is full documentation of the destination of all shark bodies and body parts; and
c. Comprehensive external validation of the vessels' activities is available to confirm with a high degree of certainty that shark finning is not taking place.

Per GSA2.4.5-GSA2.4.7, the MSC recognises that in some fisheries adoption of a FNA Policy may be practically difficult to achieve when sharks are destined for processing and utilisation, and therefore also recognises that landing fins and other shark parts separately, including as meal, may be allowed if adequately regulated and observed.

External validation is prescribed as follows:

> At SG 80 "good external validation" should be understood to indicate a validation level equivalent to a nominal observer coverage of 20% of effort, although the CAB may accept other rates and alternative measures/evidence with sufficient justification that the same scientific outcome (highly likely confidence that finning is not taking place) is delivered.
>
> At SG 100 "comprehensive external validation" is required. This gives consideration of the continuity of data collection, precision and accuracy of information, and any bias, etc, that is capable of supporting the measures in place given the level of precaution that is implicit in the measures and the ability of the measures for detecting any changes.

16 chondrichthyan species/species groups have been observed in catches over the most recent five-year period (Table 36). In the case of the southern blue whiting trawl fishery UoAs, catches of sharks are "negligible" (Table 29).

The Fisheries (Commercial Fishing) Regulations 2001 prohibit shark finning and require that any shark fins landed must be naturally attached to the remainder of the shark. However, an exception to the fins attached requirement is provided for seven QMS species to allow at-sea processing to continue.

All QMS shark species must be landed if taken. However, Schedule 6 provides for exceptions to this rule by listing QMS species which may be returned to the sea (FNZ, 2022), as follows (Figure 26):

- Rig (SPO) and School shark (SCH) – may be returned alive only
- Blue shark (BWS), mako shark (MAK) and porbeagle shark (POS) – may be returned alive or dead and if dead, balanced against ACE
- Spiny dogfish (SPD) – may be returned alive or dead and must always be balanced against ACE regardless of life status.

In New Zealand two shark definitions are used:

1) The Fisheries (Commercial Fishing) Regulations 2001 defines sharks as 'a fish of the class Chondrichthyes, but excludes Batoidea'.

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of in-scope species

2) New Zealand's NPOA Sharks uses the term 'sharks' generally to include all species in the class Chondrichthyes (sharks, rays, skates and chimaeras).

Recognising the difference in shark definitions within New Zealand for different purposes it precautionary to apply the more comprehensive definition of the NPOA Sharks.

Approach	Description	Applicable species
Ratio	Fins must be stored and landed separately by species. The weight of fins landed must not exceed a specified percentage of the greenweight of the shark. Weight of fins must be reported on landing returns. The ratio applies to landings on a trip-by-trip basis.	Elephant fish
		Dark ghost shark
		Mako shark
		Pale ghost shark
		Porbeagle shark
		Rig
		School shark
Fins artificially attached	After being processed to the dressed state, fins must be re-attached to the shark by some artificial means. Landings to be reported with landed state of SFA (shark fins attached).	Blue shark
Fins naturally attached	After being processed to the headed and gutted state, the fins must remain attached to the body by some portion of uncut skin. Landings to be reported with landed state of SFA (shark fins attached).	Spiny dogfish
		All non-QMS species

Figure 26. New Zealand conditions for landing shark fins (FNZ AOP, 2022).

Within the trawl fleet targeting southern blue whiting all 10 vessels have meal plants and process sharks to fishmeal (Table 27). In addition to their fishing permit these factory vessels are also permitted, in the same way as a factory on land, to process to final product.

Scoring Summary

The following information is provided to demonstrate there is a high degree of certainty shark finning is not taking place:

1. The Fisheries (Commercial Fishing) Regulations 2001.
2. NPOA-Sharks 2022 (FNZ, 2022)
3. A fleet-wide code-of conduct for deepwater vessels.
4. Information to confirm that the UoA has adopted an FNA policy is available through Operational Procedures (OPs) in place which are updated regularly/iteratively by the Deepwater Group.
5. OPs are communicated effectively to the deepwater fleet through an Information Portal available on the bridge of all UoA vessels
6. Implementation is supported through the full time Environmental Liaison Officer who is required to visit at least 90% of vessels in the Deepwater fleet each year
7. FNZ's observer protocols require observers to look for any instances of shark finning, including for sharks that go into the meal plant.
8. Where a shark is landed, observers record the species and determine its disposal code. The disposal code is cross-checked against DWC's Sharks Operational Procedures to check they are landed in accordance with DWC's operational documentation.

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of in-scope species		
		9. Observer reports include provision to record shark processing codes and instances of observed shark finning (noting that there have been no reported shark finning cases reported). 10. Observers are positioned to directly observe vessel interactions with sharks throughout the catch operation, including reporting the fate of sharks either retained, processed or discarded. 11. Vessel offloads are monitored Ministry for Primary Industries Fishery Officers and vessels are inspected to ensure all catch is landed from the vessel. There have been no reported instances of shark finning through dockside compliance monitoring. 12. All stakeholders interviewed during the site visit, including fishery managers, compliance officers, observer program managers, external consultants and the client where emphatic that shark finning does not take place in New Zealand deepwater fisheries. In the case of sharks processed to fishmeal, the sharks are processed whole at sea, there is full utilization of the shark (including fins still attached), observers confirm that fins are not retained or landed as a separate product. The assessment team is satisfied that the intent of the MSC in scoring shark finning scoring issues is met in these cases. The assessment team were supplied with commercial catch statistics and fate information for all species caught by the SBW fishery. A total of 89 kg of spiny dogfish were processed dressed over the most recent five-year period. As this species is not exempt from the FNA policy, the fins must remain attached to the body, and this must be confirmed by observers on board. Observer coverage in the SBW 6B and SBW 6I fisheries over the last five years has averaged 95.4% (Table 28). Information to confirm that an FNA or non-retention policy is enforced in the UoA (where applicable) and that shark fining is not taking place when sharks are processed to fishmeal or dressed (spiny dogfish) is available through the high levels of observer coverage in the UoAs. The assessment team concludes that there is a high degree of certainty that shark finning is not taking place. **SG60, SG80 and SG100 are met.**		
e	**Ghost gear management strategy**			
	Guide post	There are measures in place for the UoA, **if necessary**, that are expected to minimise ghost gear and its impact on all in-scope species.	There is a partial strategy in place for the UoA, **if necessary**, that is expected to minimise ghost gear and its impact on all in-scope species.	There is a strategy in place for the UoA, **if necessary**, that is expected to minimise ghost gear and its impact on all in-scope species.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		Per SA3.7.5 The team shall only score scoring issue (e) if PI 2.2.2 scoring issue (e) is not scored (i.e. if there are no ETP/OOS scoring elements). This is the case for the southern blue whiting trawl fishery UoAs and the scoring issue is scored. Trawl doors, ropes or floats lost at sea do not have the characteristics that would result in ghost fishing. Trawl doors would remain on the seabed, and while they may attract marine communities,		

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of in-scope species
	they would not be classed as 'ghost fishing'. For this type of gear, if lost, there would be no scoring elements at risk of interacting with the gear type that would cause mortality. For trawl doors, ropes and floats the risk of ghost gear impact is therefore demonstrably absent (GSA3.7.6). For whole trawl nets, if a whole trawl were to be lost, the heavy gear and doors would pull the gear to the seafloor, where if it were not retrieved there is a risk of ghost fishing. If meshing alone were to be lost as sea, it may remain in the water column and move depending on current flows. However, due to the configuration of trawl nets and the operation of those nets in the water column targeting southern blue whiting, losing a single piece of meshing is highly unlikely. The focus of measures to minimise ghost gear and its impacts is therefore on the trawl net as a whole. New Zealand maintains stringent regulations to ensure garbage lost at sea from vessels is minimised. The regulations primarily fall under the Maritime Protection Rules but there are also components of the Fisheries Act (1996) which reduces risk of gear being lost. Vessels are also required by law to report lost gear to authorities as shown in the extracts below. Maritime Protection Rules 170.3. General prohibition on discharge of garbage into the sea: 1. Garbage is a harmful substance for the purposes of section 225 of the Act. 2. The discharge of garbage [including fishing gear] into the sea from a ship is prohibited, except as provided in this Part or the Act. 170.4. General exceptions to prohibition: Nothing in this Part prohibits or restricts any person from discharging garbage from a ship if – c) the discharge is an accidental loss of fishing gear from a ship and all reasonable precautions have been taken to prevent such loss; or d) the discharge is a discharge of fishing gear from a ship for the protection of the marine environment or for the safety of that ship or its crew. 170.21. Reporting accidental loss or discharge of fishing gear: In the event of an accidental loss or discharge of fishing gear referred to in 170.4(c) or (d) that poses a significant threat to the marine environment or navigation, the owner and the master of a ship to which this rule applies must report the accidental loss or discharge: a) to the Director; and b) if the accidental loss or discharge occurs within waters subject to the jurisdiction of a coastal State, to the appropriate authority in that coastal State. **DWC Management Strategy for lost gear** All vessels are required by law to report lost gear. This is done via Electronic Reporting System (ERS). There have been three lost gear events recorded through ERS between 2019-20 to 2021-22 for the HOK/HAK/LIN and southern blue whiting trawl fisheries combined. For one of these events the trawl was retrieved using grapnels. It is not clear what the situation was for the other two events i.e. what the specific gear was and whether it was retrieved or not.

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of in-scope species

In addition to their statutory requirements vessel operators in the SBW trawl fishery have management strategies in place to prevent, mitigate and remediate gear lost or abandoned at sea (Table 48). Discarding gear at sea is prohibited unless under the circumstances noted above.

Table 48: Ghost Fishing Gear Management Strategy for SBW trawl fisheries (SNZ, 2024)

Prevention	• There is inherently very low risk of losing trawl fishing gear in the SBW fisheries. The gear is firmly attached to the vessel throughout fishing operations. Losing this type of gear is incredibly costly to the operator and so all precautions are taken to ensure gear is not lost.
	• Vessel managers and skippers ensure that gear is well maintained before, during and after use. E.g.
	  ○ nets are covered when not in use to avoid UV damage
	  ○ warps are kept appropriately greased to prevent abrasion
	  ○ gear maintenance is conducted when the gear is on board the vessel
	  ○ old or damaged gear is replaced.
	• Most components of fishing gear are marked for identification

Mitigation	• The nature of trawl fishing requires waterflow through the net to herd and funnel fish into the codend of the net. A trawl net without drag and lift will collapse and won't have the ability to catch fish. If a whole trawl were to be lost, the heavy ground gear and doors would pull the gear to the seafloor. If meshing alone were to be lost as sea, it may remain in the water column and move depending on current flows. However, due to the configuration of trawl nets, losing a single piece of meshing is highly unlikely. • Trawl doors, ground ropes or floats lost at sea do not have the characteristics that would result in ghost fishing. E.g. trawl doors would remain on the seabed, and while they may attract marine communities, they would not be classed as 'ghost fishing'.
Remediation	• Trawl gear in these fisheries cost hundreds of thousands of dollars with expensive sensors and other electronics attached. There is significant economic incentive to retrieve gear if lost. • If in the unlikely event a trawl is lost or abandoned at sea, the catch sensors in the codend and net sonde on the headline will emit a signal for up to a week after it is lost. Vessel acoustic systems can pick up the signal and locate the lost gear. • The skipper is also required to record lost fishing gear in ERS, including the specific location of where it was lost. Some vessel operators also maintain a register of garbage (fishing gear) lost at sea. Some do not as it is such an infrequent occurrence. • Sophisticated geo-position sensors on gear during fishing also helps with locating gear.

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of in-scope species

- Once the gear is located, vessels have grapnels onboard to retrieve the gear.
- Garbage, including other fishing gear is occasionally trawled up by vessels. Operators will always return this rubbish to shore instead of putting back overboard.

The combination of statutory and fishery-specific management measures, alongside reporting through the ERS and low likelihood and incidence of gear loss on the trawl fishery, constitutes a strategy that is expected to minimise ghost gear and its impact on ETP/OOS scoring elements, **SG60, SG80 and SG100 are met**. More detailed ERS reporting is recommended to determine the exact cause of gear loss and subsequent outcome (details of retrieval or reason for abandonment).

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	**≥80**
Information gap indicator	**More information sought** *Fish meal composition* *Observer reports including for sharks process to fishmeal* *ERS reporting of lost gear*

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**90**
Condition number (if relevant)	**NA**

PI 2.1.3 – In-scope species information

PI 2.1.3		Information is adequate to determine the impact of the UoA on in-scope species and the effectiveness of management measures or strategies in place		
Scoring issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impact on main in-scope species			
	Guide post	Information is adequate to **broadly understand** the impact of the UoA on the stock status of **main** in-scope species.	Information is adequate to **estimate** the impact of the UoA on the stock status of **main** in-scope species with a **high degree of accuracy**.	Information is adequate to **estimate** the impact of the UoA on the stock status of **main** in-scope species with a **very high degree of accuracy**.
	Met?	**NA**	**NA**	**NA**
Rationale		There are no main in-scope species under assessment (Table 29, Table 47). Despite this however per SA3.3.3, *The team shall still score the Management and Information PIs*. Information adequacy, as an evaluation of trueness and precision, is scored at scoring issue c as applicable to the Unit of Assessment.		
b	Information adequacy for assessment of impact on minor in-scope species			
	Guide post			Information is adequate to **estimate** the impact of the UoA on the stock status of **minor** in-scope species with a **high degree of accuracy**.
	Met?			**NA**
Rationale		There are no minor in-scope species under assessment (Table 29, Table 47). Despite this however per SA3.3.3, *The team shall still score the Management and Information PIs*. Information adequacy, as an evaluation of trueness and precision, is scored at scoring issue c as applicable to the Unit of Assessment.		
c	Information adequacy for management strategy			
	Guide post	Information is adequate to support **measures** to manage **main** in-scope species.	Information is adequate to support a **partial strategy** to manage **main** in-scope species.	**Information is adequate to support a strategy** to manage **all** in-scope species and evaluate with a **high degree of certainty** whether the strategy is achieving its objective.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		Information and data come from a variety of sources including independent Fisheries New Zealand Observer data, industry reporting, contracted fisheries independent research surveys, and contracted projects. The Ministry for Primary Industries (MPI) has a clear and robust system for gathering commercial- and research-related information. Commercial, observer and scientific information is collected in a consistent manner and subject to a strong process of review and validation. The catch monitoring system, that transitioned to the Electronic Reporting System (ERS) in 2019, determines the total catch by QMA and hence the size of the catch by the target fisheries relative		

PI 2.1.3	Information is adequate to determine the impact of the UoA on in-scope species and the effectiveness of management measures or strategies in place
	to the total catch. Trawl vessels submit daily the Fish catch report – an estimate of the top 5 QMS species and top 3 non-QMS species; Processing report - for vessels that process their catch on board. These must be completed and provided before the close of the day; A disposal report - for each fishing event where fish are disposed unless the vessel is submitting processing reports. In this case, they submit a disposal report covering the same period as the processing report; Landing report - a detailed inventory of catch upon landing followed by an update to the report once green weights are confirmed by licensed fish receivers. The landing report covers all species, as opposed to the daily fish catch report, and provide a reliable census of the landed catch per species stock QMA. Whilst not available at the ACDR stage these data will be investigated during the site visit. Observer coverage of deepwater fisheries is planned by financial year and is based on biological information requirements, international requirements, percentage-level coverage targets and observer programme capacity. The level of observer coverage for the different fisheries/sectors is tailored to suit the data and information requirements, including for stock assessment, compliance monitoring and ETP species captures. Fisheries New Zealand considers that 30% coverage is sufficient for most fisheries/sectors but implements high (80-100%) coverage for fisheries where there may be what are deemed by management to be high-risk ETP species (e.g., squid and southern blue whiting trawl fisheries where operations overlap with sea lions). Fisheries New Zealand and the Department of Conservation work together each year to develop a 'seadays plan'. Fisheries New Zealand observers have recorded details of catch and discards by species or species groups for the fleet of vessels involved in the southern blue whiting trawl fishery in every fishing year since 1990–91. Observer coverage in the SBW 6B and SBW 6I fisheries over the last five years has averaged 95.4% (Table 28). The Observer Program Trawl Catch and Effort Logbook includes details covering the shooting of the gear, start, during the tow, end and hauling the gear. Greenweight catch is estimated for the full bag and for each species separately. For processed catch for each species the following are recorded: processed state, grade, number of processed units, unit weight, processed catch weight, conversion factor and greenweight. For all other whole fish that are discarded, discarded alive, lost, mealed, retained as specimens or stored in bulk the following information is recorded: species, type or discard status, greenweight. The observer sea day allocation and cost-recovery system from quota holders, the independence of observers as they are employed by the MPI and the rigorous review and quality assurance processes outlined in the Science and Research Standard for all information collected, provides assurance that there is no possibility that the commercial interests of the fishery directly prejudice the collection or provision of truthful information, meeting TG3 of the Evidence Requirements Framework (ERF) v1.2 (**SG100 is met**). The high level of observer coverage (~100%), the up to date catch profiles and coverage statistics, allow for a census of catches from the independent system of observation, meeting PG3 of the ERF (**SG60 SG80 and SG100 are met)**.

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**100**

Condition number (if relevant)	**NA**

PI 2.2.1 – ETP/OOS species outcome

PI 2.2.1		The direct effects of the UoA do not hinder recovery of the ETP/OOS unit to favourable conservation status		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Direct effects**			
	Guide post	The direct effects of the UoA are **unlikely** to hinder recovery of the ETP/OOS unit to favourable conservation status.	The direct effects of the UoA are **highly unlikely** to hinder recovery of the ETP/OOS unit to favourable conservation status.	There is a **high degree of certainty** that the direct effects of the UoA do not hinder recovery of the ETP/OOS unit to favourable conservation status.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		Per SA3.9.4 If there are no ETP/OOS scoring elements, the team shall award a score of SG100 for scoring issue (a).		

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**100**
Condition number (if relevant)	**NA**

PI 2.2.2 – ETP/OOS species management strategy

PI 2.2.2		The UoA has precautionary management strategies in place designed to: • Ensure that incidental catches of the ETP/OOS unit are minimised and where possible eliminated • Ensure that the UoA does not hinder recovery to Favourable Conservation Status.		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Management strategy in place**			
	Guide post	There are **measures** in place, **if necessary**, that are expected to **minimise** the UoA-related mortality of the ETP/OOS unit and achieve the ETP/OOS outcome SG80 level of performance.	There is a **strategy** in place, **if necessary**, that is expected to minimise the UoA-related mortality of the ETP/OOS unit and achieve the ETP/OOS outcome SG80 level of performance.	There is a **comprehensive strategy** in place that is expected to **minimise** the UoA-related mortality of the ETP/OOS unit and achieve the ETP outcome SG80 level of performance.
	Met?	**Yes**	**Yes**	**Yes**

Rationale

The assessment team is guided by the following:

SA3.10.1 In scoring issue (a), if there are no ETP/OOS scoring elements the team shall apply the term "if necessary".

SA3.10.1.1 The team shall award a score of SG80 for scoring issue (a).

SA3.10.1.2 The team shall still assess SG100 for scoring issue (a).

Per SA3.4.1 the team shall interpret:

"Comprehensive strategy" to mean a complete and tested strategy made up of linked monitoring, analyses, and management measures and responses.

All ETP/OOS species

A range of management measures, including industry-led, non-regulatory initiatives, are employed to monitor environmental interactions in deep water fisheries and to reduce the risk of any adverse effects on protected species populations. Measures relating to the deepwater industry's monitoring of ETP species are described in DWG's Operational Procedures (OPs) and Vessel Management Plans (VMPs), (DWG, 2024), which include:

- Southern Blue Whiting Operation Plan
- Marine Mammals OPs
- Reporting OPs
- Seabirds OPs
- Sharks OPs
- Benthic OPs (implemented in 2021-22)
- Deepwater Trawl VMP (template)
- Trawl Vessel Protected Species Risk Management Plan (template)
- Ten Commandments for:

PI 2.2.2	**The UoA has precautionary management strategies in place designed to:** • **Ensure that incidental catches of the ETP/OOS unit are minimised and where possible eliminated** • **Ensure that the UoA does not hinder recovery to Favourable Conservation Status.**

- Marine Mammals
- Saving Seabirds
- SQU 6T & SBW 6I Fisheries

- Ten Golden Rules for Protected Species Reporting.
- Vessel Notice - Sea Lion Risk Management Actions SBW 6I - Campbell Island (2023)

The Operational Procedures (OPs) for each species-group include elements of identifying and mitigating risk, safe handling and release following capture, reporting and event response, audit and review. They are monitored and administered by the Deepwater Council (DWC) with performance and conformance audited by Fisheries New Zealand Observers. The OPs are underpinned by New Zealand legislation and National Plans of Action (NPOAs).

Key legislation includes :

- Seabird Scaring Devices Regulations 2006: requires trawlers over 28 m LOA to deploy devices to reduce warp risk to seabirds
- Fisheries Act 1996: requires that:
  - measures are taken to avoid, remedy or mitigate any adverse effects of fishing-related mortality on any protected species.
  - This Act also includes requirements to report captures of protected species.
  - All catch be reported
  - All QMS-species be landed if taken, except where Schedule 6 applies and provides for their return to the sea (e.g. blue, mako, porbeagle, rig, school shark and spiny dogfish)
  - Adherence to the prohibition of Shark Finning
- Wildlife Act 1953 states it is an offence to deliberately take, or attempt to take, harass, injure, mutilate or retain all or any part of any Protected Species
- Animal Welfare Act 1999
- Marine Mammals Protection Act 1978: the accidental capture of any marine mammal is permitted provided that the capture is reported to the appropriate authority without delay. It is an offence to accidentally capture a marine mammal and to not report it.

National Plans of Action

New Zealand has a responsibility to act in accordance with the objective of International Plans of Action for Seabirds and Sharks. The two NPOAs applicable to deepwater fisheries are:

NPOA-Sharks 2022

PI 2.2.2	**The UoA has precautionary management strategies in place designed to:** • **Ensure that incidental catches of the ETP/OOS unit are minimised and where possible eliminated** • **Ensure that the UoA does not hinder recovery to Favourable Conservation Status.**
	New Zealand's first NPOA-Sharks was in 2008 and the most recent one was NPOA-Sharks 2013. The 2013 NPOA has been reviewed and the NPOA-Sharks 2022 has been consulted on and a draft NPOA circulated. The final NPOA-Sharks 2022 is imminent with consultations having closed in September 2022. The NPOA sharks 2022's vision is New Zealanders work toward ensuring the long-term viability, biodiversity and functional role of sharks, and that any utilisation of sharks in Aotearoa is sustainable. Its seven goals are: 8) Maintaining biodiversity and ecological long-term viability of shark populations; 9) Ensuring full utilisation of sharks and maintaining the prohibition on shark finning in New Zealand; 10) Avoiding protected and unwanted shark captures, and maximising post release survival; 11) Minimising anthropogenic effects other than direct fisheries impacts; 12) Better Integration of Tangata Whenua Perspectives and Value; 13) International engagement through enhanced monitoring, data collection and information sharing; and 14) Continuous improvement in the research, data and information to conserve and manage sharks, guided by the SEFRA framework and conservation threat status. **NPOA Seabirds** New Zealand's first NPOA was published in 2004 and a revised NPOA-Seabirds published in 2013. The NPOA Seabirds 2020 is New Zealand's third iteration of a national plan of action. The NPOA Seabirds 2020's vision is New Zealanders work towards zero fishing-related seabird mortalities. Its four goals are: 5) Avoiding bycatch — effective bycatch mitigation practices are implemented in New Zealand fisheries; 6) Healthy seabird populations — direct effects of New Zealand fishing do not threaten seabird populations or their recovery; 7) Research and information — information to effectively manage direct fisheries effects on seabirds is continuously improved; and 8) International engagement — New Zealand actively engages internationally to promote measures and practices that reduce impacts on New Zealand seabirds. **ETP and OOS species observer programme** The Conservation Services Programme (CSP), administered by the Department of Conservation, has as its aim to avoid, remedy or mitigate the adverse effects of commercial fisheries on protected species. The CSP Annual Plan outlines the conservation services projects required to be delivered each year and forms the basis for levying the commercial fishing industry to cover these costs under the Fisheries Act 1996. The CSP objectives are as follows (DOC, 2023):

PI 2.2.2	**The UoA has precautionary management strategies in place designed to:** • **Ensure that incidental catches of the ETP/OOS unit are minimised and where possible eliminated** • **Ensure that the UoA does not hinder recovery to Favourable Conservation Status.**
	• Objective A: Proven mitigation strategies are in place to avoid or minimise the adverse effects of commercial fishing on protected species across the range of fisheries with known interactions • Objective B: The nature of direct adverse effects of commercial fishing on protected species is described • Objective C: The extent of known direct adverse effects of commercial fishing on protected species is adequately understood • Objective D: The nature and extent of indirect adverse effects of commercial fishing are identified and described for protected species that are at particular risk to such effects • Objective E: Adequate information on population level and susceptibility to fisheries effects exists for protected species populations identified as at medium or higher risk from fisheries. The CSP planning for middle-depth and deepwater fisheries considers and works in parallel with other relevant planning and management processes such as those prescribed in the following: • National Plan of Action (NPOA) for seabirds • National Plan of Action for sharks • Threat Management Plan (TMP) for the New Zealand sea lion The planning process is iterative and inclusive and ensures that gaps are identified and research synergies are maximised. Observer coverage is planned and prioritised based on specific monitoring objectives for protected species interactions with fisheries and achieving adequate coverage levels for high-risk fisheries to allow detection of changes in bycatch over time. Coverage is aimed at reducing uncertainly around the risks to protected species and assessing mitigation options for identified interactions. The allocation of observer coverage across fisheries is guided by factors including data needs for protected species and fisheries management, compliance, and international obligations, with particular consideration of: • Independently verifying protected species captures • Fishing effort • Past observer coverage • Monitoring of high value stocks or fisheries where there may be a sustainability risk • Current level of information, especially for recently protected species • The status of threatened protected species • Historic mortality of protected species and risk assessment work which has been undertaken • Requirements under the NPOAs and any relevant TMPs or Strategies • Planned and ongoing research priorities/projects for DOC and FNZ

PI 2.2.2	**The UoA has precautionary management strategies in place designed to:** • **Ensure that incidental catches of the ETP/OOS unit are minimised and where possible eliminated** • **Ensure that the UoA does not hinder recovery to Favourable Conservation Status.**
	• Ministerial directives. Observers working in the offshore deepwater and middle-depth trawl fisheries have multiple priorities including stock assessment data collection, compliance monitoring, protected species research and benthic interaction monitoring. As these fisheries have had historically high and consistent levels of observer coverage over the last ten years, they are well characterised. CSP-focused observer days in these fisheries is therefore less than that allocated to monitoring of commercial fishing and recording of associated biological data, but still deemed sufficient for monitoring of ETP species interactions and compliance with mitigation requirements. CSP observer focus in 2023-24 was prioritised in specific fishery areas as follows (DOC, 2023): 1. Cook Strait hoki spawn fishery (HOK 1) – increased observer coverage due to high fur seal interactions. 2. Chatham Rise (HOK 1, HAK1&4, LIN 3&4) - observer focus is on: • ETP coral capture • Monitoring and recording of interactions with, and behaviours of, seabirds • Recording information on mitigation techniques used, including: • bird scaring devices • offal and discard management • trawling known tracks to avoid catching deep sea invertebrates. 3. Sub-Antarctic (HOK 1, HAK 1, LIN 5&6) – observer focus is on: • Monitoring and recording of interactions with, and behaviours of fur seals and sea lions • Seabird interactions and behaviour, due to the close location to many seabird breeding islands • Monitoring of ETP coral captures. 4. West Coast South Island (HOK 1, HAK 7, LIN 7) – observer coverage will target the hoki spawning season during July and August. The fleet has high levels of interactions with fur seals and a wide range of seabirds. The fleet is broadly divided between larger vessels which operate outside the 25 nm line and smaller vessels which operate within 25 nm of the coast. Observer coverage levels are specified specifically for each of these two fleets due to their different fleet dynamics and their associated bycatch profiles (DOC, 2023). The draft Conservation Services Programme Annual Plan 2024/25 presents the priorities for observer program focus and the numerous interaction projects including, for example, determining the efficacy of seabird mitigation in large vessel trawl (DOC, 2024). **DWC Liaison Programme for ETP Species Risk Management** The overall objectives of the Environmental Liaison Officer (ELO) programme is to:

PI 2.2.2	**The UoA has precautionary management strategies in place designed to:** • **Ensure that incidental catches of the ETP/OOS unit are minimised and where possible eliminated** • **Ensure that the UoA does not hinder recovery to Favourable Conservation Status.**

- Visit at least 90% of the deepwater trawl fleet (including fresher, factory, and seasonal hoki), and all scampi and ling bottom longline vessels.
- To train senior crew and vessel managers
- Promote best practice mitigation standards across the fleet and review the DWG standards set out within the OPs.
- Audit Vessel Management Plans (VMPs) and best practice environmental and mitigation practices.
- Encourage improvement and effectiveness of fish waste control and mitigation device use and improve real-time reporting of the capture event.
- Be on call 7 days a week to respond to any multiple or trigger capture event reported by DWG vessels and reply immediately to gather further information and offer advice.

The ELO visits for the 2022/23 fishing season (Cleal, 2023) included 24 of the 25 factory vessels in the deepwater fleet (that includes all 10 SBW trawlers).

The purpose of these vessel visits is to:

- Organise and deliver environmental training resources to senior crew and associated managers.
- Monitor vessel operator's adherence to the agreed environmental risk Operational Procedures (OPs)
- Maintain fleet database of vessels, operators, target species, ports, skippers etc.
- Undertake port call and vessel visits to a minimum of 90% of the fleet
- Analyse all FNZ audits of Vessel Management Plans (VMPs) and OPs, contacting operators with feedback for each and every audit
- Provide expert advice on vessel-specific options for fish waste management and warp mitigation systems and ensure this is documented
- Maintain strong liaison with government – particularly with FNZ, DOC and DOC's Inshore Liaison Officer Programme
- Review VMPs, ensuring each vessel has an effective vessel-specific seabird risk management programme.
- Review and revise VMPs on scampi and hoki fresh fish fleet.
- Provide full induction into DWC programmes to new skippers and/or vessel operators who have moved to new fisheries or have started on new vessels.
- Support reviews and re-drafts of any OPs that require renewal.
- Produce an end-of-year summary report to DWC, FNZ and DOC.

PI 2.2.2	**The UoA has precautionary management strategies in place designed to:** • **Ensure that incidental catches of the ETP/OOS unit are minimised and where possible eliminated** • **Ensure that the UoA does not hinder recovery to Favourable Conservation Status.**
	The ELO additionally visits any vessel that has reported trigger-point captures in order to assess the possible reasons for the captures, whether they could have been prevented, and to educate the skipper on how to reduce the risk of such events re-occurring. The ELO is on-call 24/7 for any communications or requests for support, including for trigger capture events (Cleal, 2019, 2020, 2021, 2022, 2023). Two sea lion trigger events were reported in the SBW fishery in the 2022/23 fishing season. The trigger is a single sea lion. The ELO reinforces to Skippers the regulatory requirements for seabird mitigation, for application by all vessels 28 metres or greater in length, that include: • Deployment of at least one type of seabird scaring device during all tows (i.e., bird bafflers, tori lines or warp deflectors) • Management of fish waste discharge so as not to attract seabirds to risk areas (i.e., no discharge during shooting/hauling; mincing and batch-discharge while towing; installation of mincers/hashers/batching tanks/meal plants; gratings/trap systems to reduce fish waste discharge through scuppers/sump pumps). Seabird risk associated with trawl nets is minimised by: • Removal of stickers before shooting • Minimising the time fishing gear remains at/near the surface • Seabirds caught alive in/on the net are correctly handled and released to ensure maximum chance of survival. Seabird risk associated with deck landings and vessel impacts is minimised by: • Ensuring deck lighting does not attract/disorientate seabirds • Prompt removal of fish waste from the deck • Seabirds that land on the deck or impact with the vessel are correctly handled and released to ensure maximum chance of survival. Many of the same measures for seabirds are applicable to marine mammals but particularly offal waste management, net cleaning and reducing the time the net spends at the surface. For sharks the focus of the OPs is on the safe handling and live release of animals, with comprehensive instructions provided. For marine mammals the focus is to conduct pre-season audits of sea lion exclusion devices (SLED). Cleal (2023) reported “excellent results” with adherence to the FNZ Sea Lion Operational Plan and DWG OPs and that in the SBW season 26 SLEDs had pre-season checks. **Scoring summary** It is clear that the aforementioned measures and programs take account of the spatial and temporal fishing patterns of the fleet and supply informed guidance on the modification of fishing practices, including to mitigate risk to and maximise the likelihood of live release of captured ETP/OOS species. The mitigation measures and safe release protocols have been designed and tested and are considered to qualify as best-practice able to demonstrably achieve minimisation

PI 2.2.2		**The UoA has precautionary management strategies in place designed to:** • **Ensure that incidental catches of the ETP/OOS unit are minimised and where possible eliminated** • **Ensure that the UoA does not hinder recovery to Favourable Conservation Status.**		
		of mortalities to ETP/OOS species in trawl fisheries, this is evidenced by the negligible level of mortalities for all ETP/OOS species with which the fishery interacts. The combination of the OPs, vessel and observer reporting and ELO program provides assurance that a comprehensive strategy is in place that is expected to minimise the UoA-related mortality of the ETP/OOS unit and achieve the ETP outcome SG80 level of performance,, **SG80 and SG100 is met for all ETP species groups and scoring elements.**		
b	**Management strategy effectiveness**			
	Guide post		Evidence indicates that the **measures, strategy or comprehensive strategy** have reduced or **minimised** the mortality of the ETP/OOS unit.	
	Met?		**Yes**	
Rationale		Evidence that the "comprehensive strategy" has succeeded in achieving the objective of reducing or minimising the mortality of all ETP/OOS units can be seen by the negligible levels of mortality for all ETP/OOS species with which the fishery interacts. Per SA3.10.3.1, The team shall interpret "minimised" to mean when both of the following are met: a. The ETP/OOS unit score meets at least the SG80 for PI 2.2.1 scoring issue (a); and b. The ETP/OOS unit score meets the SG100 for PI 2.2.2 scoring issue (a). Following this, for all ETP/OOS units, **SG80 is met** based on the outcome score meeting at least SG80 under 2.2.1 and the availability of a comprehensive strategy for ETP/OOS species management under 2.2.2a.		
c	**Review of alternative measures to minimise mortality of the ETP/OOS unit**			
	Guide post		There is a **review** at least once every 5 years of the **alternative measures** to **minimise** UoA-related mortality of the ETP/OOS unit and they are implemented as appropriate for the ETP/OOS unit.	There is a **review** that happens every 2 years of **alternative measures** to **minimise** UoA- related mortality of the ETP/OOS unit, and they are implemented, as appropriate for the ETP/OOS unit.
	Met?		**Not scored**	**Not scored**
Rationale		Per SA3.10.4 The team shall score scoring issue (c) unless there are no ETP/OOS scoring elements. As such this scoring issue is not scored.		
d	**Shark finning (V2.01 SGs per accepted (V2.01 SGs per accepted Variation Request – Section**11.11.1**)**			

PI 2.2.2		The UoA has precautionary management strategies in place designed to: • Ensure that incidental catches of the ETP/OOS unit are minimised and where possible eliminated • Ensure that the UoA does not hinder recovery to Favourable Conservation Status.		
	Guide post	It is **likely** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		LRQA applied for and were granted a Variation Request – Section 11.11.1 to apply a blanket modification to the assessment tree for scoring issue 2.1.2d and 2.2.2d, applying the requirements of SA2.4.3–SA2.4.7 (MSC V2.01) to ensure that shark finning is not being undertaken in the UoA. See scoring under PI 2.1.2d, **SG60, SG80 and SG100 are met**.		
e	**Ghost gear management strategy**			
	Guide post	There are **measures** in place, **if necessary**, for the UoA that are expected to **minimise** ghost gear and its impact on the ETP/OOS unit.	There is a **partial strategy** in place for the UoA, **if necessary**, that is expected to **minimise** ghost gear and its impact on the ETP/OOS unit.	There is a **strategy** in place for the UoA, **if necessary**, that is expected to **minimise** ghost gear and its impact on the ETP/OOS unit.
	Met?	**Not scored**	**Not scored**	**Not scored**
Rationale		Per SA3.10.6.1 The team shall only assess scoring issue (e) if there are ETP/OOS scoring elements. As such this scoring issue is not scored.		

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**100**
Condition number (if relevant)	**NA**

PI 2.2.3 – ETP/OOS species information

PI 2.2.3		Information is adequate to determine the impact of the UoA on the ETP/OOS unit and the effectiveness of management measures or strategies in place		
Scoring issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impacts			
	Guide post	Information is adequate to **broadly understand** the impact of the UoA on the ETP/OOS unit.	Information is adequate to **estimate** the impact of the UoA on the ETP/OOS unit, and to **estimate** whether the UoA may be a threat to its recovery, with a **high degree of accuracy**.	Information is adequate to **estimate** the impact of the UoA on the ETP/OOS unit, and to **estimate** whether the UoA may be a threat to its recovery, with a **very high degree of accuracy**.
	Met?	**Yes – TG1 is met for all ETP/OOS species**	**Yes – TG2 is met for all ETP/OOS species**	**Yes – TG3 is met for all ETP/OOS species**
Rationale		See PI2.2.2.a for a description of the Conservation Services Programme (CSP), administered by the Department of Conservation and the Deepwater Council Liaison Programme for ETP Species Risk Management. Four main sources of information are used to identify and assess the nature, extent and potential consequences of ETP/OOS species mortality in fisheries within New Zealand's jurisdiction, or fishing by New Zealand vessels on the high seas: 1. Fisheries New Zealand's observer-reported data. This provides data on ETP/OOS species captures, species identification, use of mitigation measures and general fishing practices, photographs of ETP/OOS species caught on fishing vessels, and specimens (seabirds killed by fishing operations) for onshore analysis. 2. Commercial fisher-reported data. This provides data on the spatial and temporal distribution of fishing effort, and on ETP/OOS captures. These data are summarised in annual environmental liaison officer reports. 3. Research outputs on ETP/OOS species biology, demography, ecology, and at-sea distribution. 4. Data collected by, or reported to, RFMOs. The observer non-fish bycatch and protected species interaction forms prescribe the information to be collected by observers. Observed captures include distinction of the capture method (being warp or door, deck, net, mitigation device for trawlers), the identification method (observer, necropsy, imputation, photograph) and whether the observer witnessed the interaction whilst on duty, the life status when first sighted and at the end of the interaction, the fishing method and declared target species (which allows distinction between UoAs) are linked to a specific tow on a specific vessel, the length and sex of the individual and whether it was tagged and associated details. Observers record details of the mitigation equipment used (tori lines, warp scarer, bird baffler). Through the commercial Electronic Reporting System (ERS) vessels must submit a capture of non-fish or protected fish species report. This is a report of any non-fish and protected species caught for a fishing event and must be provided with the corresponding fish catch report. If caught when not fishing, for example, while steaming, the vessel must provide a report before the close of the day on which the permit holder became aware of the capture. Protected species capture		

PI 2.2.3		Information is adequate to determine the impact of the UoA on the ETP/OOS unit and the effectiveness of management measures or strategies in place		
		events are reported through a real-time reporting capture event threshold system against trigger points specified in the reporting and species group Operational Procedures. Assessments of the risk posed to ETP bird species using the estimation of Annual Potential Fatalities (APFs) and Potential Biological Removals (PBRs) (Richard & Abraham, 2015; Baker & Hamilton, 2016; Edwards et al., 2023) and also marine mammals (Abrahams et al 2017, MacKenzie et al 2022) have culminated in the Spatially Explicit Fisheries Risk Assessment (SEFRA) methodology for which observer data are used to determine fleet-level mortality. Observer data are 'groomed' as a form of validation and the similarity between the actual and expected (from the model) number of observed captures is modelled to provide a spatially-oriented numerical summary of model fit. Uncertainty with raised estimates is reported in the form of coefficients of variation or confidence intervals. For ETP/OOS species (ERF, v1.2, GB1.3), "catch estimate" is interpreted to mean an estimate of all direct effects of the UoA. This includes an estimate of all fatal interactions with the species, whether associated with the gear or another aspect of the fishing operation. Interactions with non-fish and protected species bycatch are reported to management authorities when they occur through the ERS system. Operators are also bound by the trawl Operational Procedures for reporting, seabirds, marine mammals and sharks that include reporting when interactions exceed trigger thresholds within a 24-hour or 7-day period. Independent verification of catches with coverage that is representative of the UoA's fishing operations is achieved through the at-sea scientific observer program. Observer coverage in the SBW 6B and SBW 6I fisheries over the last five years has averaged 95.4% (Table 28). The observer program and sampling design covers all major characteristics of the fleet of trawl vessels operating in the UoAs and with ~100% observer coverage it is representative in both time and space. Observers report which component of the fishing or mitigation gear the ETP/OOS species interacted with. They also report non-fishing gear related interactions such as seabird collisions with vessels. The independent catch monitoring system, operated at a high-level of representative coverage provides that most potential sources of bias have been mitigated, and where bias might exist, its effect on trueness is well understood and is not considered to be consequential, **TG3 and therefore SG60, SG80 and SG100 are met**. Table B1 of the ERF prescribes that, for 2.2.3 SI (a), the evaluation of precision, where there are no scoring elements, it is not applicable.		
b	**Information adequacy for management strategy**			
	Guide post	Information is adequate to support **measures** to manage impacts on the ETP/OOS unit.	Information is adequate to support a **strategy** to manage impacts on the ETP/OOS unit, and to measure trends to evaluate the effectiveness of the **measures** to minimise mortality.	Information is adequate to support a **comprehensive strategy** to manage impacts on the ETP/OOS unit, and to evaluate the effectiveness of the **measures** to minimise mortality with a **high degree of certainty**.
	Met?	**Yes**	**Yes**	**Yes**

PI 2.2.3	Information is adequate to determine the impact of the UoA on the ETP/OOS unit and the effectiveness of management measures or strategies in place
Rationale	See PI2.2.2.a for a description of the comprehensive management strategy in place for ETP/OOS species. The range of information collected through statutory reporting to management authorities and independent observations provides the basis for monitoring changes in risk levels to ETP/OOS species with which the trawl UoAs interact. Data and information collection is prioritised to reduce uncertainty in formal, quantitative risk assessments for protected species, and to provide information on issues where there is public interest in of risks from fishing to the aquatic environment. Implementation of a risk-based approach has enabled prioritisation of areas on which to focus mitigation or data collection efforts. The National Institute of Water and Atmospheric Research (NIWA) currently carries out the role of Data Manager and Custodian for the fisheries research data owned by the Ministry for Primary Industries (MPI). The Centralized Observer Database (COD) is dedicated to information collected by Ministry scientific observers. Observer data are reported through multiple platforms such as the DragonFly Science protected species capture website and numerous research studies the likes of SEFRAs for marine mammals and seabirds. Drivers of research in this area include the National Plan of Action (NPOA)-Seabirds and NPOA-Sharks. The Aquatic environment and biodiversity annual review (AEBAR) last updated in 2021, with Chapter 10 chondrichthyans updated 2024, primarily addresses interactions between the seafood sector, biodiversity, and the aquatic environment. The AEBAR is supported by more detailed reports and science papers published on-line each year. The information contained within the AEBAR informs decision-making in Fisheries New Zealand. The AEBAR is organised by topic (e.g., protected species, bycatch, benthic impacts, etc.), and almost all topics involve more than one fish stock or fishery. Overall, information is adequate to support a comprehensive strategy to manage impacts on the ETP/OOS unit. **SG60 SG80 are met**. The observer program and sampling design covers all major characteristics of the fleet of trawl vessels operating in the UoAs and with ~100% observer coverage it is representative in both time and space. Observers report which component of the fishing or mitigation gear the ETP/OOS species interacted with. They also report non-fishing gear related interactions such as seabird collisions with vessels. Through this comprehensive reporting program, and noting negligible interactions with any ETP/OOS species, the effectiveness of measures to minimise mortality can be evaluated with a high degree of certainty, **SG100 is met**.

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**100**
Condition number (if relevant)	**NA**

PI 2.3.1 – Habitats outcome

PI 2.3.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(ies) responsible for fisheries management in the area(s) where the UoA operates		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Less sensitive habitats**			
	Guide post	The UoA is **unlikely** to reduce structure and function of **less** sensitive habitats to a point where there would be **serious or irreversible harm**.	The UoA is **highly unlikely** to reduce structure and function of **less** sensitive habitats to a point where there would be **serious or irreversible harm**.	There is **evidence** that the UoA is **highly unlikely** to reduce structure and function of **less** sensitive habitats to a point where there would be **serious or irreversible harm**.
	Met?	**Yes – all BOMEC classes**	**Yes – all BOMEC classes**	**Yes – all BOMEC classes**
Rationale		Overlaying the footprint of the southern blue whiting fisheries on the BOMEC classes shows that these fisheries are primarily contacting benthos in classes: L (9.32%), F (5.09%) and I (4.38%) and that their footprint is minor (Table 49). Table 49: The total area of each BOMEC class within the EEZ+TS and the percentage of each area covered by the 1990-2021 footprint of Tier 1 deepwater species. Note: – indicates no overlap. Source: (MacGibbon & Mules, 2023). Footprint area overlap (%) Class | Area (km²) | HAK | HOK | JMA | LIN | OEO | ORH | SBW | SCI | SQU | Tier 1 A | 30 661.00 | 0.00 | 0.50 | 0.39 | 0.03 | 0.01 | 0.13 | 0.01 | 0.22 | 1.23 | 2.46 B | 12 786.10 | 0.38 | 6.16 | 0.65 | 2.93 | 0.01 | 0.09 | 0.13 | 0.05 | 0.36 | 10.21 C | 90 256.50 | 0.09 | 3.12 | 27.87 | 0.37 | 0.01 | 0.10 | – | 0.62 | 1.72 | 33.09 D | 28 085.70 | 0.02 | 3.04 | 1.70 | 0.65 | 0.07 | 0.14 | – | 0.01 | 4.34 | 8.25 E | 61 258.00 | 0.39 | 9.00 | 14.39 | 2.30 | 0.13 | 0.03 | 0.01 | 0.16 | 25.38 | 34.01 F | 38 775.80 | 0.04 | 1.08 | 0.31 | 1.17 | 0.01 | 0.00 | 5.09 | 0.76 | 11.24 | 17.66 G | 6 702.30 | 1.14 | 31.65 | 0.27 | 11.37 | 0.06 | 1.44 | – | 1.48 | 0.08 | 42.21 H | 138 399.10 | 5.58 | 28.12 | 7.72 | 7.25 | 0.05 | 0.16 | 0.02 | 8.31 | 5.24 | 43.69 I | 52 008.30 | 3.75 | 66.14 | 0.64 | 8.57 | 0.56 | 0.24 | 4.38 | 0.10 | 9.75 | 73.92 J | 312 604.90 | 3.16 | 12.02 | 0.32 | 0.85 | 2.50 | 10.64 | 0.01 | 0.83 | 0.58 | 24.91 K | 1 200.20 | – | 0.23 | – | – | – | 0.03 | – | – | – | 0.26 L | 198 578.40 | 0.45 | 15.89 | 0.03 | 3.85 | 0.03 | 0.00 | 9.32 | 2.73 | 2.16 | 28.42 M | 233 837.40 | 0.08 | 4.53 | 0.00 | 0.09 | 2.88 | 0.37 | 0.26 | 0.01 | 0.17 | 7.88 N | 495 154.20 | 0.00 | 0.31 | 0.01 | 0.01 | 0.42 | 1.78 | 0.00 | 0.03 | 0.06 | 2.37 O | 1 006 911.10 | – | 0.00 | – | 0.00 | 0.02 | 0.04 | – | 0.00 | 0.00 | 0.05 All | 2 707 219.00 | 0.78 | 6.18 | 1.73 | 1.06 | 0.64 | 1.63 | 0.87 | 0.77 | 1.56 | 12.14 The limited overlap and interaction of the SBW trawl fishery with less sensitive habitats, i.e. being <20% any BOMEC Class, suffices as evidence that the UoAs are highly unlikely to reduce structure and function of less sensitive habitats to a point where there would be serious or irreversible harm. **SG60, SG80 and SG100 are met.**		
b	**More sensitive habitats**			
	Guide post	The UoA is **unlikely** to reduce structure and function of **more**	The UoA is **highly unlikely** to reduce structure and function	There is **evidence** that the UoA is **highly unlikely** to

PI 2.3.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(ies) responsible for fisheries management in the area(s) where the UoA operates		
		sensitive habitats to a point where there would be **serious or irreversible harm**.	of **more** sensitive habitats to a point where there would be **serious or irreversible harm**.	reduce structure and function of **more** sensitive habitats to a point where there would be **serious or irreversible harm**.
	Met?	**Yes**	**Yes**	**Yes**

Rationale

As a basis for estimating the impact of the southern blue whiting fisheries on sensitive benthic habitats, the recent trawl footprint for the period 2018-19 to 2022-23 fishing years was plotted against predicted coral distributions for protected corals, bryozoans, sponges and anemones at the >50th percentile level. The analysis suggests that the southern blue whiting UoA trawl fisheries may have a very minor impact on these sensitive benthic habitats (Table 50).

Table 50: Southern blue whiting UoAs trawl footprint overlap with predicted distributions of benthic habitat-forming taxa. Data source: FNZ. Analysis: L. Easterbrook-Clark, GNS Science (pers. comm.)

Taxa	Parameters	Metrics
ETP Corals	Predicted distribution (km^2) within UoAs	160,165
	Trawl footprint in predicted area (km^2)	15.3
	Percentage of predicted area towed	**0.01%**
Bryozoans	Predicted distribution (km^2) within UoAs	17,243
	Trawl footprint in predicted area (km^2)	0
	Percentage of predicted area towed	**0%**
Sponges	Predicted distribution (km^2) within UoAs	189,425
	Trawl footprint in predicted area (km^2)	3,226
	Percentage of predicted area towed	**1.7%**
Anemones	Predicted distribution (km^2) within UoAs	97,745
	Trawl footprint in predicted area (km^2)	3,005
	Percentage of predicted area towed	**3.1%**

The limited overlap and interaction of the SBW trawl fishery with more sensitive habitats, i.e. being <20% of the predicted distribution of those habitats, suffices as evidence that the UoAs are highly unlikely to reduce structure and function of more sensitive habitats to a point where there would be serious or irreversible harm. **SG60, SG80 and SG100 are met.**

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**100**
Condition number (if relevant)	**NA**

PI 2.3.2 – Habitats management strategy

PI 2.3.2		**There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats**		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Management strategy in place**			
	Guide post	There are **measures** in place, **if necessary**, that are expected to achieve the habitat outcome SG80 level.	There is a **partial strategy** in place, **if necessary**, that is expected to achieve the habitat outcome SG80 level or above.	There is a **strategy** in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	Met?	**Yes**	**Yes**	**No**
Rationale		Per SA3.13.2.1, In scoring issue (a) at the SG60 and SG80 levels, the "measures" or "partial strategy" respectively, for a UoA that encounters "more sensitive" habitats shall include, at a minimum: a. Requirements to comply with management "measures" to protect "more sensitive" habitats. b. Implementation by the UoA of precautionary measures to avoid encounters with "more sensitive" habitats and avoid potential serious or irreversible harm. The main protection measures for benthic habitats established in the New Zealand EEZ to date have been the 'Seamount' Closures and the Benthic Protection Areas. Marine reserves, SCAs, BPAs and other major spatial restrictions to trawling are presented in Figure 25 and constitute management "measures" designed to protect "more sensitive" habitats by limiting the direct impacts to those habitats from trawl gear. The functioning regulatory framework is explicit with the ban on bottom-contacting gear within all BPAs and SCAs and as such represents a precautionary approach. It is a statutory requirement to report captures of protected invertebrate species (corals, bryozoans, sponges) through the Electronic Reporting System (ERS) Non-fish and Protected Species (NFPS) form and all other benthic catch should be reported in the disposals report. Reported captures of protected and non-protected benthos enable avoidance or mitigation of catches of benthos through reviews of significant catches of benthos and make relevant operational decisions subsequently. To facilitate implementation and monitoring of performance of DWG's Operational Procedures, DWG has an Environmental Liaison Officer (ELO) whose role is to train vessel operators and monitor vessel operators' adherence to agreed environmental risk OPs. Independent fishery observers are required to monitor and report all interactions with benthic habitat forming invertebrates through the benthic interactions form. A summary of the observer and industry-reported catches of ETP and non-ETP benthic species is published in the Annual Review Report for Deepwater Fisheries (FNZ, 2023a), this provides a cohesive link between the two data streams and acts as an indicator of the alignment of the two data sources. All vessels are required to operate in accordance with a principle of avoidance from areas where there may be significant catches of benthos as a result of prior experience or knowledge, as prescribed by the Fisheries Act (1996) that requires *avoiding, remedying or mitigating any adverse*		

PI 2.3.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats		
		effects of fishing on the aquatic environment. This strategy includes consideration of the effects of weather and tide on the vessel's operations and the ability to maintain gear on targeted tow lines and not drift or be forced off into areas of significant benthos. The combination of spatial measures and mandatory reporting constitutes a partial strategy that is expected to achieve the habitat outcome SG80 level or above. **SG60 and SG80 are met**. Per SA3.13.2.2 In scoring issue (a) at the SG100 level: a. The "strategy" for a UoA that encounters "more sensitive" habitats shall include a comprehensive management plan that is supported by a comprehensive impact assessment that determines that all fishing activities will not cause serious or irreversible harm to "more sensitive" habitats. b. A management "strategy" shall be in place for all UoAs, including those that do not regularly contact benthic habitats, because gear loss or unexpected benthic impact could occur. While the strategy is designed to avoid serious or irreversible harm to these habitats, it can only be considered a partial strategy. While the strategy is designed to avoid serious or irreversible harm to these habitats, it can only be considered a partial strategy as there does not appear to be comprehensive impact assessment that determines that all fishing activities will not cause serious or irreversible harm to "more sensitive" habitats. **SG100 is not met.**		
b	**Management strategy effectiveness**			
	Guide post	The **measures**, **if necessary**, are considered **likely** to work, based on **plausible argument**.	There is some **evidence** that the measures/partial strategy, **if necessary**, is achieving the objectives set out in SI (a), based on **information directly about the UoA and/or habitats** involved.	There is evidence that the **partial strategy/strategy** is achieving the objectives set out in SI (a), based on **information directly about the UoA and/or habitats** involved.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		The main management measure to conserve more sensitive habitats are spatial exclusions from areas of sensitive habitats. Near-real-time Geospatial Position Reporting and daily Electronic Catch Reporting are mandatory in the southern blue whiting trawl fleet. Fisheries New Zealand still combines this functionality with at-sea and aerial surveillance, supported by the New Zealand Defence Force. This independently provides surveillance of activities of deep-water vessels through inspection and visual capability to ensure these vessels are fully monitored and verified to ensure compliance with both regulations and with industry-agreed Operational Procedures. The Ministry for Primary Industries audits commercial vessel catch-effort and landing reports and reconciles these against multiple sources including VMS records and data collected by onboard MPI observers to ensure that all catches are reported correctly and vessels are adhering to spatial restrictions. There were no reported 'significant catches' of benthos constituting benthic triggers in the last 5-years (per ELO reports for the period 2018/19-2022/23). This is supported by analysis of incidental catches of sessile benthic invertebrate taxa during the period 1989-90 to 2022-23 and in 2022-23 (Table 45), that shows sponges and anemones were encountered by a very minor percentage of		

PI 2.3.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats		
		tows and in minor quantities. These data, indicating the low proportion of trawls that are reported to encounter sessile benthic invertebrate taxa, reflect the predominantly midwater nature of the fishery with few tows interacting with benthos and provide evidence that the operational areas and practices of the trawl fishery for southern blue whiting are effective to limit impacts on habitats. **SG60, SG80 and SG100 are met.**		
c	**Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect more sensitive habitats**			
	Guide post	Information is adequate to **broadly understand** compliance in the UoA with management requirements to protect **more** sensitive habitats.	Information is adequate to **determine**, with a **high degree of accuracy**, compliance in the UoA with both its management requirements and protection measures afforded to **more** sensitive habitats by other MSC UoAs/non-MSC fisheries, **where relevant**.	Information is adequate to **determine**, with a **very high degree of accuracy**, compliance in the UoA with both its management requirements and with protection measures afforded to more sensitive habitats by other MSC UoAs/ non-MSC fisheries, **where relevant**.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		In assessing scoring issue c the assessment team are required to apply B1.2 of the Evidence Requirement Framework (ERF) to assess the trueness of information with respect to compliance with management regulations and other measures to protect more sensitive habitats. This includes: • Information to confirm that the UoA has adopted management regulations and other measures to protect more sensitive habitats in the managed area; and • Information to confirm that, within the UoA, the management regulations and other measures to protect more sensitive habitats in the managed area are enforced. As part of this, the team should consider if there is clear documentation regarding the management measures and the extent to which the details of those measures are accessible to, and understood by, fishers in the UoA. The team should also consider the method and extent of the monitoring of compliance with spatial management measures in the UoA. Per SA3.13.3.2, *The team shall not consider levels of compliance in scoring issue (c), but rather the information available to determine this*. The main management measure to conserve more sensitive habitats are spatial exclusions from areas of sensitive habitats. There is clear documentation of management measures for benthos (see scoring under PI2.3.1). The measures are communicated to vessel operators by the Environmental Liaison Officer (ELO) and ELO reports are produced annually summarising the main objectives for the year and areas of success as well as areas requiring further, targeted, work. Per SA3.13.3.3, *In determining "where relevant", the team shall consider and document:* *a. Areas where closure is clearly aimed at precautionary protection of more sensitive habitats, based on scientific rationale and best practice. The team shall not include closures that are designed for other purposes.*		

PI 2.3.2	There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats

b. Avoidance of closed areas arising from move-on rules and consideration of other "measures" implemented by all MSC UoAs.
c. Avoidance of any relevant move-on areas implemented by non-MSC fisheries if the area coordinates are available.

The area of operation of the southern blue whiting fishery overlaps with the hoki, hake and ling bottom trawl fishery occur. More sensitive habitat management measures for that fishery are therefore relevant to this scoring issue. Both fisheries fall under the purview of the Deepwater Group and the same ELO and are managed to the same degree and extent. Where relevant, notifications and area closures applicable to the hake, hoki, ling trawl fishery would therefore be communicated to the southern blue whiting fishery vessels and abided by.

Benthic Protection Areas (BPAs) are applicable to bottom trawl and dredge fisheries where trawling is not permitted to take place within 100m of the sea floor. Since they are prescribed for the precautionary protection of more sensitive habitats the BPAs meet the definition of where relevant under SA3.13.3.3 a. As the SBW fishery is semi-pelagic in nature there would need to be confirmation that, when fishing within BPAs, the gear was never in breach of the 100m limit. Before entering a BPA, vessel operators must inform the Fisheries Communication Centre of which BPA they intend to enter, and that they will be off-bottom trawl fishing. Two observers must be on board the vessel and must be told before the off-bottom trawling begins. The vessel must have an electronic net monitoring system (ENMS) that continuously records when trawling:

- the depth of the ground rope and seabed
- the date and time
- the latitude and longitude of the vessel
- any other information that may be required

To structure their evaluation of information trueness the assessment team are required to assess to what extent (ERF, Table GB2):

- the information free from conflict of interest;
- the information pertinent or connected to the matter in hand;
- does the information capture all relevant elements and dimensions; and
- are different information sources in agreement.

Near-real-time Geospatial Position Reporting and daily Electronic Catch Reporting are mandatory in the trawl fleet. Fisheries New Zealand still combines this functionality with at-sea and aerial surveillance, supported by the New Zealand Defence Force. This independently provides surveillance of activities of deep-water vessels through inspection and visual capability to ensure these vessels are fully monitored and verified to ensure compliance with both regulations and with industry-agreed Operational Procedures. The Ministry for Primary Industries audits commercial vessel catch-effort and landing reports and reconciles these against multiple sources including VMS records and data collected by onboard MPI observers to ensure that all catches are reported correctly and vessels are adhering to spatial restrictions. The requirements for off-bottom trawling within BPAs, associated notifications and presence of two observers and ENMS to confirm fishing depth supports the evaluation of information trueness.

PI 2.3.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats		
		It is clear that within the information system available to determine compliance in the UoA with both its management requirements and with protection measures afforded to more sensitive habitats by other MSC UoAs/non-MSC fisheries, that most potential sources of bias have been mitigated, and where bias might exist, its effect on trueness is well understood and is not considered to be consequential. **TG3 and consequently SG60, SG80 and SG100 are met**.		
d	**Ghost gear management strategy**			
	Guide post	There are **measures** in place, **if necessary**, for the UoA that are expected to **minimise** ghost gear and its impact on all habitats.	There is a **partial strategy** in place for the UoA**, if necessary**, that is expected to **minimise** ghost gear and its impact on all habitats.	There is a **strategy** in place for the UoA, **if necessary**, that is expected to **minimise** ghost gear and its impact on all habitats.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		New Zealand maintains stringent regulations to ensure garbage lost at sea from vessels is minimised. The regulations primarily fall under the Maritime Protection Rules but there are also components of the Fisheries Act (1996) which reduces risk of gear being lost. Vessels are also required by law to report lost gear to authorities as shown in the extracts below. Maritime Protection Rules 170.3. General prohibition on discharge of garbage into the sea: 3. Garbage is a harmful substance for the purposes of section 225 of the Act. 4. The discharge of garbage [including fishing gear] into the sea from a ship is prohibited, except as provided in this Part or the Act. 170.4. General exceptions to prohibition: Nothing in this Part prohibits or restricts any person from discharging garbage from a ship if – e) the discharge is an accidental loss of fishing gear from a ship and all reasonable precautions have been taken to prevent such loss; or f) the discharge is a discharge of fishing gear from a ship for the protection of the marine environment or for the safety of that ship or its crew. 170.21. Reporting accidental loss or discharge of fishing gear: In the event of an accidental loss or discharge of fishing gear referred to in 170.4(c) or (d) that poses a significant threat to the marine environment or navigation, the owner and the master of a ship to which this rule applies must report the accidental loss or discharge: c) to the Director; and d) if the accidental loss or discharge occurs within waters subject to the jurisdiction of a coastal State, to the appropriate authority in that coastal State. **DWC Management Strategy for lost gear**		

PI 2.3.2	There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats
	All vessels are required by law to report lost gear. This is done via Electronic Reporting System (ERS). There have been three lost gear events recorded through ERS between 2019-20 to 2021-22 for the HOK/HAK/LIN and southern blue whiting trawl fisheries combined. For one of these events the trawl was retrieved using grapnels. It is not clear what the situation was for the other two events i.e. what the specific gear was and whether it was retrieved or not. In addition to their statutory requirements vessel operators in the SBW trawl fishery have management strategies in place to prevent, mitigate and remediate gear lost or abandoned at sea (Table 48). Discarding gear at sea is prohibited unless under the circumstances noted above. The combination of statutory and fishery-specific management measures, alongside reporting through the ERS and low likelihood and incidence of gear loss on the trawl fishery, constitutes a strategy that is expected to minimise ghost gear and its impact on habitats, **SG60 SG80 and SG100 are met**. More detailed ERS reporting is recommended to determine the exact cause of gear loss and subsequent outcome (details of retrieval or reason for abandonment).

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**95**
Condition number (if relevant)	**NA**

PI 2.3.3 – Habitats information

PI 2.3.3		Information is adequate to determine the impact of the UoA on habitats, including changes in the risk posed by the UoA over time		
Scoring issue		SG 60	SG 80	SG 100
a	Information quality			
	Guide post	The types and distribution of habitats are **broadly understood**.	The nature, distribution, and **vulnerability** of habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA.	The distribution of habitats is known over their range, with particular attention given to the occurrence of **vulnerable** habitats. habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		Per SA3.14.1 The team shall interpret "vulnerability" for the SG80 and SG100 levels to mean the combination of: a. The likelihood that the gear would encounter the habitat. b. The likelihood that the habitat would be altered were an encounter between the gear and the habitat to occur. In New Zealand the Benthic-Optimised Marine Environment Classification, BOMEC (Leathwick et al. 2012), used a combination of environmental predictors and distributional data for eight taxonomic groups to train an environmental classification for New Zealand's Exclusive Economic Zone (EEZ) with depths of 3000m or less. The combination of these predictors and biota meets the requirements of SA3.12.2 (MSC V3.1) for recognising distinct benthic habitat types (Figure 18). The nature and distributions of habitats are known at a level of detail relevant to the scale and intensity of the UoA. **SG60 is met.** The most recent spatial analysis (MacGibbon and Mules, 2023) of bottom-contacting trawl effort by commercial trawlers within the New Zealand 200 nm Exclusive Economic Zone and Territorial Sea (EEZ+TS), in waters open to trawling down to 1600 m in depth (the 'fishable area'), provides an assessment of spatial coverage of bottom-contacting tows for the period 1990-2021 and 2021 exclusively. The 'fishable' area represents waters in 0–1600 m depths that are open to trawling: that is, waters exclusive of Benthic Protection Areas (BPAs) that were introduced in 2007, closed areas to protect underwater features including seamounts (the first of which were closed in 2001), marine farms, and marine reserves. Overlap is reported both against BOMEC areas (Table 49) and depth zone (Table 41) and indicates further that bottom contact was targeted at the preferred habitat of the target species Table 42). This work speaks to the likelihood that the UoAs fishing gear would encounter the various habitat types within the managed area (meeting SA3.14.1a). Clarke et al 2019 investigated the resilience and recovery dynamics of deep-sea habitats impacted by bottom trawling at the Graveyard Knolls, a group of six small seamount features off New Zealand. Their study indicated that as few as 10 trawls in deep-sea environments can reduce average coral cover from 15 to 20% down to zero (no visible cover). Additionally Rowden et al 2024 characterized mobile bottom fishing gear configurations and assessed the spatial and temporal extent of bottom contact by those various configurations. The approach by Rowden et al 2024 took into account the relative widths of 24 separate gear categories (incorporated directly		

PI 2.3.3		Information is adequate to determine the impact of the UoA on habitats, including changes in the risk posed by the UoA over time		
		into Swept Area Ratio (SAR) calculations) to estimate the Relative Benthic Status (RBS) as a quantitative method for assessing risk to benthic habitats by mobile bottom fishing methods. That work speaks to the likelihood that the habitat would be altered were an encounter between the gear and the habitat to occur (meeting SA3.14.1b). The consideration of vulnerability (as required per SA3.14.1), at a level of detail relevant to the scale and intensity of the UoA, satisfies the SG80 requirements, **SG80 is met.** As a basis for estimating the impact of the southern blue whiting fisheries on sensitive benthic habitats, the recent trawl footprint for the period 2018-19 to 2022-23 fishing years was plotted against predicted coral distributions for protected corals, bryozoans, sponges and anemones at the >50th percentile level. The analysis suggests that the southern blue whiting UoA trawl fisheries may have a very minor impact on these sensitive benthic habitats (Table 50). It is clear that particular attention is paid to vulnerable habitats and the UoAs impacts on them are known at a level of detail relevant to the scale and intensity of the UoA. **SG100 is met**.		
b	**Information adequacy for assessment of impacts**			
	Guide post	Information is adequate to **broadly understand** the impacts of gear use on habitats.	Information is adequate to **estimate** the impacts of the UoA on habitats with a **high degree of accuracy**.	Information is adequate to **estimate** the impacts of the UoA on habitats with a **very high degree of accuracy**.
	Met?	**Yes - TG1 (all habitats)** **Yes - PG1 (more sensitive habitats)**	**Yes – TG2 (all habitats)** **Yes – PG2 (more sensitive habitats)**	**Yes – TG3 (all habitats)** **Yes – PG3 (more sensitive habitats)**
Rationale		Per SA3.14.2 In scoring issue (b), the team shall apply the Evidence Requirements Framework in Tool B of the MSC Fisheries Standard Toolbox to determine which guidepost is met. Per Table B1 of the ERF, B1.2 (trueness) applies to all scoring elements and B1.3 (precision) applies to all scoring elements that are a habitat-forming species associated with more sensitive habitats. Information on the spatial and temporal distribution of fishing effort in the UoA in relation to habitats is available for all less and more sensitive habitat scoring elements through MacGibbon and Mules (2023) reporting the extent and intensity of bottom contact by trawl fisheries using data from 1990-2021. Clarke et al 2022 also reported the extent and intensity of trawl effort on or near the seafloor of UTFs for each fishing year between 1989/90 and 2019/20. Information on catches in the UoA of habitat-forming species associated with more sensitive habitats are available through the commercial ERS whereby vessels must submit a capture of non-fish or protected fish species (NFPS) report. All landings of protected corals must be returned to the water immediately, and commercial fishers must report their capture on NFPS catch returns. FNZ observers also record landing of both protected and other benthic bycatch such as anemones, bryozoans, sea pens and sponges. The assessment team determines that based on the relevance of information and information categories available that most potential sources of bias have been mitigated, and where bias might exist, its effect on trueness is well understood and is not considered to be consequential. **TG3 is met.**		

PI 2.3.3		Information is adequate to determine the impact of the UoA on habitats, including changes in the risk posed by the UoA over time		
		With regards to the precision of information available with respect to habitat-forming species associated with more sensitive habitats the team is required to assess whether the catch monitoring system in place facilitates (ERF, B1.3.2): a. The estimation of catches; and b. Reporting of catch information to management authorities; and c. Independent verification of catches Information on catches in the UoA of habitat-forming species associated with more sensitive habitats are available through the commercial ERS whereby vessels must submit a capture of non-fish or protected fish species (NFPS) report. All landings of protected corals must be returned to the water immediately, and commercial fishers must report their capture on NFPS catch returns. FNZ observers also record landing of both protected and other benthic bycatch such as anemones, bryozoans, sea pens and sponges and the UoA fisheries have been observed at a high level of coverage over the period 2018-19 to 2022-23 at close to 100%. In both cases reports are submitted to Ministry for Primary Industries, Fisheries New Zealand (the management authority) and are reported in the Annual Review Report for Deepwater Fisheries. The high level of observer coverage, the up to date catch profiles and coverage statistics satisfy the requirements of PG3 of the ERF. Therefore **SG60, SG80 and SG100 are met**.		
c	**Monitoring**			
	Guide post		Adequate information continues to be collected to detect any increase in risk to habitats.	Changes in habitat distributions over time are measured.
	Met?		**Yes**	**Yes**
Rationale		Per GSA3.14, When scoring issue (c) at the SG80 level, the team should consider all potential increases in risk, such as changes in: • The scoring of the outcome PI. • The operation of the UoA. • The effectiveness of the measures. The operation of the UoA and the areas trawled are well monitored, sufficiently so that the impacts of fishing on benthic habitats can be monitored through annual reporting of the trawl footprint and the capture of benthic organisms (see for example MacGibbon and Mules 2023). The effectiveness of habitat management measures, including spatial restrictions, gear limitations and reporting (see PI2.3.2 for a detailed description of measures in place) are monitored through near-real-time Geospatial Position Reporting and mandatory daily Electronic Catch Reporting in the trawl fleet. Fisheries New Zealand still combines this functionality with at-sea and aerial surveillance, supported by the New Zealand Defence Force. This independently provides surveillance of activities of UoA vessels through inspection and visual capability to ensure these vessels are fully monitored and verified to ensure compliance with both regulations and with industry-agreed Operational Procedures. The Ministry for Primary Industries audits commercial vessel catch-effort and landing reports and reconciles these against multiple sources including		

PI 2.3.3	Information is adequate to determine the impact of the UoA on habitats, including changes in the risk posed by the UoA over time
	VMS records and data collected by onboard MPI observers to ensure that all catches are reported correctly and vessels are adhering to management measures. **SG80 is met.** Iterative updates to benthic habitat maps and classification systems have been undertaken in New Zealand beginning with the original Marine Environment Classification in 2005 (Snelder et al. 2005). This was followed by a classification optimised for demersal fish (Leathwick et al. 2006), the Benthic-Optimised Marine Environment Classification, BOMEC (Leathwick et al. 2012) and most recently the Seafloor Community Classification (SCC, Stephenson et al. 2021). Additionally analyses using species distribution modelling have identified potential 'coral hotspots' (Anderson et al., 2023). The iterative research and updates to benthic habitat mapping as well as a particular focus on more sensitive habitats enshrined in policies such as the Aotearoa New Zealand Biodiversity Strategy (DOC, 2022) provides information on the changes in habitat distributions over time and allows the impacts of the UoAs on those habitats to be measured. **SG100 is met.**

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**100**
Condition number (if relevant)	**NA**

PI 2.4.1 – Ecosystem outcome

PI 2.4.1		The UoA does not cause serious or irreversible harm to the key elements underlying ecosystem structure and function		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Ecosystem status**			
	Guide post	The UoA is **unlikely** to disrupt the **key** elements underlying ecosystem structure and function to a point where there would be serious or irreversible harm.	The UoA is **highly unlikely** to disrupt the **key** elements underlying ecosystem structure and function to a point where there would be serious or irreversible harm.	There is **evidence** that the UoA is **highly unlikely** to disrupt the **key** elements underlying ecosystem structure and function to a point where there would be serious or irreversible harm.
	Met?	**Yes**	**Yes**	**No**

Rationale

Per *SA3.15.4 The team shall interpret "key" ecosystem elements as:*

a. *The features of an ecosystem considered most crucial to the ecosystem's characteristic nature and dynamics.*
b. *The features most crucial to maintaining the integrity of its structure and functions and the key determinants of its resilience and productivity.*

Per *Table GSA2: MSC outcome expectations for each P2 component:*

> *Changes caused by the fishery that fundamentally alter the capacity of the ecosystem to maintain its key structure and function or recover from the impact. The team may interpret this to mean changes that seriously reduce the ecosystem services provided by the component to the fishery, to other fisheries, and human uses.*

The assessment team has determined that the key ecosystem element to be assessed is:

- Southern blue whiting biomass

Southern blue whiting is one of the dominant (in terms of biomass) middle depth fish species found on the Campbell Plateau (SBW 6I) and Bounty Plateau (SBW 6B) at depths between 250–600 m. The stocks are characterised by highly variable year-class strengths, with strong year classes growing at a significantly lower rate than others (i.e. showing signs of density dependent growth). Their substantial abundance suggests that southern blue whiting are probably an important part of the Campbell Rise and Bounty Plateau ecosystems, but their variability suggests that these systems may function differently at different times. Very large changes have been observed in abundance on the Bounty Plateau, with a 7-fold increase between 2005 and 2007 followed by a 4-fold decrease to 2009 (Dunn & Hanchet 2011). The large increase was due to the very strong 2002 year-class recruiting to the fishery, but the rapid decline is not easily explained. Whatever the reason, there are likely to be implications for the role of the southern blue whiting population in the ecosystem during such events.

Data from the Sub-Antarctic trawl survey series were used to derive fish-based ecosystem indicators using diversity, fish size, and trophic level. There were generally increasing trends in the proportion of threatened fish species and those with low resilience, while indices of fish diversity often showed positive trends. The proportion of piscivorous and demersal species and the mean trophic level generally declined over the time-period, especially in areas where southern

PI 2.4.1	The UoA does not cause serious or irreversible harm to the key elements underlying ecosystem structure and function
	blue whiting are more common. It was postulated that the highly variable recruitment of dominant species like southern blue whiting may strongly influence such trends Tuck et al (2009). Both stocks of southern blue whiting are highly likely to be above the point of recruitment impairment and fluctuating around a level consistent with biomass at maximum sustainable yield (see PI1.1.1). Based solely on this measure it is determined that the UoAs are unlikely to disrupt this key element underlying ecosystem structure and function to a point where there would be serious or irreversible harm. **SG60 is met**. Tuck et al. 2009 provided an ecosystem-focused review of data from the Chatham Rise and Sub-Antarctic trawl surveys. Their analyses showed some evidence of change in ecosystem indicators over time, including evidence of increasing evenness (reducing diversity) but no evidence that species were being lost from the food-web. While longer time-series would increase certainty, the available data (Tuck 2009) show no evidence of species loss. The MSC Standard V3.1 does not provide a definition of 'serious or irreversible' harm with respect to key ecosystem elements, however in light of no evidence of species loss, the lack of evidence for adverse ecosystem effects (e.g., trophic cascades), low discard rates, and strengthened regulatory measures support the conclusion that the UoAs are highly unlikely to disrupt community composition/diversity to the point where that would be the case. **SG80 are met.** The lack of more up to date determinations based on analyses of a longer time-series of trawl survey data limits means that there is not evidence conclude this with a higher degree of certainty and for all areas fished by the UoAs. Dialogue with ecosystem experts during the site visit reflected consensus that there is an abundance of information available from research trawl surveys to build on the work of Tuck et al 2009 but simply a lack of impetus to do so in light of other priorities. **SG100 is not met**. A Recommendation (#3) is raised that the fishery review and collate available research trawl information/data that may be used to provide up to date determinations of changes to key ecosystem indicators and evidence that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be serious or irreversible harm.

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	**60-79**
Information gap indicator	**More information sought** Up to date analyses of trawl survey data with respect to ecosystem indicators.

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**80**
Condition number (if relevant)	

PI 2.4.2 – Ecosystem management strategy

PI 2.4.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function		
Scoring issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are **measures** in place, **if necessary**, which considers the potential impacts of the UoA on the **key** elements underlying ecosystem structure and function.	There is a **partial strategy** in place, **if necessary**, that is expected to achieve the Ecosystem outcome SG80 level.	There is a **strategy** in place for managing the impact of the UoA on the **key** elements underlying ecosystem structure and function.
	Met?	**Yes**	**Yes**	**No**
Rationale		Per GSA 3.16.2, at SG80 and SG100, partial strategies and strategies, respectively, may contain measures designed and implemented to address impacts on components that have been evaluated elsewhere in this framework. If the measures address specific ecosystem impacts effectively enough to meet the appropriate standard, it is unnecessary to have special "ecosystem measures" to address the same impacts. UoAs should be capable of adapting management to environmental changes as well as managing the effect of the UoA on the ecosystem. There are numerous measures in place to manage impacts of the southern blue whiting trawl fishery on individual ecosystem components (and thereby ecosystem structure and function), e.g., for the target southern blue whiting (as described in PI 1.2.1), in-scope species (as described in PI 2.1.2), ETP/OOS species (as described in PI 2.2.2), and habitats (as described in PI 2.3.2). The management of ecosystem impacts is based around a well-structured, legislative, policy and operational framework. The overall structure includes at least the following: • Fisheries Act 1996 • Wildlife Act 1953 • Animal Welfare Act 1999 • Marine Mammals Protection Act 1978 • Aotearoa New Zealand Biodiversity Strategy Implementation Plan (DOC, 2022) • The Harvest Strategy Standard for New Zealand Fisheries (MPI, 2008) • The National Fisheries Plan for Deepwater and Middle-depth Fisheries (FNZ, 2019) • Medium term research plan for deepwater fisheries 2024/25 – 2029/30 (FNZ, 2024) • National Plans of Action for seabirds 2020 and sharks 2022 (FNZ 2020, FNZ, 2022) Data are collected, collated and reviewed regularly to inform the ongoing delivery of sustainable fisheries. For example: • Trawl surveys and annual plenary reports • The Annual Review Report for Deepwater Fisheries for 2021/22 (FNZ 2023a) • ETP/OOS species (e.g., Edwards et al 2023, Edwards and Mormede, S., 2023, MacKenzie et al 2022) • Habitats (Leathwick et al. 2012, Stephenson et al. 2022, MacGibbon and Mules, 2023, Clarke et al 2019, Rowden et al 2024, FNZ, 2022c) • Ecosystem considerations (e.g., Tuck et al. 2009, MacGregor et al 2019, FNZ, 2022c).		

PI 2.4.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function		
		In summary, measures address specific ecosystem impacts effectively enough to meet the appropriate standard, and there is considered to be a strategy in place to address the impact of the UoAs that is expected to achieve the ecosystem outcome SG80 level. **SG60 and SG80 are met.** Despite the combination of measures, the UoAs impacts on and the result of those impacts, has not been investigated in detail, **SG100 is not met**.		
b	**Management strategy effectiveness**			
	Guide post	The **measures, if necessary**, are considered **likely** to work, based on plausible argument.	There is **some evidence** that the **measures/partial strategy, if necessary**, is achieving the objectives set out in scoring issue (a), based on some information directly about the UoA and/or the ecosystem involved.	There is **evidence** that the **partial strategy/strategy** is achieving the objectives set out in scoring issue (a) based on information directly about the UoA and/or ecosystem involved.
	Met?	**Yes**	**Yes**	**No**
Rationale		Strategic and operational measures that are in place are considered likely to work, based on information about the fishery and ecosystem components involved (e.g. target, retained and bycatch species, ETP/OOS species and habitats). These components are being actively managed (see PI 1.2.1, PI 2.1.2, PI 2.2.2 and PI 2.3.2). The Aquatic Environment and Biodiversity Annual Review (FNZ, 2022c) provides a comprehensive review of the efficacy of measures, and identification of ongoing and new issues. Detailed monitoring of many aspects of the fishery (e.g. catches of target, retained species, and bycatch fish and invertebrates) provides a rich source of information through which to investigate the efficacy of strategies and plans in place providing some evidence of the management measures achieving their objectives. **SG60 and SG80 are met**. Updated evidence of the impacts of the trawl UoAs on overall community composition/diversity for the mid-water ecosystems with which the fishery interacts across its range is not available, **SG100 is not met**.		

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**80**
Condition number (if relevant)	**NA**

PI 2.4.3 – Ecosystem information

PI 2.4.3		There is adequate knowledge of the ecosystem and the main impacts of the UoA on key ecosystem elements		
Scoring issue		SG 60	SG 80	SG 100
a	**Information quality**			
	Guide post	Information is adequate to identify the key elements of the ecosystem.	Information is adequate to broadly understand the key elements of the ecosystem.	
	Met?	**Yes**	**Yes**	
Rationale		The Aquatic Environment and Biodiversity Annual Review (AEBAR), compiled by Fisheries New Zealand most recently for 2021 (FNZ, 2022c) provides a thorough review of the status of research into New Zealand deep water ecosystems. Research is most advanced in the Chatham Rise region, where modelling of the foodweb has been underway since 2006, the most recent version being MacGregor et al 2019. Information from the Chatham Rise Atlantis Model identified four species groups that stood out as having more effect than the other groups: orange roughy, hoki, pelagic fish small (primarily myctophids), and spiny dogfish (MacGregor et al, 2019). The Chatham Rise Atlantis model has been shown to have sound dynamics with respect to current knowledge of the system, has been tested for sensitivity to its ocean forcing variables and spawning stock recruitment assumptions (see references in MacGregor et al 2020). In a follow up to address and explore sensitivity to initial conditions of the to the biological sub-component of the Atlantis model input variables, MacGregor et al 2020, summarised that accounting for uncertainty in four main categories of model variables (1) initial conditions; (2) environmental; (3) feeding functional response; (4) productivity/recruitment, is likely to cover the broad range of uncertainty for the model. Despite the southern blue whiting trawl fishery operating in midwater zones, the deepsea research is informative enough that information is adequate to broadly understand the key elements of the ecosystem – **SG60 and SG80 are met.**		
b	**Investigation of UoA impacts**			
	Guide post	Main impacts of the UoA on the **key** ecosystem elements **can be inferred** from existing information	Main impacts of the UoA on the **key** elements of the ecosystem **have been investigated in detail**.	Main interactions between the UoA and the **key** ecosystem elements **have been investigated in detail**.
	Met?	**Yes**	**Yes**	**No**
Rationale		Tuck et al. 2009 provided an ecosystem-focused review of data from the Chatham Rise and Sub-Antarctic trawl surveys. Their analyses showed some evidence of change in ecosystem indicators over time, including evidence of increasing evenness (reducing diversity) but no evidence that species were being lost from the food-web. **SG60 and SG80 are met**. The lack of more up to date determinations based on analyses of a longer time-series of trawl survey data limits the assessment teams ability to conclude this with a higher degree of certainty and for all areas fished by the UoAs. The main interactions of the UoAs with the ecosystem outside of the Chatham Rise and specifically follow up to the initial Tuck et al (2009) work would support scoring, at this stage **SG100 is not met**.		
c	**Understanding of component functions**			

PI 2.4.3		There is adequate knowledge of the ecosystem and the main impacts of the UoA on key ecosystem elements		
	Guide post		The main functions of the components in the ecosystem are **known**.	The impacts of the UoA on the components are identified and the main functions of these components in the ecosystem are **understood**.
	Met?		**Yes**	**Yes**
Rationale		The main impacts of the UoAs include direct fishery removals, the addition of biomass from offal and discarding available to scavengers and impacts to community composition through top-down pressure. The main functions of the components in the ecosystem in the New Zealand deepwater ecosystem are considered to be understood, based on ecosystem modelling and associated research (e.g., Tuck et al 2009, Pinkerton 2011, MacGregor 2019, 2020). **Both SG80 and SG100 are met.**		
d	**Monitoring**			
	Guide post		Adequate data continue to be collected to detect any increase in risk level.	**Information is adequate** to support the development of strategies to manage ecosystem impacts.
	Met?		**Yes**	**Yes**
Rationale		Three series of scientific trawls in New Zealand waters are particularly valuable for understanding ecosystem dynamics and for monitoring for trophic and ecosystem-level effects at the level of the demersal fish community: • A scientific trawl survey has been carried out on the Chatham Rise region approximately annually since 1992 • A similar scientific trawl survey has been carried out over the Sub-Antarctic plateau over the same period, but less frequently (Bagley & O'Driscoll 2012, Tuck et al. 2009) • 15 scientific trawl surveys have been carried out in the Hauraki Gulf region between 1980 and 2000. These surveys used a consistent methodology and were used to investigate change in a series of indicators in the demersal fish community (Tuck et al. 2009). The combination of research trawls and high levels of observer coverage, mandatory commercial catch and effort reporting and mapping of the trawl footprint annually generate adequate data to detect any increase in risk level the UoAs pose to deep water ecosystems. **SG80 is met.** Since the launch of NZ's Biodiversity Strategy 2000, Fisheries New Zealand has run a Marine Biodiversity Research Programme with 67 projects to date, addressing biodiversity knowledge gaps. Research projects pertinent to the deepwater environment include: • ZBD2020-07 Recovery of Seamount Communities • ZBD2020-06 Recovery of biogenic habitats • ZBD2019-11 Development of Electronic Automated Reporting System (EARS) to improve seabird bycatch monitoring • ZBD2019-01 Quantifying benthic habitats		

PI 2.4.3	There is adequate knowledge of the ecosystem and the main impacts of the UoA on key ecosystem elements
	• ZBD2019-04 Plastics and marine debris across the ocean floor in New Zealand waters • BD2018-01 5-year continuous plankton survey (Phase 3) • ZBD2018-05 Ecosystem function and regime shifts in the Subantarctic • ZBD2016-11 Quantifying benthic biodiversity across natural gradients • ZBD2016-04 Organic Carbon Recycling in Deepwater • ZBD2014-03 Sublethal effects of environmental change on fish populations. The current Aotearoa New Zealand Biodiversity Strategy, Implementation Plan (DOC, 2022) and the Aquatic Environment and Biodiversity Annual Review (AEBAR, FNZ 2022c) summarise and outline New Zealand's comprehensive strategies to manage ecosystem impacts based on information directly from the UoAs and a multitude of other sources. **SG100 is met**. Per SA3.17.1 In scoring issue (d) the team shall interpret "information is adequate" to include an understanding of the effects of climate change on the natural productivity of the UoAs. Current research in New Zealand focuses on identifying climate change risks to the marine environment and the seafood sector, biodiversity, deepwater corals, biogenic habitats, fish, shellfish, plankton, primary productivity, and regime shifts. Improving monitoring methods to measure change and assess future scenarios has become important and methods of incorporating climate change indicators into stock assessment, and methods to assess species movements, are underway (FNZ, 2022c). Cummings, et al., (2021) reviewed the biological and ecological characteristics of 32 commercial fisheries species or species groups and evaluated their potential to be impacted by climate related changes. The Chatham Rise Atlantis model (MacGregor et al 2019) has suggested trends in stock abundance (for hoki and other species) which is estimated in stock assessment models to be due to trends in recruitment but may be due to trends in natural mortality rate due to ecosystem changes or species interactions. Current climate change research projects include: • ZBD2018-02 Climate change, fish distribution meta-analysis • ZBD2018- 03 Climate variability, trends, and fish population parameters • ZBD2014-09 Climate change risks and opportunities. The requirement of SA3.17.1 is also met supporting scoring at the **SG80 and SG100 levels.**

Draft scoring range and information gap indicator included in Announcement Comment Draft Report stage only

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**90**
Condition number (if relevant)	**NA**

10.3. Principle 3

10.3.1. Principle 3 background

Much of the information for this section is based on Acoura (2018), MRAG (2022), SNZ, DWC (2024 situation reports) and various FNZ reports as referenced.

10.3.1.1. Management

Fisheries New Zealand (FNZ) is the key regulator tasked with guiding the sustainable use of fisheries resources to the greatest overall benefit to New Zealanders. FNZ is a business unit within the Ministry of Primary industries (MPI).

The Quota Management System (QMS) is the overall framework for managing New Zealand fisheries. Introduced in 1986, it ensures the long-term sustainability of the fish stocks and the health of the marine ecosystems. The QMS allocates shares in each fish stock as quota. Quota generates an entitlement to catch a proportion of the TACC each year (ACE) within the relevant Quota management Area (QMA). The Minister for Oceans and Fisheries sets the TAC, guided by the *Harvest Strategy Standard*.

The *Harvest Strategy Standard* applies to all fish under the QMS and guides the way that fish stocks are managed. It is how the statutory requirements for stock sustainability, provided in Section 13 of the Fisheries Act 1996, are implemented in practice. The *Harvest Strategy Standard* states that stock targets and limits should be set more conservatively for stocks where information is sparse or uncertainty is high.

In 2019, Fisheries New Zealand finalised a *National Fisheries Plan for Deepwater and Middle-depth Fisheries*. Deepwater and middle-depth fisheries occur in water depths between 200 and 1,500 m and are located between the 12 nautical mile limit out to the edge of our EEZ. The species in this assessment, southern blue whiting, are deepwater species.

The plan provides strategic direction for managing deepwater fisheries and an integrated and transparent way of defining management objectives.

The management of New Zealand's deepwater fisheries is a collaborative arrangement between Fisheries New Zealand (FNZ) and the commercial fishing industry, represented by Seafood New Zealand Deepwater Council (SNZ, DWC). This arrangement enables the Management Objectives to be achieved by drawing on the combined knowledge, experience, capabilities, and perspectives of both organisations.

Input from tangata whenua occurs at the iwi fisheries forums. Industry and eNGO representatives and Treaty partner representatives such as Te Ohu Kaimoana are engaged in the management of our deepwater fisheries through the Deepwater Fish Plan Advisory Group (FPAG) which meets twice a year. The FPAG is an engagement forum for stakeholders to meet with FNZ.

Wider Context and Structure

The Annual Operational Plan (AOP) is driven by the National Fisheries Plan for Deepwater and Middle-depth Fisheries 2019 (Deepwater Plan 2019). The Deepwater Plan 2019 sits within a hierarchy of fundamental legislation including the Fisheries Act 1996 (the Act) and Treaty of Waitangi obligations to Māori, which provide strategic direction for a range of policy instruments and standards (Figure 27). These legislative requirements and policies inform the Deepwater Plan 2019, which in turn sets the direction and objectives for this AOP.

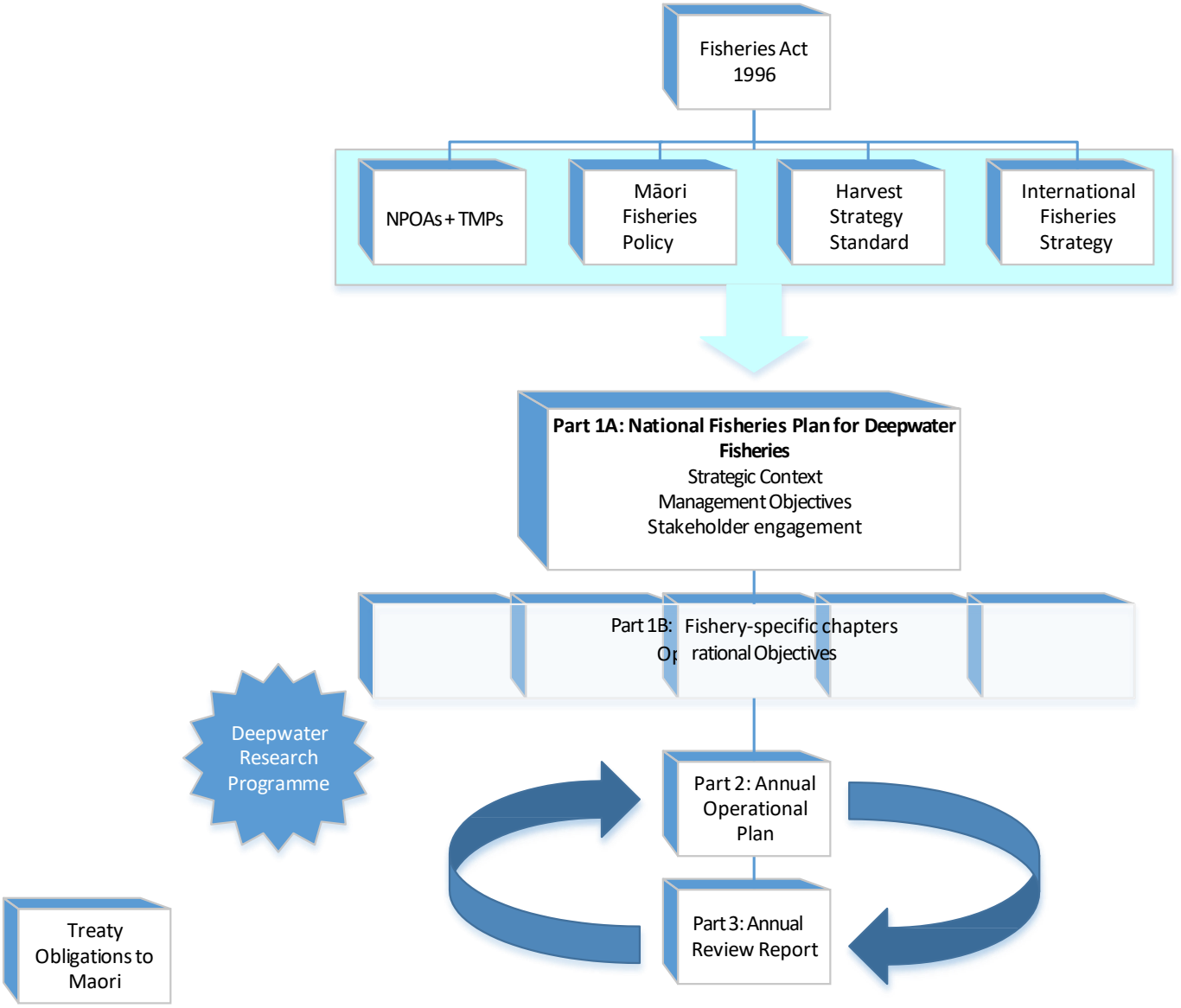


Figure 27 Structure of Management System for NZ deepwater fisheries

Source FNZ (2024)

10.3.1.2 Area of operation and fleet

The five UoAs operate in the Exclusive Economic Zone (EEZ) of New Zealand from within the 12 nautical miles (nm) limit of the territorial sea out to the 200n EEZ (Figure 2). No foreign fishing for these species has occurred adjacent to New Zealand in recent years and nor in the foreseeable future. The UoAs fisheries fall under the authority of the NZ government.

NZ southern blue whiting fisheries fall under a single jurisdiction with all of the fishing area within the NZ EEZ.

10.3.1.3 Recognised groups

The primary groups with direct interest in the fisheries are FNZ and the deepwater fishing industry, represented by NZS, DWC. Both are involved in the fishery through a partnership for management and science-based monitoring. FNZ has the responsibility for sustainable harvest under the requirements of the Fisheries Act 1996. Through policy, FNZ and DWC work closely together through a Memorandum of Understanding (DWG 2010) with a goal to ensure New Zealand's deepwater fisheries are sustainably managed.

The New Zealand Department of Conservation (DoC) Conservation Services Programme (CSP) monitors the impact of commercial fishing on protected species, studies species populations and looks at ways to limit bycatch (DoC 2021a)[9]. Protected marine species include all marine mammals and reptiles; sea birds (except black backed gulls); seven species of fish; all black corals, gorgonian corals, stony corals and hydrocorals (DoC 2021b)[10]. FNZ and DWC coordinate with DoC in management of the fisheries. However, managing the effects of fishing on these species remains the responsibility of FNZ.

Active participation in New Zealand's commercial fisheries by Iwi, Te Ohu Kai Moana (TOKM) and other Maori interests occurs through several mechanisms, including through membership in DWC and through active engagement with FNZ and Ministers.

The terms of the Maori Treaty Settlement for their rights to commercial fisheries have included delivery of commercial quota to Maori (FNZ 2021). MPI delivers the Crowns obligations to Maori under the

- Treaty of Waitangi (Fisheries claims) Settlement Act 1992
- Maori Commercial Aquaculture Claims Settlement Act 2004 and
- Maori Fisheries Act 2004

Several NGOs participate in consultations on the science and management of NZ deepwater fisheries. WWF, Royal Forest and Bird Protection Society of New Zealand, Greenpeace, and Environment and Conservation Organisations of New Zealand (ECO) are participants. Other organisations may also participate selectively such as the New Zealand Marine Sciences Society

10.3.1.4 Legislative context

The purpose of the Fisheries Act 1996 is set out in Section 8

(1) The purpose of this Act is to provide for the utilisation of fisheries resources while ensuring sustainability.

(2) In this Act –

Ensuring sustainability means

a) maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations; and

b) avoiding, remedying, or mitigating any adverse effects of fishing on the aquatic environment

Utilisation means conserving, using, enhancing, and developing fisheries resources to enable people to provide for their social, economic, and cultural well-being.

[9] https://www.doc.govt.nz/our-work/conservation-services-programme/about-csp/.
[10] https://www.doc.govt.nz/our-work/conservation-services-programme/.

Section 9 of the Act establishes the following environmental principles that shall be taken into account when exercising any powers under the Act in relation to the utilisation of fisheries resources or ensuring sustainability

a) Associated or dependent species should be maintained above a level that ensures their long-term viability

b) Biological diversity of the aquatic environment should be maintained; and

c) Habitat of particular significance for fisheries management should be protected.

Section 10 of the Act outlines information principles for decision makers as follows:

a) Decisions should be based on the best available information

b) Decision makers should consider any uncertainty in the information available in any case

c) Decision makers should be cautious when information is uncertain, unreliable, or inadequate; and

d) The absence of, or any uncertainty in, any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of this Act.

The Act also acknowledges external obligations, in particular, Part 1, section 5 notes that the Act shall be interpreted in a manner consistent with:

New Zealand's international obligations relating to fishing

Under the United Nations Convention on the Law of the Sea (UNCLOS) 1982 and its associated agreements, New Zealand has international obligations regarding the management of fish stocks. In deepwater fisheries, the most relevant sections are Articles 61-63 which apply to the management of marine resources within the EEZ and in cases where fish stocks extend beyond the borders of the EEZ.

The provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992.

Specific treaty obligations in the Fisheries Act provide for commercial elements of the settlement (through 20% of quota as new species enter the QMS and non-commercial elements through regulations providing for customary use). The more general obligations provide for tangata whenua input and participation and having particular regard to kaitiakitanga.

The passing of the Fisheries Amendment Act 2022, which has not yet been implemented, means that by 2026 discarding of all QMS species (unless expressly provided for) will be illegal. This change won't come into force until 2026.

Other domestic legislation which contributes to the management of the wider fisheries ecosystem includes the:

Wildlife Act 1953 which gives partial or full protection to all but one species of seabird; and

The Marine Mammals Protection Act 1978 which makes provision for the protection, conservation, and management of marine mammals within New Zealand waters.

10.3.1.5 Deepwater fisheries research

Research needs for deepwater fisheries are driven from the Objectives within the National Deepwater Plan 2019 and are primarily delivered through FNZ Fisheries Research Services. These research needs are outlined in the Medium-

Term Research Plan (FNZ 2024) which is a living document that is updated regularly to reflect changes in management priorities where these occur, and identification of new information requirements This research programme focuses on obtaining comprehensive, consistent and robust information in a cost-effective manner. To accomplish this, the research programme specifies the routine research and data collection necessary to meet Management Objectives. Research projects contracted for each financial year, included stock assessments, and trawl and acoustic surveys. All research projects are reviewed by FNZ Science Working Groups and are assessed against the Research and Science Information Standard for New Zealand Fisheries. This review process aims to ensure the quality of the research is sufficient to underpin Deepwater Fisheries Management.
Progress reports are not available for all projects, reports are made publicly available at the conclusion of each project.

10.3.1.6 Consultation and decision-making processes

The 1996 Fisheries Act requires consultation with stakeholders. To affect this, the Minister has established consultation standards that set out:

• Best practice consultation process to be followed by fisheries managers
• Minimum performance measures where appropriate; and
• A nationally consistent approach.
A process standard for stakeholder consultation has been developed to set out how MPI meets its obligations to consult with stakeholders before providing advice to the Minister, based on requirements of the of the Fisheries Act 1996. This standard sets out best practice consultation processes to be followed by fisheries managers; minimum performance measures where appropriate; and a nationally consistent approach with reference to relevant legislation and guidelines. Within this process, it is necessary to identify both who has an interest and who are representative of those having an interest. FNZ provides an initial consultation plan and the manner of consultation, including the timeframe for the consultation and the decision. FNZ distributes the decision and subsequently reviews the process to assure that their consultation meets all requirements.

When management changes are proposed to meet sustainability requirements (such as a change to a TAC/TACC), FNZ prepares a discussion document that provides the Ministry's initial proposals for issues needing decision and a range of management options. In southern blue whiting fisheries such proposals primarily relate to changes in TACCs/catch limits. The proposals outlined in FNZ's discussion document are preliminary and are provided as the basis for consultation with stakeholders. Subsequently, FNZ prepares a decision document, which summarises stakeholders' views on their proposals and makes recommendations to the Minister. The decision document and the Minister's letter setting out his final decisions are posted on MPI's website as soon as they become available.

The Fisheries Act 1996 requires a precautionary approach. The MSC vocabulary defines the precautionary as: "The precautionary approach shall be interpreted to mean being cautious when information is uncertain, unreliable or inadequate and that the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures." Section 10 of the Fisheries Act 1996 specifies four information principles, which encompass the precautionary principle, that must be taken into account in relation to the utilisation of fisheries resources or ensuring sustainability:

All persons exercising or performing functions, duties, or powers under this Act, in relation to the utilisation of fisheries resources or ensuring sustainability, shall take into account the following information principles:

• decisions should be based on the best available information:
• decision makers should consider any uncertainty in the information available in any case:
• decision makers should be cautious when information is uncertain, unreliable, or inadequate:

• the absence of, or any uncertainty in, any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of this Act.

A decision to consult or not to consult, and any decision made after consultation, must be made in accordance with the principles of administrative law, and in accordance with Fisheries Act 1996 obligations. These principles require decision-makers to act:
• in accordance with law
• reasonably; and
• fairly, in accordance with the principles of natural justice.

Decisions that do not follow requirements are open to legal challenge.

10.3.1.7 Fisheries objectives

Fisheries 2030, MPI's overarching vision for New Zealand fisheries established in 2009, states that by 2030, New Zealand's fisheries will be:

• world-leading and recognised for achieving a track record of environmental and commercial leadership and success, both domestically and internationally
• a sector that New Zealanders are proud of, in that they understand that a precious but limited national resource is being responsibly managed, in the interests of all, for both the present and the future
• based on healthy and abundant aquatic environments that are ecologically sustainable, about which we have reliable and dynamic information.
• a sector in which there are positive Crown-Maori partnerships, balancing and optimising cultural and commercial value.
• profitable and efficient, with a strong focus on long-term economic value
• characterised by high trust and high accountability relationships amongst both use and non-extractive use interests and between stake/rights holder entities and Government; and,
• a dynamic system in which transparent and robust decisions about allocation and trading-off are being made by stake/rights holders themselves, within a more enabling legislative and regulatory framework.

Fisheries 2030 specifies an overarching goal for New Zealanders to maximise benefits from the use of fisheries within environmental limits.
There are two outcomes:

1. Use Outcome: Fisheries resources are used in a manner that provides greatest overall economic social and cultural benefit.
2. Environment Outcome: The capacity and integrity of the aquatic environment, habitats and species are sustained at levels that provide for current and future use.

The National Deepwater Plan (FNZ,2019) provides an integrated, transparent way of defining management objectives, actions, and services required to meet relevant legislative obligations and strategic directions for managing New Zealand's deepwater fisheries. The plan also provides a reporting mechanism to measure progress towards meeting objectives. The purpose of national fisheries plans is to provide clear management objectives to support the purpose and principles of the Fisheries Act 1996 and to identify key deliverables for MPI over the medium term (5 years). Work on the revision began in 2016. In May 2019, MPI approved the plan.

National Deepwater Plan consists of three parts:

1. Fisheries Management Framework and Objectives

a. Part 1A- overall strategic direction including management objectives
b. Part 1B- fishery specific objectives for deep water fisheries (To be discussed further at the site-visit)

2. Annual Operating Plan
3. Annual Review report

MPI published a Medium-Term Research Plan for Deepwater Fisheries (MTRP; FNZ 2024) for the period 2024-25 to 2029-30. This MTRP outlines the scientific monitoring, and research needs to inform management of New Zealand's deepwater fisheries.

The science needs in this MTRP are based on the longer-term planning that has previously been consulted on with stakeholders, but not provided publicly with descriptions, context and rationale for the planned work. The MTRP remains a living document and will be updated regularly to reflect changes in management priorities where these occur, and identification of new areas of research. Annual research plans will be consulted with stakeholders through the National Deepwater Fisheries Plan forums and reported in the AOP and Annual Review Reports for deepwater fisheries.

The National Fisheries Plan for Deepwater and Middle depth fisheries (2019) sets out high level objectives under three outcomes

1. **Use Outcomes**
   - Ensure the deepwater and middle-depth fisheries resources are managed to provide for the needs of future generations
   - Ensure excellence in the management of New Zealand's deepwater and middle-depth fisheries, so they are consistent with, or exceed, international best practice
   - Ensure effective management of deepwater and middle-depth fisheries is achieved through the availability of appropriate, accurate and robust information
   - Ensure deepwater and middle-depth fish stocks and key bycatch fish stocks are managed to an agreed harvest strategy or reference points
2. **Environment Outcomes**
   - Ensure that maintenance of biological diversity of the aquatic environment and protection of habitats of particular significance for fisheries management are explicitly considered in management
   - Manage deepwater and middle-depth fisheries to avoid, remedy or mitigate the adverse effects of these fisheries on associated or dependent and incidentally caught fish species
   - Manage deepwater and middle-depth fisheries to avoid, remedy or mitigate the adverse effects of these fisheries on the benthic habitat
   - Manage deepwater and middle-depth fisheries to avoid, remedy or mitigate the adverse effects of these fisheries on the long-term viability of endangered, threatened and protected species populations
3. **Governance Conditions**
   - Ensure the management of New Zealand's deepwater and middle-depth fisheries meets the Crown's obligations to Māori
   - Ensure there is consistency and certainty of management measures and processes in the deepwater and middle-depth fisheries
   - Ensure New Zealand's deepwater and middle depth fisheries are transparently managed.

10.3.1.8 Regulation to meet objectives

Long term objectives are included in the Fisheries Act. The purpose of the Fisheries Act is focused on achieving a balance between sustainable utilisation of our fisheries resources, and maintenance of the marine environment. The Act implicitly recognises that:

- The biological realities of harvesting deepwater fisheries means that the future value of these fisheries can only be assured if they are managed sustainably. Measures to increase value must always be considered in the context of ensuring long-term maintenance of both target and bycatch stocks.
- Deepwater target and key bycatch fish stocks exist as part of the broader aquatic environment, and this broader environment has value, including an intrinsic value, to New Zealanders. It also recognises that, while fishing activities may have an environmental impact, not all environmental impacts have an adverse effect on the aquatic environment.
- Avoiding or mitigating adverse effects on the aquatic environment will ensure that the long-term viability of associated or dependent species is assured and that the biological diversity and functionality of marine communities is maintained.

10.3.1.9 Compliance, monitoring, surveillance and enforcement

The management system has a documented comprehensive and effective monitoring, control and surveillance system

FNZ 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. **V**oluntary compliance – outcomes are achieved through education, engagement and communicating expectations and obligations
2. **A**ssisted compliance – reinforces obligations and provides confidence that these are being achieved through monitoring, inspection, responsive actions and feedback loops
3. **D**irected compliance – directs behavioural change and may include official sanctions and warnings
4. **E**nforced 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 FNZ to always monitor all southern blue whiting vessel locations. Paper based catch reporting was also required by all fishing vessels operating in NZ's EEZ. These systems have now been replaced by near real time Geospatial Position Reporting and daily Electronic Catch Reporting. FNZ still combines this functionality with at-sea and aerial surveillance, supported by the New Zealand Defence Force. This independently provides surveillance of activities of deep-water vessels through inspection and visual capability to ensure these vessels are fully monitored and verified to ensure compliance with both regulations and with industry-agreed Operational Procedures.

All commercial catches from QMS stocks must be reported and balanced against ACE (Annual Catch Entitlement) 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 southern blue whiting trawl vessels include logging the location, depth, main species caught for each tow, and total landed catch for each trip.
MPI Fishery Officers carry out in-port and at-sea inspections. These inspections relate to both inshore and deep-water vessels that are engaged in the HOK, HAK and LIN trawl fisheries

MPI Fishery Officers also conduct at-sea Royal Navy (RNZN) patrols. During these operations vessel are boarded and inspected, or hailed if boarding was not possible. The Fishery Officers were briefed to examine possible compliance risks.

FNZ audits commercial vessel catch-effort and landing reports, reconciles these against multiple sources including VMS records, data collected by onboard FNZ observers, and catch landing records from LFRs to ensure that all catches are reported correctly. Areas of compliance risk and/or concern are communicated to deepwater operators annually by MPI Compliance (MPI, 2019, 2020). In addition, MPI's Management and Compliance teams meet with DWC personnel and vessel operators annually to discuss and evaluate any issues of concern (DWG, 2019, 2020). Any identified risks are communicated to the fleet along with proposed remedial action to be undertaken.

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 DWC's Operational Procedures (DWG 2022,2023) The Minister for Fisheries relies on the effectiveness of both regulatory and non-regulatory measures to ensure the sustainable management of these fisheries.

To facilitate implementation and monitoring of performance of (previously DWG) 's Operational Procedures, DWC has an Environmental Liaison Officer (ELO) whose role is to train vessel operators and skippers on ETP species mitigation methods, use of mitigation equipment, safe handling and release of incidental captures and prompt reporting of trigger-level captures to DWC and to FNZ. The ELO is on-call 24/7 to respond to any ETP species capture issues and maintains active liaison with both vessel operators and FNZ towards ensuring effective implementation of the Operational Procedures and the National Plans of Action for Seabirds (FNZ, 2020) and Sharks (MPI, 2013).

10.3.1.10 Monitoring of Performance of management system

The Deepwater Fisheries Annual Review Report ARR (2022) assesses progress against the fisheries management priorities and actions identified in the Deepwater Fisheries Annual Operational Plan 2020/21. It also reports on the annual performance of New Zealand's deepwater fisheries during the 2020/21 fishing year in relation to environmental interactions and impacts.

Part 3 of the National Deepwater Plan 2019 is this Annual Review Report which is split into three parts:
Part 3A describes the progress that has been made during the 2020/21 financial year (1 July– 30 June) towards delivering the management actions set out in the AOP.
Achievement of these annual priorities contributes to meeting the high-level management objectives set out in Part 1A of the National Deepwater Plan 2019.
Part 3B provides detail on delivery of fisheries service's relevant to Deepwater Fisheries Management that are planned by Financial Year. These processes include the planning and contracting of fisheries and conservation research projects, planning observer coverage on the deepwater fleet and the cost recovery regime.
Part 3C provides a summary report of the combined environmental impacts of deepwater fishing activity, and the deepwater fleet's adherence to the suite of non-regulatory management measures in place during the 2020/21 October Fishing Year (1 October– 30 September).

The AOP is reviewed annually and reported in the ARR. The Ministry conducts an extensive review of the performance of the deepwater fisheries that incorporates consultations with the industry and other stakeholders. Parts of the management system, specifically science and enforcement, undergo external review.

In 2018 an external review of the deepwater fisheries management was conducted by Quality Assurance NZ (IQANZ 2018). The review covered relevant parts of fisheries management and concluded that there was an appropriate management system in place for the ongoing sustainable management of the fisheries.
FNZ and DWC are working on terms of reference for an updated (pers comm A Iving) external review of the management system.

10.3.2. Principle 3 Performance Indicator scores and rationales

PI 3.1.1 – Legal and/or customary framework

PI 3.1.1		The management system exists within an appropriate and effective legal and/or customary framework which ensures that it: • Is capable of delivering sustainability in the UoA(s); • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework		
Scoring issue		SG 60	SG 80	SG 100
a	Compatibility of laws or standards with effective management			
	Guide post	There is an **effective national legal system** and a **framework for cooperation** with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an **effective national legal system** and **organised and effective cooperation with other parties**, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an **effective national legal system** and **binding procedures governing cooperation with other parties** that deliver management outcomes consistent with MSC Principles 1 and 2.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		The requirements and obligations under the Fisheries Act 1996, Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (and individual iwi Deeds of Settlement), the United Nations Convention on the Law of Sea (1982) and its associated agreements, the United Nations Fish Stocks Agreement (1995), Food and Agricultural Organisation's (FAO) Code of Conduct for Responsible Fisheries and the United Nations Fish Stocks Agreement (1995) are all binding. There is an effective national and international legal system and binding procedures governing cooperation with other parties that delivers management outcomes consistent with MSC Principles 1 and 2. **This SI meets SG60, SG80 and SG100.**		
b	Resolution of disputes			
	Guide post	The management system incorporates or is subject by law to a **mechanism** for the resolution of legal disputes arising within the system.	The management system incorporates or is subject by law to a **transparent mechanism** for the resolution of legal disputes which is **considered to be effective** in dealing with most issues and that is appropriate to the context of the UoA.	The management system incorporates or is subject by law to a **transparent mechanism** for the resolution of legal disputes, which is appropriate to the context of the fishery and has been **tested and proven to be effective**.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		The Fisheries Act provides opportunities to negotiate and resolve disputes. Procedures and processes that apply to disputes about the effects of fishing on the fishing activities of any person that has a current fishing interest provided for under the Act, are set out under Part 7 of the Fisheries Act. The Minister may appoint a Dispute Commissioner, and the Minister makes the final determination. The consultation process is an attempt to avoid unresolved disputes by ensuring all interested parties have an opportunity to participate and have an input into decisions.		

PI 3.1.1		**The management system exists within an appropriate and effective legal and/or customary framework which ensures that it:** • **Is capable of delivering sustainability in the UoA(s);** • **Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and** • **Incorporates an appropriate dispute resolution framework**		
		There have been occasions when there has not been a satisfactory outcome and then this has gone to litigation and the Court has decided. The Memorandum of Understanding (C2010) between DWG (now Seafood NZ, DWC) and MPI has encouraged better working relationships and avoided the need for litigation between the Ministry and the industry. The reduction in disputes between NZ Seafood and MPI demonstrates the effectiveness of the MOU. The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven to be effective. **This meets the requirements of SG60, 80, and 100**		
c	**Respect for rights**			
	Guide post	The management system has a mechanism to **generally respect** the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to **observe** the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to **formally commit** to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		The terms of the Maori Treaty Settlement for their rights to commercial fisheries have included delivery of commercial quota to Maori (MPI, 2021). MPI delivers the crown's obligations to Maori under the • Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 • Maori Commercial Aquaculture Claims Settlement Act_2004 and • Maori Fisheries Act 2004 The Treaty of Waitangi guarantees the "Chiefs, Tribes and peoples of New Zealand" the "undisturbed possession" of their fisheries until they wished to dispose of them to the Crown. Recognition of their Treaty rights to commercial fisheries was agreed in the early 1990s, resulting in the Crown delivering a comprehensive settlement to Maori in three major components. The first was to purchase 10 percent of the quota shares from the market and to transfer these to the Treaty of Waitangi Fisheries Commission, set up as a transitional trust for the benefit of Maori. The second was a cash settlement that was in part used to buy half of New Zealand's largest fishing company – Sealord Limited. The third was an undertaking to deliver to Maori 20% of the commercial quota shares for any new species brought into the QMS in future. The Maori Fisheries Act 2004 has the purpose of implementing the agreements made in the Deed of Settlement dated 23 September 1992; and to provide for the development of the collective and individual interests of iwi in fisheries, fishing, and fisheries-related activities in a manner that is ultimately for the benefit of all Maori. To achieve the purposes of this Act, provision is made to establish a framework for the allocation and management of settlement assets through the allocation and transfer of specified settlement assets to iwi as provided for by or under this Act; and the central management of the remainder of those settlement assets. See Sections 10.3.1.3 and 10.3.1.4 or more details.		

PI 3.1.1	**The management system exists within an appropriate and effective legal and/or customary framework which ensures that it:** • **Is capable of delivering sustainability in the UoA(s);** • **Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and** • **Incorporates an appropriate dispute resolution framework**
	The management system clearly commits to rights of customary fishing, reaching SG60, 80 and 100 for all **UoAs. SG 60,80 and 100 are met**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**100**
Condition number (if relevant)	

PI 3.1.2 – Consultation, roles, and responsibilities

PI 3.1.2		**The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties**		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Roles and responsibilities**			
	Guide post	Organisations and individuals involved in the management process have been identified. Functions, roles, and responsibilities are **generally understood**.	Organisations and individuals involved in the management process have been identified. Functions, roles, and responsibilities are **explicitly defined and well understood for key areas** of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles, and responsibilities are **explicitly defined and well understood for all areas** of responsibility and interaction.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		The primary groups with direct interest in the fishery are FNZ and the deepwater fishing industry (represented by DWC). Both are involved in the fishery through a partnership for management and science-based monitoring. FNZ has the responsibility for sustainable harvest under the requirements of the Fisheries Act 1996. Through policy, FNZ and DWC work closely together through a Memorandum of Understanding (DWG 2010) with a goal to ensure New Zealand's deepwater fisheries are sustainably managed. The New Zealand Department of Conservation (DoC) Conservation Services Programme (CSP) monitors the impact of commercial fishing on protected species, studies species populations and looks at ways to limit bycatch (DoC 2021a). FNZ and NZ Seafood coordinate with DoC in management of the fisheries. However, managing the effects of fishing on these species remains the responsibility of FNZ. The Treaty of Waitangi guarantees the "Chiefs, Tribes and peoples of New Zealand" the "undisturbed possession" of their fisheries until they wished to dispose of them to the Crown. Recognition of their Treaty rights to commercial fisheries was agreed in the early 1990s, resulting in the Crown delivering a comprehensive settlement to Maori in three major components. The New Zealand Department of Conservation (DoC) Conservation Services Programme (CSP) monitors the impact of commercial fishing on protected species, studies species populations and looks at ways to limit bycatch. Protected marine species include all marine mammals and reptiles; sea birds (except black backed gulls); seven species of fish; all black corals, gorgonian		

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
		corals, stony corals and hydrocorals FNZ and DWC coordinate with DoC in management of the fisheries. A number of NGOs participate in consultations on the science and management of NZ deepwater fisheries. WWF-NZ, WWF-US, WWF-AU, Royal Forest and Bird Protection Society of New Zealand, Greenpeace, and Environment and Conservation Organisations of New Zealand (ECO) are participants. Other organisations may also participate selectively such as the New Zealand Marine Sciences Society. Organizations and individuals involved in the fishery have been identified, with roles and responsibilities well laid out, **meeting the SG60, 80, and 100**		
b	**Consultation processes**			
	Guide post	The management system includes consultation processes that **obtain relevant information** from the main affected parties, including **local knowledge**, to inform the management system.	The management system includes consultation processes that **regularly seek and accep**t relevant information, **including local knowledge**. The management system demonstrates consideration of the information obtained.	The management system includes consultation processes that **regularly seek and accept** relevant information, including **local knowledge**. The management system demonstrates consideration of the information and **explains how it is used or not used**.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		The 1996 Fisheries Act requires consultation with stakeholders. To affect this, the Minister has established consultation standards (MPI, https://fs.fish.govt.nz/Doc/21817/consultation_standard%5B1%5D.pdf.ashx) that set out: • Best practice consultation process to be followed by fisheries managers. • Minimum performance measures where appropriate; and • A nationally consistent approach. This process standard has been developed taking into account relevant obligations, including the provisions of s 12 of the Fisheries Act 1996, administrative law requirements, and the MFish Statement of Intent 2006-2011. These standards recognize that consultation leading to decisions must occur in accordance with law; in a reasonable manner; and fairly, in accordance with the principles of natural justice. The law requires identification of stakeholders “with an interest” in each fishery, and the identification of those who represent stakeholders with an interest. In general, the policy recommends setting a wide range of stakeholders with an interest. The Minister must notify stakeholders in advance of the consultation, and to subsequently inform them of his decisions. Within this process, it is necessary to identify both who has an interest and who are representative of those having an interest. FNZ provides an initial consultation plan and the manner of consultation, including the timeframe for the consultation and the decision. FNZ distributes the decision and subsequently reviews the process to assure that their consultation meets all requirements. When management changes are proposed to meet sustainability requirements (such as a change to a TAC/TACC), FNZ prepares a discussion document that provides the Ministry’s initial proposals for issues needing decision and a range of management options. In southern blue whiting fisheries such proposals primarily relate to changes in TACCs/catch limits. The proposals		

PI 3.1.2			The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties	
			outlined in FNZ's discussion document are preliminary and are provided as the basis for consultation with stakeholders. Subsequently, FNZ prepares a decision document, which summarises stakeholders' views on their proposals and makes recommendations to the Minister. The decision document and the Minister's letter setting out his final decisions are posted on MPI's website as soon as they become available. The primary non-government stakeholders are the owners of the deepwater quota represented by DWC. DWG-MFish (2010) outlines the consultations undertaken by the industry and FNZ. FNZ has established open and direct involvement of all stakeholders in their science assessment processes. All of the Science Working Groups, including the annual stock assessment Plenary, are open to the public and the papers and meeting records are available to all participants. DWC invites discussions with MSC stakeholders through presentations and participation in conferences and documentaries (Clement, 2021); through direct meetings; through the public release of all information pertaining to the MSC assessment process online; and, through inviting all participants to attend any meeting between the MSC, CAB and NZ Seafood See also Section 10.3.1.6. The management system includes ongoing consultation processes that seek and use inputs, and provide information on the use of the inputs, meeting **SG 60, 80, and 100 for all UoAs.**	
c	**Participation**			
	Guide post		The consultation process **provides opportunity** for all interested and affected parties to be involved.	The consultation process **provides opportunity and encouragement** for all interested and affected parties to be involved, and **facilitates** their effective engagement.
	Met?		**Yes**	**Yes**
Rationale			A process standard for stakeholder consultation has been developed to set out how MPI meets its obligations to consult with stakeholders before providing advice to the Minister, based on requirements of the of the Fisheries Act 1996. Fisheries stakeholders are people or groups with a particular interest in the management of fishery resources. It includes environmental interests, commercial, customary and recreational fishers. Members of the public who are affected by the management of fisheries resources are also covered by them. This standard sets out best practice consultation processes to be followed by fisheries managers; minimum performance measures where appropriate; and a nationally consistent approach with reference to relevant legislation and guidelines. Within this process[11], it is necessary to identify both who has an interest and who are representative of those having an interest. Decision-makers should • start consultation early • consult widely when appropriate • listen to what others have to say • be informative • be prepared to wait • balance the issues • ask for feedback • conduct consultation in mutual good faith • keep consultation a two-way process	

[11] (https://fs.fish.govt.nz/Doc/21817/consultation_standard%5B1%5D.pdf.ashx

PI 3.1.2	The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties
	• be open minded The delegated decision-maker is also to determine the manner of consultation. The consultation may take place in the form of written exchange of information (i.e., hard copy, disk format, email), or in working groups, meetings or by telephone. The Consultation Standard identified three major elements to stakeholder involvement in fisheries management decisions: • Stakeholder consultation prescribed by the Fisheries Act 1996. • Constructive engagement with stakeholders, • Input and participation of tangata whenua. These procedures identify the stakeholders, assure all stakeholders receive relevant information and have opportunities to participate, and assure opportunity and encouragement for effective stakeholder engagement **meeting SG80 and 100.**

Overall Performance Indicator score	**100**
Condition number (if relevant)	

PI 3.1.3 – Long term objectives

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with the MSC Fisheries Standard, and incorporates the precautionary approach		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Objectives**			
	Guide post	Long-term objectives to guide decision-making, consistent with the MSC Fisheries Standard and the **precautionary approach,** are **implicit** within **management policy**.	**Clear** long-term objectives that guide decision-making, consistent with the MSC Fisheries Standard and the **precautionary approach**, are **explicit** within **management policy**.	**Clear** long-term objectives that guide decision-making, consistent with the MSC Fisheries Standard and the **precautionary approach**, are **explicit** within **and required by** management policy.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		The Fisheries Act 1996 requires a precautionary approach. The MSC vocabulary defines the precautionary as: "The precautionary approach shall be interpreted to mean being cautious when information is uncertain, unreliable or inadequate and that the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures." Section 10 of the Fisheries Act 1996 specifies four information principles, which encompass the precautionary principle, that must be taken into account in relation to the utilisation of fisheries resources or ensuring sustainability: All persons exercising or performing functions, duties, or powers under the Fisheries Act, in relation to the utilisation of fisheries resources or ensuring sustainability, shall take into account the following information principles:		

PI 3.1.3	The management policy has clear long-term objectives to guide decision-making that are consistent with the MSC Fisheries Standard, and incorporates the precautionary approach
	• decisions should be based on the best available information: • decision makers should consider any uncertainty in the information available in any case: • decision makers should be cautious when information is uncertain, unreliable, or inadequate: • the absence of, or any uncertainty in, any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of this Act. Fisheries 2030, MPI's overarching vision for New Zealand fisheries established in 2009, specifies an overarching goal for New Zealand's fisheries and two outcomes: **Goal**: New Zealanders maximising benefits from the use of fisheries within environmental limits. **Use Outcome:** Fisheries resources are used in a manner that provides greatest overall economic social and cultural benefit. **Environment Outcome:** The capacity and integrity of the aquatic environment, habitats and species are sustained at levels that provide for current and future use. The National Deepwater Plan provides an integrated, transparent way of defining management objectives, actions, and services required to meet relevant legislative obligations and strategic directions for managing New Zealand's deepwater fisheries. The plan also provides a reporting mechanism to measure progress towards meeting objectives. The purpose of national fisheries plans is to provide clear management objectives to support the purpose and principles of the Fisheries Act 1996 and to identify key deliverables for MPI over the medium term (5 years). Work on the revision began in 2016. In May 2019, MPI approved the plan . Refer Section 10.3.1.7 for more details. Clear long-term objectives, consistent with the precautionary approach, are explicit and required, **meeting SG60, 80, and 100.**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**100**
Condition number (if relevant)	

PI 3.2.1 – Fishery-specific objectives

PI 3.2.1		The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC Principles 1 and 2		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Objectives**			
	Guide post	**Objectives**, which are broadly consistent with achieving the outcomes expressed by MSC Principles 1 and 2, are **implicit** within the fishery-specific management system.	**Short and long-term objectives**, which are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, are **explicit** within the fishery-specific management system.	**Well-defined and measurable short- and long-term objectives**, which are demonstrably consistent with achieving the outcomes expressed by MSC Principles 1 and 2, are **explicit** within the fishery-specific management system.
	Met?	**Yes**	**Yes**	**Partial**
Rationale		The National Deepwater Plan provides an integrated, transparent way of defining management objectives, actions, and services required to meet relevant legislative obligations and strategic directions for managing New Zealand's deepwater fisheries The plan also provides a reporting		

PI 3.2.1	The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC Principles 1 and 2
	mechanism to measure progress towards meeting objectives. The purpose of national fisheries plans is to provide clear management objectives to support the purpose and principles of the Fisheries Act 1996 and to identify key deliverables for FNZ over the medium term (5 years). The Section 4 information provides well defined objectives. The performance indicators in Section 4 provide mechanisms for measuring success for some, but not all, of the objectives. Therefore, the management system contains well-defined and measurable objectives, although not all objectives meet the 'measurable' requirement. The DWG-MPI MOU (DWG-MFish, 2010) further lays out specific objectives for implementing the National Deepwater Plan. The fishery specific chapter for southern blue whiting contains Management Objectives divided into two main areas: Utilization and Environment. Each Management Objective contains a description of the current status relative to the Objective, a description of the target status at the end of the five-year period covered by the National Deepwater Plan, and a series of supporting Operational Objectives. Management and operational objectives have performance indicators defined to assist in evaluation performance. Operational objectives are specific, measurable and time bound designed to drive all management action in the fishery and cover both long and short term. These operational objectives will be critical in determining the annual management of fisheries for the five years that the National Deepwater Plan is in place. Each Operational Objective links to one or more Management Objectives. The individual tasks that contribute to the delivery of each operational objective will be specified each year in the annual operational plan. The Management Objectives are generally broad in scope, while the Operational Objectives are specific and measurable. However, the specific fisheries chapters, date back to hoki 2010, hake 2013 and ling 2011 and need to be updated. The objectives are well defined, measurable, and explicit and probably still represent the needs of the fisheries The chapters are currently being updated (Pers com FNZ, 2025).The Deepwater Plan and the DWG-MPI MOU meet the SG80, but the age and uncertainty that the objectives are all still relevant indicates that the SG100 is not completely met. Therefore, a partial score of 90 is given. SG 60 and SG80 are met and SG 100 partially

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**90**
Condition number (if relevant)	

PI 3.2.2 – Decision-making processes

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Decision-making processes**			
	Guide post	There are **some** decision-making processes in place that result in **measures** and **strategies** to achieve the fishery-specific objectives.	There are **established** decision-making processes that result in **measures** and **strategies** to achieve the fishery-specific objectives.	
	Met?	**Yes**	**Yes**	

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery		
Rationale		When management changes are proposed to meet sustainability requirements (such as a change to a TAC/TACC), FNZ prepares a discussion document that provides the Ministry's initial proposals for issues needing decision and a range of management options. In southern blue fisheries such proposals primarily relate to changes in TACCs/catch limits. The proposals outlined in FNZ's discussion document are preliminary and are provided as the basis for consultation with stakeholders. Subsequently, FNZ prepares a decision document, which summarises stakeholders' views on their proposals and makes recommendations to the Minister. The decision document and the Minister's letter setting out his final decisions are posted on MPI's website as soon as they become available. All persons exercising or performing functions, duties, or powers under this Act, in relation to the utilisation of fisheries resources or ensuring sustainability, shall take into account the following information principles: • decisions should be based on the best available information: • decision makers should consider any uncertainty in the information available in any case: • decision makers should be cautious when information is uncertain, unreliable, or inadequate: • the absence of, or any uncertainty in, any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of this Act. A decision to consult or not to consult, and any decision made after consultation, must be made in accordance with the principles of administrative law, and in accordance with Fisheries Act 1996 obligations. These principles require decision-makers to act: • in accordance with law • reasonably; and • fairly, in accordance with the principles of natural justice. Decisions that do not follow requirements are open to legal challenge. These processes **meet the SG60 and SG80.**		
b	**Responsiveness of decision-making processes**			
	Guide post	Decision-making processes respond to **serious issues** identified in relevant research, monitoring, evaluation, and consultation, in a transparent, timely and adaptive manner, and take some account of the wider implications of decisions.	Decision-making processes respond to **serious and other important issues** identified in relevant research, monitoring, evaluation, and consultation, in a transparent, timely, and adaptive manner, and take account of the wider implications of decisions.	Decision-making processes respond to **all issues** identified in relevant research, monitoring, evaluation, and consultation, in a transparent, timely, and adaptive manner, and take account of the wider implications of decisions.
	Met?	**Yes**	**Yes**	**No**
Rationale		Consultation is a central component of the management decision-making process (Fisheries Act Section 12, Stakeholder Consultation Process Standard). The Minister makes the final decision based on advice received from other parties (Section 12 – "the Minister shall consult with such persons or organisations as the Minister considers are representative of those classes of persons having an interest in the stock or the effects of fishing on the aquatic environment in the area concerned including Maori, environmental, commercial, and recreational interests"). FNZ prepares a discussion document that provides the Ministry's initial proposals for issues needing decision and a range of management options (https://www.mpi.govt.nz/consultations/your-fisheries-your-say/). In southern blue whiting fisheries such proposals primarily relate to changes in TACCs/catch limits. The proposals		

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery		
		outlined in FNZ's discussion document are preliminary and are provided as the basis for consultation with stakeholders. Subsequently, FNZ prepares a decision document, which summarises stakeholders' views on their proposals and makes recommendations to the Minister. The decision document and the Minister's letter setting out his final decisions are posted on MPI's website as soon as they become available. This demonstrates the management system responding to serious and important issues in an open and transparent way, taking into account the wider implications and alternatives for decision making. This meets the SG60 and 80. While the management system considers a wide range of issues, it is not clear that the system takes into account all issues, thus not meeting the SG100.**SG60 and SG 80 are met.**		
c	**Use of precautionary approach**			
	Guide post		Decision-making processes use the **precautionary approach** and are based on best available information.	
	Met?		**Yes**	
Rationale		The Fisheries Act 1996 requires a precautionary approach. The MSC vocabulary defines the precautionary as: "The precautionary approach shall be interpreted to mean being cautious when information is uncertain, unreliable or inadequate and that the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures." Section 10 of the Fisheries Act 1996 specifies four information principles, which encompass the precautionary principle, that must be taken into account in relation to the utilisation of fisheries resources or ensuring sustainability. **SG 80 is met**		
d	**Accountability and transparency of management system and decision-making process**			
	Guide post	Some information on the fishery's performance and management action is generally available on request to stakeholders.	**Information on the fishery's performance and management action is available on request**, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation, and review activity.	Formal reporting to all interested stakeholders **provides comprehensive information on the fishery's performance and management actions** and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation, and review activity.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		Formal reporting on management actions or inactions is part of the formal consultation process. When management changes are proposed to meet sustainability requirements (such as a change to a TAC/TACC), FNZ prepares a discussion document that provides the Ministry's initial proposals for issues needing decision and a range of management options (https://www.mpi.govt.nz/consultations/your-fisheries-your-say/). In southern blue whiting fisheries such proposals primarily relate to changes in TACCs/catch limits. The proposals outlined in FNZ's discussion document are preliminary and are provided as the basis for		

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery		
		consultation with stakeholders. Subsequently, FNZ prepares a decision document, which summarises stakeholders' views on their proposals and makes recommendations to the Minister. The decision document and the Minister's letter setting out his final decisions are posted on MPI's website as soon as they become available. These measures together meet the **SG60, 80, and 100.**		
e	**Approach to disputes**			
	Guide post	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability of the fishery.	The management system or UoA is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or UoA acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		The Minister is the decision maker in fisheries management matters and his decisions are bound by the law and are therefore open to legal review. The law requires identification of stakeholders "with an interest" in each fishery, and the identification of those who represent stakeholders with an interest. Section VII Disputes Resolution of the Fisheries Act states that the section "(a) applies to disputes about the effects of fishing (excluding fish farming) on the fishing activities of any person who has a current fishing interest provided for or authorized by or under this Act; but (b) does not apply to disputes about ensuring sustainability or about the effects of any fishing authorised under Part 9." Section VII further requires that the Minister publicly set out an approved statement of procedure for the resolution of such disputes. The Minister of Fisheries published in 1998 the dispute resolution procedures. The Minister's approved statement of procedure for the resolution of disputes consists of four steps, with each step in turn involving specific actions to be undertaken by the parties to the dispute to give effect to the requirements of Section VII of the Act: • Dispute summary report by the party identifying the report • Production and Distribution of Initial Assessment Report demonstrating the dispute is about the effects of fishing, and does not involve issues associated with ensuring sustainability • Negotiation and attempts at resolution • Prepare an Outcome Report with conclusion of the process including resolution or not of the dispute. The parties to the dispute may make recommendations that involve sustainability or customary fishing that would require action beyond the authority of the Minister. The collaboration between the NZ Seafood and MPI works to avoid disputes, as the agreement of common goals and negotiations to achieve them occurs during the normal working relationship between the two parties. The principles in the Fisheries Act require decision-makers to act: • in accordance with law; • reasonably; and • fairly, in accordance with the principles of natural justice. Decisions that do not follow requirements are open to legal challenge.		

PI 3.2.2	**The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery**
	Legal challenges are uncommon in the fisheries, in part because of the collaborative decision making. Therefore, the management system proactively acts to avoid disputes. Lack of judicial decisions does not provide direct evidence of rapid implementation, but the requirements of the Fisheries Act and policies of NZ Seafood. and MPI strongly suggest this would be the case. **The fishery reaches the SG60, SG80, and SG100**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**90**
Condition number (if relevant)	

PI 3.2.3 – Compliance and enforcement

PI 3.2.3		Monitoring, control, and surveillance (MCS) mechanisms ensure the management measures in the UoA are enforced and complied with		
Scoring issue		SG 60	SG 80	SG 100
a	MCS system			
	Guide post	MCS **mechanisms** exist within the UoA.	An MCS **system** exists within the UoA.	A **comprehensive** MCS system is well-established within the UoA.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		The Ministry for Primary Industries (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 behavioural 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 FNZ to monitor all southern blue whiting vessel locations at all times. Paper-based catch reporting was also required by all fishing vessels operating in NZ's EEZ. These systems have now been replaced by near-real-time Geospatial Position Reporting and daily Electronic Catch Reporting. FNZ still combines this functionality with at-sea and aerial surveillance, supported by the New Zealand Defence Force. This independently provides surveillance of activities of deep-water vessels through inspection and visual capability to ensure these vessels are fully monitored and verified to ensure compliance with both regulations and with industry-agreed Operational 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 southern blue whiting 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 and 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. At sea and aerial surveillance, supported by NZ defence Force, are also carried out This independently provides surveillance of activities of deep-water vessels through inspection and visual capability to ensure these vessels are fully monitored and verified to ensure compliance with both regulations and with industry-agreed Operational Procedures. The comprehensive MCS system has demonstrated a consistent ability for effective enforcement **meeting SG60, 80, and 100**		

PI 3.2.3		Monitoring, control, and surveillance (MCS) mechanisms ensure the management measures in the UoA are enforced and complied with		
b	**Sanctions**			
	Guide post	Sanctions to address non-compliance exist within the UoA.	Sanctions to deal with non-compliance exist, that are appropriate to the UoA, and are applied.	Comprehensive sanctions to address non-compliance exist, that are appropriate to the UoA, and are consistently applied.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		NZ Commercial fishers 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 fishers from over-catching their ACE holdings. The industry, with its investment in the fishery through co-management, has a strong incentive to maintain its cooperative role through compliance with legal requirements. MPI Fishery Officers carried out a total of 210 in-port and at-sea inspections for the period 1 January 2019 to 31 December 2023. These inspections relate to both inshore and deep-water vessels that were engaged in the HOK, HAK, LIN and SBW trawl fisheries and the LIN longline fishery Areas monitored during in-port inspection included one or more of the following: • Carton weights • Adherence to state for HGT and DRE product (for HOK, HAK and LIN) • ER reporting and landing documentation • Verification of landing • Compliance checks of mitigation devices for NFPS (e.g., SLEDS and tori lines) • Inspection of PRB equipment • Fish to meal. Some minor non-compliance was detected during in-port inspections in relation to ER reporting including the non-reporting of discards and LIN tail cuts greater than 60mm for dressed product. Other compliance issues such as no fishing permit or certificate of registration onboard the vessel was detected and followed up by Fisheries Officers at the time with the skipper and later with the permit holder if required. Comprehensive sanctions to address non-compliance exist, that are appropriate to the UoAs, and are consistently applied.**SG60, SG 80 and SG 100 are met**		
c	**Compliance (information)**			
	Guide post	Information is adequate to **broadly understand** compliance in the UoA.	Information is adequate to **estimate** compliance in the UoA with a **high degree of accuracy**.	Information is adequate to **estimate** compliance in the UoA with a **very high degree of accuracy**.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		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 FNZ to monitor all hake/hoki/ling/southern blue whiting vessel locations at all times. Paper based catch reporting was also required by all fishing vessels operating in NZ's EEZ. These systems have now been		

PI 3.2.3	Monitoring, control, and surveillance (MCS) mechanisms ensure the management measures in the UoA are enforced and complied with
	replaced by near real time Geospatial Position Reporting and daily Electronic Catch Reporting. FNZ still combines this functionality with at-sea and aerial surveillance, supported by the New Zealand Defence Force. This independently provides surveillance of activities of deep-water vessels through inspection and visual capability to ensure these vessels are fully monitored and verified to ensure compliance with both regulations and with industry-agreed Operational 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 hake/hoki/ling trawl vessels include logging the location, depth, main species caught for each tow, and total landed catch for each trip. FNZ audits commercial vessel catch-effort and landing reports, reconciles these against multiple sources including VMS records, data collected by onboard FNZ observers, and catch landing records from LFRs to ensure that all catches are reported correctly. Areas of compliance risk and/or concern are communicated to deepwater operators annually by MPI Compliance (MPI, 2019, 2020). In addition, MPI's Management and Compliance teams meet with DWG personnel and vessel operators annually to discuss and evaluate any issues of concern (DWG, 2019; 2020). Any identified risks are communicated to the fleet along with proposed remedial action to be undertaken. 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 Oceans & Fisheries relies on the effectiveness of both regulatory and non-regulatory measures to ensure the sustainable management of these fisheries. As part of DWC's Operational Procedures, DWC 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. MPI Fishery Officers carried out a total of 210 in-port and at-sea inspections for the period 1 January 2019 to 31 December 2023. These inspections relate to both inshore and deep-water vessels that were engaged in the HOK, HAK, LIN and SBW trawl fisheries and the LIN longline fishery. Inspections during 2020 and 2021 were lower than usual due to restricted access to vessels during the Covid epidemic (G. Lydon FNZ, pers. comm.). FNZ audits commercial vessel catch-effort and landing reports, reconciles these against multiple sources including VMS records, data collected by onboard FNZ observers, and catch landing records from LFRs to ensure that all catches are reported correctly. Areas of compliance risk and/or concern are communicated to deepwater operators annually by MPI Compliance (MPI, 2019, 2020). In addition, MPI's Management and Compliance teams meet with DWG personnel and vessel operators annually to discuss and evaluate any issues of concern (DWG, 2019, 2020). Any identified risks are communicated to the fleet along with proposed remedial action to be undertaken.

PI 3.2.3	**Monitoring, control, and surveillance (MCS) mechanisms ensure the management measures in the UoA are enforced and complied with**

As Information is adequate to estimate compliance in the UoA with a very high degree of accuracy. **SG 60,80 and 100 are met (TG1, 2 and 3 are met, see** Table 51 **below)**

For PI 3.2.3 c the application of Evidence Requirements Framework is required to evaluate trueness of information

Table 51. **Assessment of factors determining data "trueness" for compliance data.**

Note Evidence Based Framework

Criteria	Assessment	Determination High/Med/Low
Objectivity: to what extent is the information free from conflict of interest?	The primary sources of catch composition information are skipper logbooks, and LFRs, along with a comprehensive system of offload checks and observer reports. As described above, because observers are employed, deployed and debriefed by MPI according to management arrangements set independently of the industry, observer information is considered highly objective. Logbook data may be less objective, simply because it is self-reported by the vessel captain, but these data are cross checked using, LFR, offload inspections and observer reports. However, having these sources of information allows for the cross-validation of catch information. In this case, the logbook and LFR catch composition information is very consistent with the observer reports. Independent sources of information pertaining to bird and mammal population statuses and broader fishery impact used are highly objective. VMS is also objective in that it cannot be influenced by humans. There is a comprehensive system of monitoring and verification of compliance with closed area management using VMS that is free of conflicts of interest. Overall, this data has high objectivity.	High Objectivity
Relevance: to what extent is the information pertinent or connected to the matter in hand	The main compliance risks are identified as quota evasion, fishing in prohibited areas, failure to report interaction/retention of protected or prohibited species, and misreporting or mishandling of bycatch and discards.	High Relevance

PI 3.2.3		Monitoring, control, and surveillance (MCS) mechanisms ensure the management measures in the UoA are enforced and complied with		
			Quota evasion is monitored by skipper logbooks, LFRs and a high frequency of offload checks. Vessel positions are monitored via VMS and alert systems Skipper ETP interaction reporting and Observer information interaction/retention of protected or prohibited species, and misreporting or mishandling of bycatch and discards.	
			Completeness: To what extent are different sources in agreement	Information is available from a multiplicity of monitoring tools and cross-checking procedures e.g. Geospatial Position Reporting, Electronic catch reporting, at sea and aerial surveillance, port inspections and MPI audit	High Completeness
			Consistency: To what extent are different sources in agreement	Observers catch records and logbook catch, and LFR records are very consistent with each other, Bird interaction was recorded both in the logbook and by an observer. VMS is also checked relative to vessel reported fishing locations and these sources of information are consistent.	High Consistency
			As High objectivity, high relevance, high completeness and high consistency are met TG1,2 and 3 are met and a SG score of 100.		
d	**Compliance (outcome)**			
	Guide post	**Systematic non-compliance** of regulations specific to governing sustainable fishing practices on the water is not evident within the UoA.	Majority of regulations, including all regulations specific to governing sustainable fishing practices on the water, are **likely** to be complied with.	Majority of regulations, including all regulations specific to governing sustainable fishing practices on the water, are **consistently** complied with.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		FNZ audits commercial vessel catch-effort and landing reports, reconciles these against multiple sources including VMS records, data collected by onboard FNZ observers, and catch landing records from LFRs to ensure that all catches are reported correctly. Areas of compliance risk and/or concern are communicated to deepwater operators annually by MPI Compliance (MPI, 2019, 2020). In addition, MPI's Management and Compliance teams meet with DWC personnel and vessel operators annually to discuss and evaluate any issues of concern (DWG, 2019, 2020). Any identified risks are communicated to the fleet along with proposed remedial action to be undertaken. 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		

PI 3.2.3	Monitoring, control, and surveillance (MCS) mechanisms ensure the management measures in the UoA are enforced and complied with
	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 DWC's Operational Procedures (DWG, 2021). The Minister for Fisheries relies on the effectiveness of both regulatory and non-regulatory measures to ensure the sustainable management of these fisheries. To facilitate implementation and monitoring of performance of DWC's Operational Procedures, DWC has an Environmental Liaison Officer (ELO) whose role is to train vessel operators and skippers on ETP species mitigation methods, use of mitigation equipment, safe handling and release of incidental captures and prompt reporting of trigger-level captures to DWC and to FNZ. The ELO is on-call 24/7 to respond to any ETP species capture issues and maintains active liaison with both vessel operators and FNZ towards ensuring effective implementation of the Operational Procedures and the National Plans of Action for Seabirds (FNZ, 2020) and Sharks (MPI, 2013a). The high level of meeting reporting requirements, the relatively high level of observer coverage, and ongoing monitoring by enforcement agents demonstrates no evidence of systematic non-compliance. **This meets the SG100**

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**100**
Condition number (if relevant)	

PI 3.2.4 – Monitoring and management performance evaluation

PI 3.2.4		There is a system for monitoring and evaluating the performance of the fishery-specific management system against its objectives. There is effective and timely review of the fishery-specific management system		
Scoring issue		SG 60	SG 80	SG 100
a	Evaluation coverage			
	Guide post	There are mechanisms in place to evaluate **some** parts of the fishery-specific management system.	There are mechanisms in place to evaluate **key** parts of the fishery-specific management system.	There are mechanisms in place to evaluate **all** parts of the fishery-specific management system.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		The Deepwater Fisheries Annual Review report (ARR) 2022, assesses progress against the fisheries management priorities and actions identified in the Deepwater Fisheries Annual Operational Plan 2020/21. It also reports on the annual performance of NZ's deepwater fisheries during the 2020/21 fishing year in relation to environmental interactions and impacts. The ARR is Part 3 of the National Deepwater Plan 2019. It is split into three parts Part 3A describes the progress that has been made during the 2020/21 financial year (1 July 2020 – 30 June 2021) towards delivering the management actions set out in the 2020/21 AOP. Achievement of these annual priorities contributes to meeting the high-level management objectives set out in Part 1A of the National Deepwater Plan 2019. Part 3B provides detail on delivery of fisheries service's relevant to Deepwater Fisheries Management that are planned by Financial Year. These processes include the planning and contracting of fisheries and conservation research projects, planning observer coverage on the deepwater fleet and the cost recovery regime. Part 3C provides a summary report of the combined environmental impacts of deepwater fishing activity, and the deepwater fleet's adherence to the suite of non-regulatory management measures in place during the 2020/21 October Fishing Year (1 October 2020 – 30 September 2021). The ARR contains several appendices: • Appendix I summarises the commercial catch of deepwater stocks during the 2020/21 Fishing Year. Also included, where available, are observer coverage details, the amount of deemed values invoiced, and export earnings during the 2020 calendar year • Appendix II summarises the results of the October 2020 sustainability rounds • Appendix III comprises The Deepwater Fish Plan Advisory Group (FPAG) Terms of Reference • Appendix IV MSC certified stocks and the relevant data used to review the certification • Appendix V summarises cost recovery levies for deepwater stocks for the 2020/21 Financial Year; and • Appendix VI comprises the observer Interim Trip Report template. The AAR evaluates the development and implementation of the Fisheries Plan framework – National Deepwater Plan with fishery specific chapters and Annual Operational Plan for the fisheries. This review encompasses all parts of the management system, therefore reaching the **SG60, SG80, and SG100**		
b	Internal and/or external review			
	Guide post	The fishery-specific management system is	The fishery-specific management system is subject to **regular internal**	The fishery-specific management system is

PI 3.2.4		There is a system for monitoring and evaluating the performance of the fishery-specific management system against its objectives. There is effective and timely review of the fishery-specific management system		
		subject to **occasional internal** review.	and **occasional external review**.	subject to **regular** internal and external review.
	Met?	**Yes**	**Yes**	**No**
Rationale		Progress against the objectives in the National Fisheries Plan for Deepwater and the Annual Operational Plan is reviewed annually and reported in the Annual Review Report. FNZ conducts an extensive review of performance of the deepwater fisheries that incorporates consultations with industry and other stakeholders. Parts of the management system, specifically science and enforcement, undergo regular external review. In 2018, MPI completed an external review of the Deepwater Fisheries Management conducted by Independent Quality Assurance New Zealand (IQANZ 2018). The review covered the relevant parts of fishery management. A fishery-specific management system external review is currently being proposed and planned. The CAB recommends that progress on this is monitored and evidence provided at the surveillance audits. **SG 60 and SG 80 are met**		

Overall Performance Indicator scores added from Client and Peer Review Draft Report stage

Overall Performance Indicator score	**90**
Condition number (if relevant)	

11. Appendices

11.1. Assessment information

11.1.1. Previous assessments

NZ SBW was first certified in 2012 with one condition.
https://cert.msc.org/FileLoader/FileLinkDownload.asmx/GetFile?encryptedKey=/z/sX9c8IxkcT2wQvIo1bswbfqQiG8i/5mKVujZwjdjrVj+UCRt0RZQQ4ajnsIMQ

This condition was closed at subsequent surveillance audit

In 2018 SBW was reassessed with other NZ deepwater species (hoki, hake and ling trawl and ling longline) all were recertified with no conditions.
https://cert.msc.org/FileLoader/FileLinkDownload.asmx/GetFile?encryptedKey=/KBzlG0n9b0AUcqDq86/SvvYukcDSRgvFqYhTp3/XNKdAnTxoNdeWNfs6Hvu2N4A

11.2. Evaluation processes and techniques

11.2.1. Site visits

A site visit took place in Wellington, New Zealand, 23-28th February 2025.CAB assessment team members attended all meetings. Meetings with stakeholders were held both in person and remotely. The client group and their consultants, National Institute of Water and Atmospheric Research (NIWA) scientists, Ministry for Primary Industry and Fisheries New Zealand (FNZ) Managers and staff attended. The stakeholders provided invaluable input with their contributions of relevant information. The assessors have taken this into account in this CPRD report.

No NGOs wished to be involved nor wrote any submissions.

All attendees were informed that

- The CAB, LRQA, is an independent body contracted to assess this fishery against the Marine Stewardship Council's standard for Sustainable Fishing
- Stakeholder involvement is a vital part of the MSC process and to please provide any information they felt might be valuable in conducting this assessment, including any concerns they may have about the fishery. The information they provide will be considered by the assessment team when writing the assessment report and might influence scoring decisions.
- If there is information, they wished to remain confidential they should inform us before sharing it with us. Any information referenced during this assessment must be shared with any stakeholder who wishes to see it. We can provide a confidentiality agreement on request before you share and sensitive information.
- Information presented to inform the assessment must be objective and verifiable.

11.2.2. Stakeholder participation

Identified stakeholders were contacted by LRQA and the client and invited to participate in this reassessment. The CAB provided the hyperlink to the 'MSC template for Stakeholder Input into Fishery Assessments'.

There were no written submissions from stakeholders

Meetings were held for five days in Wellington both in person and remotely.

At each session stakeholders were given the opportunity to ask questions. The sessions were organised so that the assessors would

- Describe the Fishery under assessment / surveillance – (species, method, area, fleet)
- Explain MSC Procedures and principles - describe in manner appropriate for participants
- Ask participants to introduce themselves & key interests
- Confirm that participants are happy for information to be attributed?

Key issues of concern

  - What are they?
  - How can they be addressed?
  - What's the best source of information?

- Ask participants to identify any sources of information / other stakeholders that may be useful for assessment.
- Ask participants if they require that a note of the meeting be sent to them for comment & then included in the main report.
- Agree timescale for feedback / further input.
- Summarise key points at end of meeting

11.2.3. Evaluation techniques

At the site visit:

- The team consulted a range of stakeholder groups.
- The team identified stakeholders early in the assessment process.
- The team organised in person and remote meetings to allow for the highest participation of stakeholders.
- The team structured meetings to encourage engagement amongst, stakeholders
- The team make available background information on the UoA ahead of the meeting so that the stakeholder consultation process was focused on providing information required for the RBF scoring process, while allowing participants to express their expert opinions.

A key purpose of the site visit was to collect information and speak to stakeholders with an interest in the fishery.

The RBF was not used for this assessment.

11.3. Peer Review reports

11.3.1. PRA

11.3.1.1. General Comments

Fishery	Assess-ment Start Year	Peer Reviewer (A/B/C)	Question	Yes/No	Peer Reviewer Justification (as given at initial Peer Review stage). Peer Reviewers should provide brief explanations for their 'Yes' or 'No' answers in this table, summarising the detailed comments made in the PI / RBF tables (first row) and conditions (second row).	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	PR A	Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	Yes	The report is well written. Further clarity and justification is required in several rationales to support stated achieved scores.	Thank you. Further clarity and justification has been proovided where suggested see P! sheet
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	PR A	Are the condition(s) raised appropriately written to clearly identify relevant scoring issues and scoring elements and define any milestones, consistent with the MSC process requirements? [Reference: FCP v3.0 Section 7.16]	Yes	agreed.	Thank you.

11.3.1.2. PI Comments

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	PR comment code	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Res-ponse Code

Fishery	Assess-ment Start Year	Enter UoA stock/s, and insert extra rows for P1 PIs as needed, e.g. if separate scores given for different UoA stocks	Enter UoA gear/s, and insert extra rows for P2 PIs as needed, e.g. if separate scores given for different UoA gear types	Peer Revie-wer (A/B/C)	Perfor-mance Indica-tor (PI)	Enter code below to summarise the comment and any expected score change	Peer reviewers (PRs) should provide support for the codes used in the left column by referring to specific scoring issues and/or scoring elements, and any relevant documentation as appropriate. Additional rows should be inserted for any PIs where two or more discrete comments are raised, e.g. for different scoring issues, allowing CABs to give a different answer in each case. Paragraph breaks may also be made within cells using the Alt-return keyboard shortcut. Detailed justifications are only required where the PR is suggesting some change is needed. In other cases, either confirm 'scoring agreed' or identify any places where weak rationales could be strengthened (using the 'Change suggested to increase clarity' code).	CABs should summarise their response to the Peer Reviewer comments in the CAB Response Code column and provide justification for their response in this column. Where multiple comments are raised by Peer Reviewers with more than one row for a single PI, the CAB response should relate to each of the specific issues raised in each row. CAB responses should include details of where different changes have been made in the report (which section #, table etc).	See codes page for response options
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake, Ling New Zealand	Trawl	PR A	1.1.1	Minor change suggested to increase clarity	SI(b) end of first paragraph, the value provide for LIN 7WC states "0.05" with no unit provided. It is believed that the LIN 7WC value written here should be 5% as per data presented in Table 28.	Thanks - that was a carry over from using proportions instead of percentages. Corrected	No score change, change to rationale
New Zealand hake, hoki, ling and Southern blue whiting fishery -	2025	Hoki, Hake, Ling New Zealand	Trawl	PR A	1.1.2	NA (PI not scored)			NA (No response needed)

Hake, Hoki, Ling Trawl									
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake, Ling New Zealand	Trawl	PR A	1.2.1	Change to rationale or evidence expected, not to scoring	SI(a) Under MSC SA2.4.1(a) SG100 Responsiveness - The CAB has not provide sufficient information in the rational on whether "*action has been taken by management, when required*". Whilst there is a harvest strategy in place, is there evidence of its use, in order to gauge the "responsiveness" of the harvest strategy? SA2.4.1(b) states ""*Designed" at SG100 scoring issue (a) to mean a harvest strategy that includes a management procedure (MP) that has been developed through management strategy evaluation (MSE)*". The rational provided by the assessor does not address these two fundamental elements of SG100 when considering "design". It is not clear whether an MP has been developed or whether a MSE was conducted?	SI(a). We have added text to clarify that the strategy is "responsive". For example, the TACCs for HOK 1 and HAK 7 were reduced because their stock sizes were below their target levels and were approaching their limit reference points (Table 18 and Table 21). We also now clarify that the HCR component of the harvest startegy was selected using a MSE process.	No score change, additional evidence presented

New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake, Ling New Zealand	Trawl	PR A	1.2.1	Change to rationale or evidence expected, not to scoring	SI(b) SA2.4.1 (d) states "Evaluated" at SG100 scoring issue (b) to mean "*tested for robustness to uncertainty, appropriate to the scale and intensity of the UoA*"." Whilst it is understood that the harvest strategy has undergone MSE, it is not clear if that MSE tested for robustness to uncertainty, appropriate to the scale and intensity of the UoA.	There is no explicit guidance what constitutes "appropriate to the scale and intensity of the UoA" but the MSEs did examine the key uncertainties that are commonly explored in best practice MSEs although as scored under 1.2.2(b) the MSE work did not address ecological implications such as would require an ecosystem operating model. We have added additional text to clarify that the MSEs explored the primary sources of uncertainty relevant to fisheries of these types.	No score change, additional evidence presented
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake, Ling New Zealand	Trawl	PR A	1.2.1	Minor score reduction expected	SI(d) The rational states that the HCR was reviewed in 2025. However, there is no mention of review of the HS? The HCR and HS are two different things. Was the HS reviewed? If so when and were changes made if necessary? If the HS has not been reviewed, then SG100 is not met.	The HCR is the key component of the harvest startegy but the harvest startegy standard itself was not reviewed - score reduced to a level consistent with 80.	Minor score reduction made
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake, Ling New Zealand	Trawl	PR A	1.2.2	Minor score reduction expected	SI(a) SA2.5.3 states "*In scoring issue (a) at the SG100 level, where quantitative simulation testing is available "most of the time", the team shall interpret the stock as being maintained at or above BMSY or some ecologically more relevant target point at least 70% of the time*". The rational provided does not address this element, The CAB has provided no indication of a value with regard to the amount of time the	The rationale has been expanded to refer to the fact that the simulation results for ling show that the stocks are predicted (for most MSE scenarios) to remain well about the BMSY in the operating model (which is less than the target of the HCR).	No score change, additional evidence presented

							various stocks have been either maintained or above the relevant target point. If there is not a more definitive rational provided, then SG100 is not met.		
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake, Ling New Zealand	Trawl	PR A	1.2.2	Change to rationale or evidence expected, not to scoring	SI(c) the rational provided for SG100 being met requires further explanation as per GSA2.5.4. For example, as stated "*the team should not use F < FMSY* (i.e., catch being below agreed catch limits) *as the sole evidence for the existence of an effective HCR*". This could be occurring for numerous reasons and not solely reliant on the tools. Greater discussion on the tools in use and how they are effective in achieving the exploitation levels required under the HCRs.	We have added additional reference to the tools used to ensure that exploitation rates are achieved as expected.	No score change, additional evidence presented
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake, Ling New Zealand	Trawl	PR A	1.2.3	Change to rationale or evidence expected, not to scoring	SI(c) Whilst it is understood that these species are QMS species and therefore all commercial fishers need to report against catches, what about recreational catch? Further it would be good for the assessor to provide further information/justification in the rational by including known catches/removals by the various	The report already refers to the few instances of illegal catch and catches of recreational fishers and customary users are negligible. We have added to text (and references to the plenary report where this is documented).	No score change, additional evidence presented

							sectors, as well as illegal activity (if any), to demonstrate evidence.		
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake, Ling New Zealand	Trawl	PR A	1.2.4	No comments (scoring agreed)	scoring agreed		NA (No response needed)
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	2.1.1	No comments (scoring agreed)	scoring agreed		NA (No response needed)
New Zealand hake, hoki, ling and Southern blue whiting fishery -	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	2.1.2	No comments (scoring agreed)	scoring agreed		NA (No response needed)

Hake, Hoki, Ling Trawl									
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	2.1.3	No comments (scoring agreed)	To note, 2.1.3 was not scored from the default tree, as RBF was use. Therefore, 2.1.3R was scored instead. scoring agreed		NA (No response needed)
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	2.2.1	No comments (scoring agreed)	scoring agreed		NA (No response needed)
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	2.2.2	No comments (scoring agreed)	scoring agreed		NA (No response needed)

New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	2.2.3	No comments (scoring agreed)	scoring agreed		NA (No response needed)
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	2.3.1	No comments (scoring agreed)	scoring agreed		NA (No response needed)
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	2.3.2	No comments (scoring agreed)	scoring agreed		NA (No response needed)

New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	2.3.3	Change to rationale or evidence expected, not to scoring	SI(b) as per GB1.4.1 and table B5 of the MSC Fisheries Standard Toolbox v1.2, the CAB has correctly indicated that TG3 has been met for all habitats. However, only PG1 has to be met for all scoring elements across SG60, 80 and 100. Therefore, PG2 and PG3 do not need to be scored or displayed under this SI.Scoring needs to be stated at the end of the rational so it is clear which SG is met. Currently unclear which SG is met.	Thank you for that reference to the relevant guidance. We have revised the scoring rationale to reflect PG1 is met therefore, in combination with TG3 being met, SG60, 80 and 100 are met for the scoring issue.	Score increased
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	2.4.1	No comments (scoring agreed)	scoring agreed.		NA (No response needed)
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	2.4.2	No comments (scoring agreed)	scoring agreed.		NA (No response needed)

New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	2.4.3	No comments (scoring agreed)	scoring agreed.		NA (No response needed)
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	3.1.1	No comments (scoring agreed)	scoring agreed.		NA (No response needed)
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	3.1.2	No comments (scoring agreed)	scoring agreed.		NA (No response needed)
New Zealand hake, hoki, ling and Southern blue whiting fishery -	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	3.1.3	No comments (scoring agreed)	scoring agreed.		NA (No response needed)

Hake, Hoki, Ling Trawl									
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	3.2.1	No comments (scoring agreed)	scoring agreed.		NA (No response needed)
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	3.2.2	No comments (scoring agreed)	scoring agreed.		NA (No response needed)
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	3.2.3	No comments (scoring agreed)	scoring agreed.		NA (No response needed)

New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Hoki, Hake & Ling New Zealand	Trawl	PR A	3.2.4	No comments (scoring agreed)	scoring agreed.			NA (No response needed)

11.3.1.3. Condition Comments

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	Condition number	Condition code	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
Fishery	Assessment Start Year	Enter UoA stock/s covered by the condition	Enter UoA gear/s covered by the condition	Peer Reviewer (A/B/C)	Performance Indicator (PI)	Condition number as currently used in the CAB report	Is the condition fully and clearly defined?	Peer reviewers (PRs) should provide support for their answers in the left column by referring to the details of each condition as appropriate. Additional rows should be inserted where two or more discrete comments are raised on the same PI or condition, e.g. for different UoAs, scoring issues or scoring elements, allowing CABs to give a different answer in each case. Paragraph breaks may also be made within cells using the Alt-return keyboard shortcut. Detailed justifications are only required where the PR is suggesting some change is needed. In other cases, either confirm 'Condition agreed' or identify any	CABs should summarise their response to the Peer Reviewer comments in the CAB Response Code column and provide justification for their response in this column. Where multiple comments are raised by Peer Reviewers with more than one row for a single PI, the CAB response should relate to each of the specific issues raised in each row. CAB responses should include details of where different changes have been made in the report (which section #, table etc).	See codes page for response options

								places where unclear language could be improved (using the 'Minor change suggested to increase clarity' code).		
New Zealand hake, hoki, ling and Southern blue whiting fishery - Hake, Hoki, Ling Trawl	2025	Enter UoA stock/s	Enter UoA gear/s	PR A	2.4.1	1	Yes	agreed.		No change made

11.3.2. PRB

11.3.2.1. General Comments

Fishery	Assess-ment Start Year	Peer Reviewer (A/B/C)	Question	Yes/No	**Peer Reviewer Justification (as given at initial Peer Review stage).** Peer Reviewers should provide brief explanations for their 'Yes' or 'No' answers in this table, summarising the detailed comments made in the PI / RBF tables (first row) and conditions (second row).	**CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)**
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	PR B	Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	Yes	The report is well-written, with comprehensive and detailed analysis. There are some issues for which the the scoring implications are unknown, mainly to do with how scores are calculated. There are also a couple of areas that either need clarification and/or additional justification to support the scores given.	Thank you. Th issues raised have been addressed
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	PR B	Are the condition(s) raised appropriately written to clearly identify relevant scoring issues and scoring elements and define any milestones, consistent with the MSC process requirements? [Reference: FCP v3.0 Section 7.16]	Yes	For Condition 2 it is suggested that clarity be increased by the addition of a summary of the scoring rationale in the Justification row. Otherwise conditions are agreed.	Agreed. Summary included in Condition table justification.

New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	PR B	Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below.	NA	p.8 Glossary - suggest adding BOMEC - Benthic Optimised Marine Environment Classification - as it is a term regularly used in the P2 Habitats background and in the PI scoring table, it would aid clarity to have it listed in the Glossary.	Agreed. Added to glossary.
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	PR B	Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below.	NA	p.19, Section 6.4.2, final sentence - doesn't appear relevant to SBW, nor to the UoA fishing areas considered in this assessment. Suggest clarifying the connection to SBW or deleting irrelevant information.	Agreed. Final sentence deleted.
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	PR B	Optional: General Comments (continued)	NA	p.20, Section 6.4.3.1, last three paragraphs all reference trawl surveys with regard to hoki, hake and ling, but not SBW. Suggest clarifying the connection to SBW or referencing other trawl surveys relevant to the UoAs considered in this assessment.	Noted. To be clear we are here not only summarising for SBW but capturing the full scope of montioring tools available within New Zealand that could be applied also to SBW.
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-	2025	PR B	Optional: General Comments (continued)	NA	p.26, typo: "Evidence required framework" should say "Evidence Requirements Framework"	Thank you, corrected.

Southern Blue Whiting						
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	PR B	Optional: General Comments (continued)	NA	p.27, Recommendation 1, progress on fisheries specific chapters [of what?] - suggest clarifying here to give a bit of context in this summary.	Southern Blue whiting Fisheries Plan Chapter in the National Fisheries Plan for Deepwater and Middle Depth Fisheries. This has been clarified in the report.
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	PR B	Optional: General Comments (continued)	NA	p.32, 2nd last category in table 'The point from which subsequent Chain of Custody (CoC) is required': information only mentions hoki, hake and ling, not SBW. Information about SBW required.	Thank you. This has been added in the report
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	PR B	Optional: General Comments (continued)	NA	p.48, 3rd last paragraph, values missing in first sentence: "The HCRs explored were all of the form: where [?] is an estimate of acoustic biomass and [?} is the catch." And 2nd sentence: "The value of the [?] was selected to satisfy a desired risk objective...." And final sentence: "The value for [?] was found to be 0.22 by Doonan (2017)."	Well that was surprising. The correct equation was in the original draft and vanished somewhere along the line. The equation has been re-added.
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	PR B	Optional: General Comments (continued)	NA	p.51 typo in Rationales for SIa and SIb - "GSA 2.24" should be "GSA 2.2.4"	Corrected

New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	PR B	Optional: General Comments (continued)	NA	p.64, Table 29, typo? Caption states catch composition is in tonnes (t), while Heading for column 8 states (kg). Is there a reason these are inconsistent?	Typo. Thank you.
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	PR B	Optional: General Comments (continued)	NA	p.77 last two sentences. What does FRML stand for? Not in Glossary. Also, it might help clarify how ETP species are managed if there was a general summary about management decisions (or maybe just scientifc advice?) being based on, or consistent with, or informed by FRMLs (e.g., what's the process, how are they used?). This could be included in Section 10.2.1.2.1 of the report.	Fishing-Related Mortality Limit. We agree in principle, however with the New Zealand Sea Lion being impacted at negligible levels we won't go further into the management decision regime in this instance.
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	PR B	Optional: General Comments (continued)	NA	p.154, typo in paragraph beginning "The National Fisheries for Deepwater…" should say "The National Fisheries Plan for Deepwater…".	Thank you - corrected
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	PR B	Optional: General Comments (continued)	NA	p.182, Condition row, C. and D. - should these be A. and B.?	Thank you

11.3.2.2. PI Comments

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	PR comment code	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Res-ponse Code
Fishery	Assess-ment Start Year	Enter UoA stock/s, and insert extra rows for P1 PIs as needed, e.g. if separate scores given for different UoA stocks	Enter UoA gear/s, and insert extra rows for P2 PIs as needed, e.g. if separate scores given for different UoA gear types	Peer Revie-wer (A/B/C)	Perfor-mance Indica-tor (PI)	Enter code below to summarise the comment and any expected score change	Peer reviewers (PRs) should provide support for the codes used in the left column by referring to specific scoring issues and/or scoring elements, and any relevant documentation as appropriate. Additional rows should be inserted for any PIs where two or more discrete comments are raised, e.g. for different scoring issues, allowing CABs to give a different answer in each case. Paragraph breaks may also be made within cells using the Alt-return keyboard shortcut. Detailed justifications are only required where the PR is suggesting some change is needed. In other cases, either confirm 'scoring agreed' or identify any places where weak rationales could be strengthened (using the 'Change suggested to increase clarity' code).	CABs should summarise their response to the Peer Reviewer comments in the CAB Response Code column and provide justification for their response in this column. Where multiple comments are raised by Peer Reviewers with more than one row for a single PI, the CAB response should relate to each of the specific issues raised in each row. CAB responses should include details of where different changes have been made in the report (which section #, table etc).	See codes page for response options
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting - 6B (UoA 11)	Demersal & semi-pelgic trawl	PR B	1.1.1	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)

New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting - 6I (UoA 12)	Demersal & semi-pelgic trawl	PR B	1.1.1	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting - 6B (UoA 11)	Demersal & semi-pelgic trawl	PR B	1.2.1	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting - 6I (UoA 12)	Demersal & semi-pelgic trawl	PR B	1.2.1	Minor score reduction expected	Check calculations for overall Performance Indicator score. As one SI for SBW 6I did not achieve 100, whereas for SWB 6B it did, and there are no other differences in the scores between the UoAs, the score shouldn'tt be the same as that assigned to SWB 6B, i.e., SWB 6I should score less than 95. Otherwise, SI scores themselves agreed.	We agree - scored reduced to 90	Minor score reduction made

New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting - 6B (UoA 11)	Demersal & semi-pelgic trawl	PR B	1.2.2	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting - 6I (UoA 12)	Demersal & semi-pelgic trawl	PR B	1.2.2	Scoring implications unknown	SIa. The rationale for scoring 100 does not cite references nor justify how HCRs take "into account the ecological role of the stock". Nor is the P1 Background on HCRs (and the HSS) explicit about this. The rationale and evidence cited in the background seems more consistent with a score of 80 for this Scoring Issue. If there is evidence elsewhere in the P1 Background about how HCRs, or the references points themselves, take into account the ecological role of stocks, this could support the justification for the score, but should be made explicit in the wording in the scoring table and referenced.	The guidelines for applying the HSS (MPI, 2011) refer to the fisheries management targets accounting for ecosystem (and other) considerations and that catch levels should be set more conservatively than those that meet single-species considerations alone. Southern blue whiting would not be considered low trophic level species. However, the MSE work has not referenced how ecological role was accounted for. The score has therefore been reduced to that consistent with 80.The text of harvest strategies sectionhas been revised to include the additional material regarding ecosystem considerations.	Minor score reduction made
New Zealand Hake, Hoki, Ling and Southern	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	1.2.3	Change to rationale or evidence expected, not to scoring	SIc. Final sentence should say: "Thus SG80 is met."	Corrected	No score change, change to rationale

Blue Whiting-Southern Blue Whiting									
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	1.2.3	Scoring implications unknown	Three Scoring Issues all score 80, none score 100, but the score given for the PI is 85. Shouldn't the score be 80 for both UoAs? If an upwards adjustment is permissible in the FCP, in this case, shouldn't this be explained in the report.	The score was reduced from 85 to 80. Some initial scores were revised during the CPRDR stage but not carried into the PCDR report. Corrected	Minor score reduction made
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	1.2.4	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)
New Zealand Hake, Hoki, Ling and Southern	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	2.1.1	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)

Blue Whiting-Southern Blue Whiting									
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	2.1.2	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	2.1.3	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)
New Zealand Hake, Hoki, Ling and Southern Blue	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	2.2.1	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)

Whiting-Southern Blue Whiting									
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	2.2.2	Scoring implications unknown	Not all SIs achieved 100 score - SIb only has SG80, however does that mean the overall PI score when everything else scores 100, can be 100? Or should it be 95 because two of the three scored SIs fully met SG100, and one met SG80? If this upwards adjustment to 100 is to reflect very high performance, and is permissible under the FCP, should this be explained somewhere?	Per FCP 3.1, paragrpah 7.15.4, b: In order to achieve a 100 score, all the SG60s, all the SG80s, and all the SG100s shall be met. This requirement is satisfied and SG100 is met.	No change made
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	2.2.3	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)
New Zealand Hake, Hoki, Ling and Southern Blue	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	2.3.1	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)

Whiting-Southern Blue Whiting									
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	2.3.2	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	2.3.3	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)
New Zealand Hake, Hoki, Ling and Southern Blue	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	2.4.1	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)

Whiting-Southern Blue Whiting									
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	2.4.2	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	2.4.3	Minor change suggested to increase clarity	SIb. 2nd paragraph includes the following sentence: "The team anticipates dialogue with ecosystem experts during the site visit might support scoring." This seems a leftover from the ACDR. Was there anything significant revealed through dialogue at the site visit? If so, suggest including or delete the sentence. Otherwise scoring agreed.	Thank you. Sentence deleted.	No score change, change to rationale
New Zealand Hake, Hoki, Ling and Southern Blue	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	3.1.1	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)

Whiting-Southern Blue Whiting									
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	3.1.2	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	3.1.3	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)
New Zealand Hake, Hoki, Ling and Southern Blue	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	3.2.1	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)

Whiting-Southern Blue Whiting									
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	3.2.2	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	3.2.3	Change to rationale or evidence expected, not to scoring	SIc. Table 51 on Row 3, Column 1, minor structural error - should be about "Completeness. To what extent does the information capture all relevant elements and dimensions". It currently shows the "Consistency" criterion. The remainder of the row appears correctly applicable to Completeness. However, the assessment (in the Table) of completeness seems incomplete given the high score, mentioning only multiple sources. Being more explicit in Table 51 about compliance information being representative of both UoAs over a given time frame, or the extent to which information provides an up-to-	Thank you. We agree with your suggestions and the text has been revided in the report.	No score change, change to rationale

							date description of compliance in thel UoAs, would strengthen the assessment that they both meet the TG3 guidepost. Otherwise scoring agreed.		
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelgic trawl	PR B	3.2.4	No comments (scoring agreed)	Scoring agreed.		NA (No response needed)

11.3.2.3. Condition Comments

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	Condi-tion number	Condition code	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Res-ponse Code

Fishery	Assess-ment Start Year	Enter UoA stock/s covered by the condition	Enter UoA gear/s covered by the condition	Peer Revie-wer (A/B/C)	Perfor-mance Indica-tor (PI)	Condi-tion number as currently used in the CAB report	Is the condition fully and clearly defined?	Peer reviewers (PRs) should provide support for their answers in the left column by referring to the details of each condition as appropriate. Additional rows should be inserted where two or more discrete comments are raised on the same PI or condition, e.g. for different UoAs, scoring issues or scoring elements, allowing CABs to give a different answer in each case. Paragraph breaks may also be made within cells using the Alt-return keyboard shortcut. Detailed justifications are only required where the PR is suggesting some change is needed. In other cases, either confirm 'Condition agreed' or identify any places where unclear language could be improved (using the 'Minor change suggested to increase clarity' code).	CABs should summarise their response to the Peer Reviewer comments in the CAB Response Code column and provide justification for their response in this column. Where multiple comments are raised by Peer Reviewers with more than one row for a single PI, the CAB response should relate to each of the specific issues raised in each row. CAB responses should include details of where different changes have been made in the report (which section #, table etc).	See codes page for response options
New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting - 6B (UoA 11)	Demersal & semi-pelagic trawl	PR B	1.2.2	1	Yes	Condition agreed.		No change made

New Zealand Hake, Hoki, Ling and Southern Blue Whiting-Southern Blue Whiting	2025	Southern Blue Whiting (Both UoAs)	Demersal & semi-pelagic trawl	PR B	2.4.1	2	Minor change suggested to increase clarity	Condition agreed. For the sake of clarity and future readability (and surveillance audit reports), a summary of the scoring rationale should be included in this table.	Noted, summary included.	No change made

11.3.3. MSC TO Comments

SubID	PageReference	Grade	RequirementVersion	OversightDescription	Pi	CABComment
37849	114-115	Minor	FCP-7.15.10.1 v3.1	UoA 1-10 (Hoki): PI 1.2.1(f) It is unclear from the rationale if the review of alternative measures occurs every 5 years. Rationale states that reivew has happened within the last 5 years but does not state a plan.	1.2.1	We have added references to the 2024 and 2025 plans related to discarding
37850	53	Minor	FCP-7.15.10.1 v3.1	UoA 11 & 12 (SBW): PI 1.2.1(f): It is unclear from the rationale if the review of alternative measures occurs every 5 years. Rationale states that reivew has happened within the last 5 years but does not state a plan.	1.2.1	We have added references to the 2024 and 2025 plans related to discarding
37857	73	Minor	FCP-7.15.10.1 v3.1	UoA 13-17 (Ling): PI 1.2.2(a): It is unclear which scoring is attributed to this PI. The rationale states that SG100 is not met, but scoring guidepost is scored at SG100.	1.2.2	This was a typo it should have been "no" - the score was correct

37853	102	Minor	FCP-7.15.10.1 v3.1	UoA 11&12 (SBW):PI 2.1.2(c): It is unclear from the rationale if the review of alternative measures occurs every 5 years. Rationale states that reivew has happened within the last 5 years but does not state a plan.	2.1.2	Thanks for flagging this socring issue. Upon review it has been assessed as "not applicable" as there are in fact no main or minor scoring elements with all non-target species catch meeting the definition of "negligible" per SA3.1.1.d.ii.
37858	140	Minor	FCP-7.15.10.1 v3.1	UoA 13-17 (Ling): PI 2.1.2(c): It is unclear from the rationale if the review of alternative measures occurs every 5 years. Rationale states that reivew has happened within the last 5 years but does not state a plan.	2.1.2	Thank you, additional references to the revisions tot eh Fisheries Amendments relating to discards have been added and it has been clarified that the reviews to gear changes are reported at least once every 5 years.

37855	122-123	Minor	FCP-7.15.10.1 v3.1	UoA 11&12 (SBW): PI 2.2.3(b): It is unclear from the rationale if the scoring guidepost of SG100 has been met. The rationale does not state if the information is adequate to evaluate the effectiveness of the measures to minimise mortality with a high degree of certainty.	2.2.3	Thank you, an additional paragraph added to justify scoring at SG100.
37860	160-161	Major	FCP-7.15.7.4 v3.1	UoA 13-17 (Ling): PI 2.2.3: It is unclear as to why the overall PI score of 95 was scored for this PI. According to the rationale of 2.2.3(a) is scored at SG80, with 2.2.3(b) scored at SG100. According to FCP v3.1 clause 7.15.4.ii "The team shall assign 90 where performance against the SIs is mid-way between SG80 and SG100".	2.2.3	Corrected
37851	232	Minor	FCP-7.15.10.1 v3.1	UoA 1-10 (Hoki): PI 2.3.2(b) It is unclear from the rationale what the effect of the increased percentage of tows with captures is on the	2.3.2	Thank you for this comment, it has been incorporated into the scoring rationale with a consequent

				sessile benthic invertebrate taxa.		reduction in score to SG80.
37852	241	Guidance	FCP-7.15.10.1 v3.1	UoA 1-10 (Hoki): PI 2.4.1(a) It is unclear from the rationale if the assessment team has considered the indirect effects on ETP/OOS. It states information regarding this after the recommendation, making it unclear if it is part of the recommendation or considered in the scoring.	2.4.1	Thank you, the text referring to indirect effects has been moved to form part of the rationale to meet SG60 and SG80. It is clearer now that the Recommendation is linked to not meeting SG100.
37856	160	Minor	FCP-7.15.10.1 v3.1	UoA 11&12 (SBW): PI 3.2.2(b): It is unclear which scoring is attributed to this PI. The rationale states that SG100 is not met, but scoring guidepost is scored at SG100. Additionally, it is unclear if the overall score for this PI has been properly adjusted.	3.2.2	Thank you. This has been corrected in the SBW report .. Also all three reportsHHL, LL and SBW now score 3.2.2 at 90.
37869	31	Guidance	FCP - 7.17.6.i v3.1	As per FCP 7.17.6.i, "the CAB shall document in the 'MSC Reporting Template': how fish and fish products can be identified or can be		Text has been added in all reports, SBW, HHL and LL to show fish and fish products can be confirmed as

				confirmed as certified at the point that it enters certified chains of custody." While it is stated that all shareholders of the NZ Seafood Deepwater Council are all eligible to make use of the fishery certificate and sell products as certified, it is unclear how individual members of the council can be identified and verified as such at the point of sale.		certified at the point that it enters certified chains of custody. Also text to show how individual members of the council can be identified and verified as such at the point of sale.

9.1. Stakeholder input

No written statements were received from stakeholders

9.2. Conditions

9.2.1. Summary of conditions closed under previous certificate

There were no open conditions on these fisheries

9.2.2. Conditions

Table 52. Condition 1 (SBW 6B) – PI1.2.2

Performance Indicator	1.2.2 (a) (Harvest Control Rules and Tools) - HCRs design and application
Score	75
Justification	The HCR for SBW 6B aims to maintain stocks above a target level consistent with achieving MSY and reduces the catch limit as a function of biomass. It was designed based on the probability of dropping below $0.2B_0$ over 120 years not exceeding 10%. Thus, it meets SG 60 because the HCR "acts to keep the stock above an LRP that avoids possible recruitment failure and attempts to maintain the stock at a TRP that is consistent with B_{MSY} or a similar "highly productive" level." (GSA2.5). SG 80 is not met because the harvest control rule for SBW 6B is based on a constant exploitation rate so the exploitation rate is not reduced as the PRI is approached.
Condition	A. By the second surveillance audit, the client should provide evidence that the existing HCR for SBW 6B has been modified so that the exploitation rate corresponding to the TACC is reduced as the PRI (e.g. New Zealand soft limit) is approached, and that the stock would be expected to be fluctuating around a target level consistent with (or above) MSY. B. At each of the third and fourth surveillance audits, the client should provide evidence that the harvest control rule is place and that catches are less than the outcomes of the harvest control rule.
Condition start	Recertification
Condition deadline	The condition should be closed on the 4th surveillance audit, when sufficient time should have elapsed to provide evidence that the HCR is in place.
Exceptional circumstances	No
Milestones	1. Year 1. Provide evidence that candidate HCRs that include features to ensure that the exploitation rate corresponding to the TACC is reduced as the PRI is approached and are such that the stock would be expected to be fluctuating around a target level consistent with (or above) MSY have been identified. 2. Year 2. Provide evidence that one of the candidate HCRs has been selected and has been adopted ("is in place"). 3. Year 3. Provide evidence that the adopted HCR is in place and its results are informing management decision making, and that catches are not exceeding the outputs from the HCR. 4. Year 4. Confirm that the adopted HCR continues to be in place that its results continue to inform management decision making, and that catches continue not to exceed the outputs from the HCR.
1. Verification with other entities	None
Complete the following rows for reassessments and/or transition assessments.	
Carried over condition	No
Related condition	No
Condition rewritten	No

9.3. Client Action Plan

Marine Stewardship Council fisheries assessments

New Zealand Hake, Hoki, Ling and Southern Blue Whiting Fishery – Southern Blue Whiting Trawl

MSC Client Action Plan

1. Introduction

Table 1: Key Details

Fishery name	**Southern Blue Whiting Trawl**
Report author	Jo Akroyd, Stewart Norman and André Punt
Report author association	LRQA (Seafood) Limited
Client name	Seafood NZ, Deepwater Council
Client contact person	Aaron Irving
Date of Client Action Plan	August 2025

2. Summary of conditions

The report should include a table, summarising conditions raised by the CAB in the assessment. This information can be found in Client and Peer Review Draft Report assessment.

Table 2: Summary of conditions

Condition number	Condition	Performance Indicator (PI)	Deadline
1	A. By the second surveillance audit, the client should provide evidence that the existing HCR for SBW 6B has been modified so that the exploitation rate corresponding to the TACC is reduced as the PRI (e.g. New Zealand soft limit) is approached, and that the stock would be expected to be fluctuating around a target level consistent with (or above) MSY. B. At each of the third and fourth surveillance audits, the client should provide evidence that the harvest control rule is place and that catches are less than the outcomes of the harvest control rule.	1.2.2	2029

3. Summary of conditions

The report should include:

- *Completed tables for all Performance Indicators (PIs) that have conditions assigned to them in the Client and Peer Review Draft Report.*
- *A new table should be completed for each PI with a condition.*

Table 3: PI 1.2.2

1	Condition number
1	
2	**Performance Indicator(s)**
1.2.2 – There are well-defined and effective HCRs in place.	
3	**Score**
75	
4	**Condition(s)**
A. By the second surveillance audit, the client should provide evidence that the existing HCR for SBW 6B has been modified so that the exploitation rate corresponding to the TACC is reduced as the PRI (e.g. New Zealand soft limit) is approached, and that the stock would be expected to be fluctuating around a target level consistent with (or above) MSY. B. At each of the third and fourth surveillance audits, the client should provide evidence that the harvest control rule is place and that catches are less than the outcomes of the harvest control rule. **Justification** The HCR for SBW 6B reduces the catch limit as a function of biomass and was designed based on the probability of dropping below $0.2B_0$ over 120 years not exceeding 10%. Thus, it meets SG 60 because the HCR "acts to keep the stock above an LRP that avoids possible recruitment failure and attempts to maintain the stock at a TRP that is consistent with B_{MSY} or a similar "highly productive" level." (GSA2.5). SG 80 is not met because the harvest control rule for SBW 6B is based on a constant exploitation rate so the exploitation rate is not reduced as the PRI is approached.	
5	**Milestone(s)**
1. Year 1. Provide evidence that candidate HCRs that include features to ensure that the exploitation rate corresponding to the TACC is reduced as the PRI is approached and are such that the stock would be expected to be fluctuating around a target level consistent with (or above) MSY have been identified. 2. Year 2. Provide evidence that one of the candidate HCRs has been selected and has been adopted ("is in place"). 3. Year 3. Provide evidence that the adopted HCR is in place, and that catches are not exceeding the outputs from the HCR. 4. Year 4. Confirm that the adopted HCR continues to be in place that its results continue to inform management decision making, and that catches continue not to exceed the outputs from the HCR.	

6	Summary of action plan		
This action plan outlines the steps to ensure that a well-defined and effective HCR is in place for SBW6B. It includes identifying candidate HCRs, adopting and implementing the selected HCR, and demonstrating that management decisions and catches are consistent with HCR outputs.			
Milestone	**Action**	**Roles & responsibilities**	**Outputs**
Year 1. Provide evidence that candidate HCRs that include features to ensure that the exploitation rate corresponding to the TACC is reduced as the PRI is approached and are such that the stock would be expected to be fluctuating around a target level consistent with (or above) MSY have been identified.	Review and evaluate candidate HCRs for SBW6B that include mechanisms to reduce exploitation rates as the PRI (e.g. NZ soft limit) is approached, and that are expected to maintain stock around or above BMSY.	SNZ DWC coordinate with FNZ science team to evaluate options; CAB review adequacy of evidence.	Report of candidate HCRs, including technical justification and expected stock trajectories relative to MSY.
Year 2. Provide evidence that one of the candidate HCRs has been selected and has been adopted ("is in place").	Select and formally adopt an HCR from the identified candidates that meets MSC requirements.	SNZ DWC confirm adoption through stock assessment working group/management process; CAB verify implementation.	Evidence of adoption of new HCR (e.g. documented rule in decision letter).
Year 3. Provide evidence that the adopted HCR is in place and that catches are not exceeding the outputs from the HCR.	Demonstrate that the adopted HCR is operational, its outputs are able to be used to inform management decisions, and catches are not exceeding the HCR-based limits.	FNZ implement and apply HCR in annual TAC/TACC setting; SNZ DWC provide catch records; CAB confirm through surveillance audit.	Management decision documents referencing the HCR, annual catch data showing compliance with HCR outcomes.
Year 4. Confirm that the adopted HCR continues to be in place that its results continue to inform management decision making, and that catches continue not to exceed the outputs from the HCR.	Confirm that the adopted HCR remains in place, continues to inform management, and catches remain within the HCR outputs.	Industry maintain HCR application; SNZ DWC demonstrate compliance through reporting; CAB verify through audit.	Ongoing management decisions consistent with the HCR, catch data confirming adherence to HCR outputs.

9.4. Surveillance

Table 53: Fishery surveillance program

Surveillance level	Year 1	Year 2	Year 3	Year 4
Level 4	*Off-site surveillance audit*	*On-site surveillance audit*	*Off-site surveillance audit*	*On-site surveillance audit & re-certification site visit*

Table 54: Timing of surveillance audit

Years	Anniversary date of certificate	Proposed date of surveillance audit	Justification
1	**6th February 2026**	*2026*	Evidence of progress towards conditions 1.2.2 and 2.4.1 to be provided remotely
2		*2027*	The auditors need to review evidence that one of the candidate HCRs is in place The auditors need to review the research plan to provide up to date determinations of changes to key ecosystem indicators
3		*2028*	Evidence of progress towards conditions 1.2.2 and 2.4.1 to be provided remotely
4		*2029*	The auditors need to confirm that the adopted HCR continues to be in place that its results continue to inform management decision making, and that catches continue not to exceed the outputs from the HCR. The auditors need to assess that the client fishery can demonstrate that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be serious or irreversible harm.

Table 55: Surveillance level justification

Year	Surveillance activity	Number of auditors	Justification
1	*Offsite audit*	*2 auditors offsite*	Condition 1: 1.2.2.Provide evidence that candidate HCRs that include features to ensure that the exploitation rate corresponding to the TACC is reduced as the PRI is approached and are such that the stock would be expected to be

			fluctuating around a target level consistent with (or above) MSY have been identified
2	*On site*	*2 auditors on site*	*1.* Condition 1: 1.2.2. Provide evidence that one of the candidate HCRs has been selected and has been adopted ("is in place").
3	*Off site*	*2 auditors offsite*	1. Condition 1: 1.2.2. Provide evidence that the adopted HCR is in place and its results are informing management decision making, and that catches are not exceeding the outputs from the HCR.
4	*On site*	*3 auditors*	Condition1: 1.2.2. Confirm that the adopted HCR continues to be in place that its results continue to inform management decision making, and that catches continue not to exceed the outputs from the HCR.

9.5. Harmonised fishery assessments

There are a few other fisheries in New Zealand and the surrounding areas that are MSC certified, but these operate on a different scale targeting different stocks compared to this fishery. While other assessments have been reviewed in relation to general fisheries management aspects under P3, it is determined that there is harmony.

Overlapping Fisheries		
Fishery Name	Certification Status	Standard version and harmonised principles
New Zealand Hoki, Hake and Ling Trawl Fishery	This fishery	This reassessment on V3.1 – P3
New Zealand orange roughy	Certified	V2.01 – P3

9.6. Peer reviewers – summary of qualifications and competencies

Chris Grieve

Chris has 25+ years' experience in fisheries management and policy-making from local to global levels. First as research assistant to Australian stock assessment scientists, then the manager of complex Australian demersal trawl and dredge fisheries. She moved to the UK in 2000 to lead the Sustainable Fisheries Policy Research Programme for a London-based think tank where the mission was influencing change in the EU's Common Fisheries Policy. In 2002, Chris became International Policy Director for the Marine Stewardship Council (MSC) to lead MSC's work on standards, certification and accreditation, governing bodies and developing world fisheries. Chris's role evolved to become Associate Director between 2005 and 2010 after she established Meridian Prime as a consulting company with a diverse portfolio of work. Chris led and participated in work on the development, evolution and implementation of the MSC standard and certification requirements. She has also led and participated in sustainable fisheries-related projects for client organisations in the UK, across Europe and the USA. Chris has been team member on fishery assessments and surveillance audits under the MSC certification scheme; and is an approved independent peer reviewer for MSC's Peer Reviewer College. On a consultancy basis, Chris is Executive Director Standards & Impact of the EDGE Certified Foundation: a Swiss-based, global certification scheme focusing on gender equality in the workplace. Chris served until recently as a Board Director for WOCAN (an international non-profit focusing on gender equality in natural resource management in the global south) and was on the founding Advisory Board of Ocean Outcomes (a US-based non-profit focusing on sustainable fisheries). Chris was a founding Trustee and Vice Chair of the ISEAL Alliance, the global sustainability standards organization; and a statutory-appointed member of two Australian fisheries management public boards.

Peter Trott

Peter is Director of FishListic, an independent sustainable seafood consultancy. Peter has 20 years' experience in fisheries management, resource sharing, ecosystem principles, project management, seafood markets, supply chains and traceability. During the eight years at WWF-Australia, Peter lead on international and domestic seafood markets. Peter was the architect of key strategic seafood market partnerships with retailers, brand owners and aquaculture companies. He has been involved in the Marine Stewardship Council (MSC) and with fishery certifications across the globe, including as co-client. He is a certified MSC Chain of Custody auditor, fishery team-member, fishery team-leader, certified SA8000 social auditor and ISO19011-2018 accredited. Peter is a member of the MSC Stakeholder Advisory Council. Peter was a fisheries manager with two fisheries agencies for eight years, and holds a Bachelor of

Science (Fisheries Management and Aquaculture) with an honours degree in Aquatic Sciences from Deakin University.

9.7. Assessment Team – biographies/summaries of CVs

Jo Akroyd Team Lead and P3

Jo has over 30 years' experience in marine fisheries policy, research, management and governance. She has extensive international and Pacific experience and has worked at senior levels in both the public and private sectors in these roles. 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 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. Jo has worked on many fisheries aid projects in the Pacific including Cook Islands, Solomon Island, Fiji, Vanuatu, Papua New Guinea and Timor-Leste and also in Myanmar. As well as carrying out general fisheries consultancy since 1994 she has undertaken all facets of MSC work as a lead assessor, expert team member and peer reviewer across a wide range of fisheries. Jo has completed the MSC v1.3, v2.0, v2.1, v2.2 and v 3.0 and V3.1 training modules including for enhanced fisheries, Risk based framework and traceability. She is a member of the MSC's Peer Review College,

MSC projects include Team Leader and Fisheries Management expert for New Zealand fisheries, (hoki, hake, ling, southern blue whiting, albacore and skipjack), Fiji (albacore, yellowfin and bigeye tuna), Japan (scallops, skipjack and yellowfin), China (scallops, flounder and snowcrab), Maldives (skipjack), Ross Sea (toothfish), West Papua (skipjack and yellowfin). More recently she was the Team Leader for the MSC assessment for the AGAC four oceans albacore, yellowfin and bigeye tuna fisheries. Jo has conducted multi species pre-assessments in Japan, China, Viet Nam, Australia and New Zealand and provided independent Peer review reports for tuna, scallops and prawn fisheries in many countries

Andre Punt P1

Dr. André Punt is a Professor in the School of Aquatic and Fishery Sciences at the University of Washington. He holds a PhD in Applied Mathematics from the University of Cape Town (South Africa). He has been involved in stock assessment and fisheries management for over 35 years and has been recognized for his contributions in this area with awards from CSIRO, the University of Washington, the Australian Society for Fish Biology, and the American Fisheries Society. His research relates broadly to the development and application of fisheries stock assessment techniques, bioeconomic modelling, and the evaluation of the performance of stock assessment methods and harvest control rules using the Management Strategy Evaluation approach. Dr. Punt has conducted stock assessments for a wide range of species, ranging from anchovies and sardines, to groundfish, tunas, and cetaceans. He has published over 450 papers in the peer-reviewed literature, along with over 400 technical reports. He was a member of a National Research Council panel on evaluating the effectiveness of fish stock rebuilding in the United States. Dr Punt is currently a member of the Scientific and Statistical Committee of the Pacific Fishery Management Council, the advisory committee for Center for the Advancement of Population Assessment Methodology, the Crab Plan Team of the North Pacific Fishery Management Council, and the Scientific Committee of the International Whaling Commission. He has been involved in MSC assessments, pre-assessments and surveillance audits for orange roughy, hoki, hake, and southern blue whiting in New Zealand. Dr. Punt has passed MSC training and has no Conflict of Interest in relation to this fishery. Full CV available upon request.

Stewart Norman P2

Stewart Norman is the Director of Capricorn Marine Environmental in South Africa, responsible for overarching project management in scientific observer programs and professional consulting since the start of 2019. He holds a Master's degree from the University of Cape Town in Applied Marine Science completed in 2013, specifically focusing on highly migratory large pelagic species. He has undertaken numerous scientific research projects contracted to regional management organisations, most notably with the IOTC, CCSBT and ICCAT. His work involves interpreting scientific data from commercial fishing fleets and incorporating it into fisheries management. He has a key role in the provision of scientific and fisheries management advice in support of the South African hake trawl fishery as an MSC client in their accreditation processes.

Stewart has been involved in numerous pre-assessments for a range of species (octopus, menhaden, lobster, kelp, tuna (FADs/non-FADs). He has 5 years of experience as a Principle 2 expert including as part of the team conducting the global purse seine fishery assessment of the AGAC fleet, the assessment of South Korean Pacific Ocean longline fleets and Ghanaian Pole and Line fishery. He also has 5 years' experience in the role of MSC Chain of Custody auditor.

9.8. Supporting Information

The below MSC variation request and response are available on the MSC track a Fishery website, and have been included here for completeness.

11.12.1 Variation Request

Table 1: Variation request

1	Date submitted to the MSC
24th February 2025 (amended 17th March 2025)	
2	CAB
LRQA	
3	Fishery name and certificate number
New Zealand hake, hoki, ling and Southern blue whiting - MSC-F-31397	
4	Lead auditor or program manager
Jo Akroyd – Lead Auditor Gillian Irvine – Program Manager	
5	Request prepared by
Gillian Irvine – Program Manager Jo Akroyd – Lead Auditor Stewart Norman – Principle 2 Auditor Andre Punt – Principle 1 Auditor	
6	Scheme requirement(s) for which variation requested
FCP v2.3 - 7.8.3 The team shall use the default assessment tree as set out in the MSC Fisheries Standard Section SA in all assessments, with the following exceptions. GCR v2.7 - 4.12.2 When submitting a variation request as allowed under these requirements, the CAB shall note that: c. The CAB shall only submit variation requests in advance of the circumstances occurring. The MSC will not accept retrospective variation requests.	
7	How many times has a variation against this requirement been accepted during this assessment or audit of this fishery?

0

Table 2 – Variation justification

1	Proposed variation
LRQA requests to change standard version 3.1 - SI 2.1.2d and SI 2.2.2d with standard version 2.01 – SI2.1.2d in the v3.1 reassessment of the New Zealand hake, hoki, ling and Southern blue whiting fishery (scoring issues included in justification below) As explained below while some of the shark species do pass the v3.1 PI the variation asks for a blanket modification to the assessment tree for the scoring issue in question to avoid any confusion with individual elements being assessed against different versions of the standard.	
2	Additional time requested (where applicable)
Original deadline date	NA
Modified deadline date requested	NA
Number of additional days requested	NA
3	Justification
The New Zealand hake, hoki, ling and Southern blue whiting fishery is currently undergoing reassessment. The site visit it is planned for the week commencing 24th of February 2025. Currently, there are reassessments announced against both standard versions. And the fishery is currently certified against v1.3 of the standard. At the ACDR stage the fishery is not meeting SG60 for 2.1.2d under V3.1.There has been a regulatory FNA requirement in New Zealand since 2014, following which the Minister gazetted eight exceptions to the fins attached requirement, which acknowledging that all Quota Management System (QMS) shark species must be landed if taken, provides for at sea-processing of eight QMS species of shark. Noting the definition of 'shark' under V3.1 of the Standard, three of the eight species to which the exemption applies are not scored as sharks. Within the UoAs, interactions with in-scope and ETP shark species to which the exemption applies have been assessed to be negligible. For the shark species to which the FNA applies, the assessment team finds that the intent of PI 2.1.2d is achieved and that TG3 of the ERF is met, with the following evidence available to confirm this: • Information to confirm that the UoA has adopted an FNA policy is available through Operational Procedures (OPs) in place, which are updated regularly/iteratively by the Deepwater Group. • OPs are communicated effectively to the deepwater fleet through an Information Portal available on the bridge of all UoA vessels • Implementation is supported through the full time Environmental Liaison Officer who is required to visit at least 90% of vessels in the Deepwater fleet each year • Information to confirm that an FNA or non-retention policy is enforced in the UoA is available through the high levels of representative observer coverage in the UoAs averaging 44.6% of tows observed in the hoki, hake and	

ling trawl fishery, 15.9% of hooks observed in the ling longline fishery and 95.4% of tows observed in the southern blue whiting fishery over the period 2018/19-2022/23.
- Observer reports include provision to record shark processing codes and instances of observed shark finning (noting that there have been no reported shark finning cases reported).
- Observers are positioned to directly observe vessel interactions with sharks throughout the catch operation, including reporting the fate of sharks either retained, processed or discarded.
- Vessel offloads are monitored Ministry for Primary Industries Fishery Officers and vessels are inspected to ensure all catch is landed from the vessel.

For the five species classified as 'sharks' under V3.1 and to which the Ministerial exemption applies it is therefore not possible to confirm that the UoA has adopted the FNA because GSA2.4.3–GSA2.4.4 of MSC Standard V3.1 does not permit exemptions to an FNA Policy.

The fishery client is developing measures to address these exemptions but their application would result in loss of revenue to vessels that currently process sharks onboard and additionally may not be fully implemented in time to able to consider this scoring issue under V3.1 met for the reassessment.

The fishery has the option to undergo reassessment against either V2.01 or V3.1 of the Standard and is voluntarily choosing to be recertified against V3.1. By opting to move forward with V3.1 the fishery is demonstrating a commitment to sustainability and supplying evidence of higher performance than what is necessary under v2.01 for all other Principle 2 PIs/SIs.

As explained above while some of the shark species do pass the v3.1 PI the variation asks for a blanket modification to the assessment tree for the scoring issue in question to avoid any confusion with individual elements being assessed against different versions of the standard.

This variation would allow the fishery, presuming a successful reassessment, to be certified against v3.1 of the standard. The fishery would be meeting the higher bar set in v3.1 of the standard on all other PIs/SIs.

The fishery shall be expected to follow the requirement that CABs shall apply the MSC Fisheries Standard v3.1 by 1 November 2030, thereby giving the fishery the same timeline as all other certified fisheries to implement what is necessary to meet SG60.

Scoring Issues
V3.1 - 2.1.2d, 2.2.2d – SG 60 - There is a high degree of certainty that shark finning is not taking place.
SA2.4.4 At scoring issue (e) at SG60, the team shall:

a) Determine that a fins naturally attached (FNA) policy is in place for all retained sharks.
   i. If the UoA does not retain sharks, the team shall determine that a non-retention policy is in place.
b) Apply the Evidence Requirements Framework in Tool B of the MSC Fisheries Standard Toolbox to establish that the information used to determine that an FNA or non-retention policy is in place and enforced has a very high degree of accuracy.

ERF Table B1 specifies when an evaluation of information trueness and precision must be applied. In the case of PI 1.2.1 SI (e), PI 2.1.2 SI (d), PI 2.2.2 SI (d), B1.2 applies if these SIs are scored (evaluation of trueness), whilst B1.3 (evaluation of precision) is not applicable.

ERF Table B3 prescribes relevant information to be considered in the evaluation of trueness to be: Information needed to determine the implementation of a fins naturally attached (FNA) or non-retention policy.

ERF Table B3 directs that information categories to be considered include: Information to confirm that the UoA has adopted an FNA or non-retention policy; and Information to confirm that an FNA or non-retention policy is enforced in the UoA.

V2.01 – 2.1.2d – SG 60 - It is likely that shark finning is not taking place.
SG80 - It is highly likely that shark finning is not taking place.
SG100 - There is a high degree of certainty that shark finning is not taking place.

SA2.4.5 When scoring SI (e) at SG60, the expectation shall be that one of the following subparagraphs applies:
SA2.4.5.1 If fins are cut on board:

a) There are regulations in place governing the management of sharks;
b) Shark fins and carcasses shall be landed together in compliance with a ratio specifically relevant for the species, fishing fleet and initial post catch processing (e.g., fresh/frozen/dried); and
   i. The team shall document the justification for using the specific ratio.
c) Good external validation of the vessels' activities is available to confirm that it is likely that shark finning is not taking place.

SA2.4.5.2 If sharks are processed on board:

a) There are regulations in place governing the management of sharks;
b) There is full documentation of the destination of all shark bodies and body parts; and
c) Some external validation of the vessel's activities is available to confirm that it is likely that shark finning is not taking place.

SA2.4.6 When scoring SI (e) at SG80, the expectation shall be that one of the following subparagraphs applies:
SA2.4.6.1 All sharks are landed with fins naturally attached; SA2.4.6.2 If sharks are processed on board:

a) There are regulations in place governing the management of sharks;
b) There is full documentation of the destination of all shark bodies and body parts; and
c) Good external validation of the vessels' activities is available to confirm that it is highly likely that shark finning is not taking place.

SA2.4.7 When scoring SI (e) at SG100, the expectation shall be that one of the following subparagraphs applies:
SA2.4.7.1 If sharks are landed with fins naturally attached, there is some external validation such that there is a high degree of certainty that shark finning is not taking place.
SA2.4.7.2 If sharks are processed on board

a) There are comprehensive regulations in place governing the management of sharks;
b) There is full documentation of the destination of all shark bodies and body parts; and
c) Comprehensive external validation of the vessels' activities is available to confirm with a high degree of certainty that shark finning is not taking place.

4	Implications for assessment

This variation would allow the fishery, presuming a successful reassessment, to be certified against v3.1 of the standard. The fishery would be meeting the higher bar set in v3.1 on all other PIs

5	Mitigation of the implications for assessment

LRQA shall retrospectively follow the modified assessment tree steps with some modifications: a. Apply for and obtain a variation from the MSC to 7.8.3 (this variation) b. Inform stakeholders about the draft assessment tree and the reasons for modifications. d. Upload the draft assessment tree to the MSC database for publication on the MSC website. e. Allow stakeholder input on the draft modified assessment tree for a period of 15 days. f. Consider all stakeholder input, recording why comments have been accepted or rejected. g. Review the decision to modify the assessment tree, considering stakeholder input. h. Upload the final assessment tree to be used to the MSC database for publication on the MSC website, within 10 days of the consultation period closing.	
6	How many conditions does the fishery have?
To be determined.	
7	What is the status of the current assessment or audit?
Reassessment site visit set for the w/c 24th of February 2025	
8	Other relevant information
9	If applicable, additional information added after the MSC's request

11.12.2 Variation Response

Marine Stewardship Council

Gillian Irvine
LRQA (Seafood) Limited

6 Redheughs Rigg
Edinburgh
United
Kingdom
EH12 9DQ

Sent by email

Date: 27/03/2025

New Zealand hake, hoki, ling and Southern blue whiting, request for variation to the MSC Certification Requirements.

- V2.3 - FCP-7.8.3 - The team shall use the default assessment tree as set out in the MSC Fisheries Standard Section SA in all assessments, with the following exceptions.
- V2.7 - GCR-4.12.2.c - When submitting a variation request as allowed under these requirements, the CAB shall note that:
  c. The CAB shall only submit variation requests in advance of the circumstances occurring. The MSC will not accept retrospective variation requests.

Dear Gillian Irvine,

I write with reference to your submission on 24/02/2025 of a request for variation to the MSC Certification Requirements (CR) to allow:

> LRQA to use a modified assessment tree for the reassessment of this fishery under v3.1 of the Fisheries standard, after publishing the ACDR. The proposed modified assessment tree would score shark finning using FS v2.01 - SI 2.1.2.d, instead of FS v3.1 - SI 2.1.2d and SI 2.2.2d. All shark species shall be scored using this modified assessment tree, following FS v3.1 for the definition of shark.

The requirements are integral to ensuring all MSC accredited Conformity Assessment Bodies operate in a consistent and transparent manner. The MSC intends that these requirements be met across all fisheries and CoC certificate holders, except in exceptional, well-justified circumstances, as part of the MSC programme.

MSC notes the factors presented supporting your request, including:

- The fishery has worked with the CAB to produce two ACDRs in order to compare the scoring between v2.01 and v3.1 of the Fisheries Standard. The ACDRs were published ahead of the site visit, which was conducted in the week of the 24th of February 2025.
- There is a Fins Naturally Attached (FNA) policy requirement in New Zealand since 2014, with eight exceptions to the requirement. Following the definition of 'shark' under Fisheries Standard v3.1, three of the eight species are not scored as sharks. For the remaining five shark species it is not possible to confirm that the UoA has adopted the FNA because GSA2.4.3–GSA2.4.4 of MSC Standard v3.1 does not permit exemptions to an FNA Policy.
- The assessment team have confidence that the intent of PI 2.1.2d is achieved and that the intent of TG3 of the ERF is met with the provided evidence. Such as an established observer program with good coverage, dockside monitoring, and available information that confirms that shark finning does not occur.
- The fishery is developing measures to address these exemptions but their application would result in loss of revenue to vessels that currently process sharks onboard, and may not be fully implemented in time to able to consider this scoring issue under v3.1 met for the reassessment. The policy measures will work to meet the v3.1 requirements by 2030.
- This variation would allow the fishery, presuming a successful reassessment, to be certified against v3.1 of the standard and be held to a higher bar in all other performance areas.
- The fishery shall be expected to follow Fisheries Standard v3.1 clause 7.32, that CABs shall apply the MSC

  Fisheries Standard v3.1 by 1 November 2030. Thereby giving the fishery the same timeline as all other certified fisheries to implement what is necessary to meet SG60.

Given the rationale provided, the MSC is willing to grant a variation to the CR in this case subject to the following conditions:

- The CAB shall follow the mitigation actions set out in section 5 of the variation request. This includes a public consultation period of 15 days for the draft modified assessment tree.

If you have any questions regarding this response, please do not hesitate to contact the relevant Fisheries Assessment Manager for this fishery.

Marine Stewardship Council cc: Assurance Services International

9.9. References (Bibliography)

Principle 1

Anderson, O.F. (2004). Fish discards and non-target fish catch in the fisheries for southern blue whiting and oreos. New Zealand Fisheries Assessment Report 2004/9. 40 p.

Anderson, O.F. (2009). Fish and Invertebrate Bycatch and Discards in Southern Blue Whiting Fisheries, 2002–07. New Zealand Aquatic Environment and Biodiversity Report No. 43. 42 p.

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

Casal2 Development Team (2022) Casal2 user manual for age-based models, v22.07 (2022-07-20). National Institute of Water & Atmospheric Research Ltd. NIWA Technical Report 139. 252 p

Casal2 Development Team (2024) Casal2 user manual for age-based models, v24.02 (2024-02-21). National Institute of Water & Atmospheric Research Ltd. NIWA Technical Report 139. 295 p.

Doonan, I.J. (2017). Evaluation of a simple harvest control rule for the Bounty southern blue whiting management area (SBW6B). New Zealand Fisheries Assessment Report 2020/52. *14p.*

Doonan, I. (2020). Southern blue whiting (*Micromesistius australis*) stock assessment for the Campbell Island Rise for data up to 2018-19. New Zealand Fisheries Assessment Report 2020/43. 20 p.

Doonan, I.J. (2023). Updated harvest control rule for SBW 6B to allow for years with no acoustic surveys. New Zealand Fisheries Assessment Report 2023/38. 5 p.

Doonan, I., Large, K., Dunn, A., Rasmussen, S., March, C., and Mormede, S (2016). Casal2: New Zealand's integrated population modelling tool. *Fisheries Research* 183: 498–505

Doonan, I.J., McGregor, V.L. and Holmes, S.J. (2024). Southern blue whiting (*Micromesistius australis*) stock assessment for the Campbell Island Rise for data up to the 2022–23 fishing year. New Zealand Fisheries Assessment Report 2024/37. 45 p.

Dunn, A. 2024 Harvest control rule evaluations for southern blue whiting (*Micromesistius australis*) on the Campell Island Rise for the 2023–24 fishing year. New Zealand Fisheries Assessment Report 2024/xx. xx p.

Dunn, A., Hanchet, S.M., and Dunford, A. (2015). Southern blue whiting (*Micromesistius australis*) stock assessment for the Bounty Platform up to and including the 2014 season. (Unpublished Final Research Report for Ministry of Fisheries Research Project DEE201002SBWD held by Fisheries New Zealand, Wellington.) 20 p.

FNZ (2021). Review of Sustainability Measures for Hoki (HOK 1) for 2021/22. Fisheries New Zealand Decision Paper. 20 p.

FNZ (2022). Review of Sustainability Measures for the 2022 October round. Fisheries New Zealand Decision Paper. 252 pp.

FNZ (2024a). Fisheries Assessment Plenary May 2024. Stock Assessments and Stock Status Vol. 3: Red gurnard to Yellow-eyed mullett. Southern blue whiting pp. 1677-1708.

FNZ (2024b). Review of Sustainability Measures for the 2024 April round. Fisheries New Zealand Decision Paper. 209 pp.

FNZ (2024c). Medium term research plan for deepwater fisheries 2024/25 – 2029/30. Fisheries Research Information Paper No 2024/03. 23 p.

FNZ (204d). Revoked Fisheries (Landing and Discard Exceptions) Notice - revoked 1 June 2024. February 2024. https://www.mpi.govt.nz/dmsdocument/61123-Revoked-Fisheries-Landing-and-Discard-Exceptions-Notice-2024-revoked-1-June-2024

FNZ (2025). Fisheries (Landing and Discard Exceptions) Notice https://www.mpi.govt.nz/dmsdocument/62170-Fisheries-Landing-and-Discard-Exceptions-Notice-2025

Fu, D., Hanchet, S. and O'Driscoll, R.L. (2013). Estimates of biomass and c.v.s of southern blue whiting from previous acoustic surveys from 1993 to 2012 using a new target strength – fish length relationship. (Unpublished Final Research Report for Ministry of Fisheries Research Project DEE201002SBWB held by Fisheries New Zealand, Wellington.) 52 p.

Hanchet, S.M. (1991) Southern blue whiting fishery assessment for the 1991–92 fishing year. New Zealand Fisheries Assessment Research Document 1991/7. 48 p.
Hanchet, S.M. (1998). Documentation of the separable Sequential Population Analysis used in the assessments of southern blue whiting, and a comparison with other models. New Zealand Fisheries Assessment Research Document 98/33. 22 p. (Unpublished report held by NIWA Library, Wellington.)
Hanchet, S.M. (1999) Stock structure of southern blue whiting (*Micromesistius australis*) in New Zealand waters. *New Zealand Journal of Marine and Freshwater Research* 33(4): 599–610.
Minister of Fisheries (2021). Changes to fisheries sustainability measures for the 2021 October Round. 17 p.
Minister of Fisheries (2022). Changes to fisheries sustainability measures for the 2022 October Round. 14 p.
Minister of Fisheries (2024). Changes to fisheries sustainability measures for the 2024 April Round. 8 p.
MPI (2008). Harvest Strategy Standard for New Zealand Fisheries. Ministry for Primary Industries. 25 p.
MPI (2011). Operational Guidelines for New Zealand's Harvest Strategy Standard (Revision 1). Ministry of Fisheries. June 2011. 80 p.
MPI (2013). Aquatic Environment and Biodiversity Annual Review 2013. Compiled by the Fisheries Management Science. Ministry for Primary Industries, Wellington, New Zealand. 538 p.
MPI (2025). Proposed amendments to the Fisheries Act: Consultation Document. Fisheries New Zealand Discussion Paper No: 2025/03. 71 p.
O'Driscoll, R.L. (2015). Acoustic biomass estimates of southern blue whiting on the Bounty Platform in 2014. New Zealand Fisheries Assessment Report 2015/02. 28 p
O'Driscoll, R.L. (2018). Acoustic biomass estimates of southern blue whiting on the Bounty Plateau in 2017. New Zealand Fisheries Assessment Report 2018/11. 28 p.
O'Driscoll, R.L. and Dunford, A.J. (2017). Acoustic biomass estimates of southern blue whiting on the Bounty Platform in 2015. New Zealand Fisheries Assessment Report 2017/19. 29 p.
O'Driscoll, R.L. and Ladroit, Y. (2017). Acoustic biomass estimates of southern blue whiting on the Bounty Platform in 2016. New Zealand Fisheries Assessment Report 2017/20. 24 p.
Punt, A.E., Butterworth, D.S., de Moor, C.L., De Oliveira, J.A.A. and M. Haddon. 2016. Management Strategy Evaluation: Best Practices. *Fish and Fisheries* 17: 303-334.
Roberts, J., and Dunn, A. (2017). Investigation of alternative model structures for the estimation of natural mortality in the Campbell Island Rise southern blue whiting (*Micromesistius australis*) stock assessment (SBW 6I). New Zealand Fisheries Assessment Report 2017/26. 14 p.
Roberts, J., and Hanchet, S.M. (2019). Southern blue whiting (*Micromesistius australis*) stock assessment for the Campbell Island Rise for 2017. New Zealand Fisheries Assessment Report 2019/44. 21 p.
Seafood New Zealand. 2025. Hoki, hake, ling southern blue whiting harvest control rules .URL.
Stevens, D.W., O'Driscoll, R.L., Dunn, M.R., MacGibbon, D., Horn, P.L., Gauthier, S. (2011) Trawl survey of hoki and middle depth species on the Chatham Rise, January 2010 (TAN1001). New Zealand Fisheries Assessment Report 2011/10. 112 p.
Wieczorek, A.M., Escobar-Flores, P.C., Datta, S., O'Driscoll, R.L., Hart, A., Barnes, T.Ó., Maolagáin, C., and Spong, K. (in prep). Acoustic biomass estimates of southern blue whiting on the Bounty Plateau (SBW 6B) in 2023. New Zealand Fisheries Assessment Report 20XX/XX.

Principle 2

In-Scope and ETP

Abraham, E.R., Neubauer, P., Berkenbusch, K. & Richard, Y. (2017). Assessment of the risk to New Zealand marine mammals from commercial fisheries. New Zealand Aquatic Environment and Biodiversity Report 189. [click here

Baker, B. & Hamilton (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.

https://deepwatergroup.org/wp-content/uploads/2013/09/Baker-Hamilton-2012-Assessment-of-the-impact-of-incidental-fisheries-mortality-on-the-Campbell-Island-NZSL-using-PBR.pdf

Baker, C.S.; Chilvers, B.L.; Childerhouse, S.; Constantine, R.; Currey, R.; Mattlin, R.; van Helden, A.; Hitchmough, R.; Rolfe, J. (2016) Conservation status of New Zealand marine mammals, 2013. New Zealand Threat Classification Series 14. Department of Conservation, Wellington. 18 p. https://www.doc.govt.nz/Documents/conservation/native-animals/marine-mammals/conservation-status-of-new-zealand-marine-mammals-2013.pdf

Baker, C.S., Boren, L., Childerhouse, S., Constantine, R., van Helden, A., Lundquist, D., Rayment W. & Rolfe,J.R. (2019). Conservation status of New Zealand marine mammals, 2019. New Zealand Threat Classification Series 29. 18 p. https://www.doc.govt.nz/globalassets/documents/science-and-technical/nztcs29entire.pdf

Cleal, J.; Clement, G., & Wells, R. (2009a). *Mitigating incidental captures of fur seals in trawl fisheries*. A report commissioned by Department of Conservation. Project MIT 2006/09. 45 p. Wellington, New Zealand: Department of Conservation.

Cleal, J.; Clement, G., & Wells, R. (2009b). *Mitigating seabird interactions with trawl nets.* Anreport commissioned by Department of Conservation. Project MIT 2006/02. 70 p. Wellington, New Zealand: Department of Conservation.

Cleal, J. (2019). Deepwater Group Environmental Liaison Officer (ELO) Report 2018-19. 10 p. [click here]

Cleal, J. (2020). Deepwater Group Environmental Liaison Officer (ELO) Report for the 2019-20 Fishing Year. 7 p. [click here]

Cleal, J. (2021). Deepwater Group Environmental Liaison Officer (ELO) Report for the 2020-21 Fishing Year. 7 p. [click here]

Cleal, J. (2022). Deepwater Group Environmental Liaison Officer (ELO) Report for the 2021-22 Fishing Year. 9 p [click here]

Cleal, J. (2023). Deepwater Group Environmental Liaison Officer (ELO) Report for the 2022-23 Fishing Year. [click here]

DOC & MPI (2017). New Zealand sea lion/rāpoka Threat Management Plan 2017 – 2022. 17 p. https://www.doc.govt.nz/globalassets/documents/conservation/native-animals/marine-mammals/nz-sea-lion-tmp/nz-sea-lion-threat-management-plan.pdf

DOC (2023). Conservation Services Programme Annual Plan 2023/24. https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/marine-conservation-services/plans-and-submissions/202324/final-csp-annual-plan-2023-24.pdf

DOC (2024). Conservation Services Programme DRAFT Annual Plan 2024/25. https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/marine-conservation-services/plans-and-submissions/202425/draft-csp-annual-plan-2024-25.pdf

Dragonfly Data Science (2024). Protected Species Captures. https://protectedspeciescaptures.nz/PSCv7/

DWG (2024). Operational Procedures. https://deepwatergroup.org/newsresources/op-manual/

Edwards, C.T.T., Peatman, T., Goad D. & Webber, D.N. (2023). Update to the risk assessment for New Zealand seabirds. New Zealand Aquatic Environment and Biodiversity Report No. 314. 66 p. [click here]

Edwards, C., Peatman, T., Goad, D. & Webber, D. (2023a). Fishery data inputs for the New Zealand Seabird Risk Assessment. New Zealand Aquatic Environment and Biodiversity Report No. 313. 117 p. https://www.mpi.govt.nz/dmsdocument/57274-AEBR-313-Fishery-data-inputs-for-the-New-Zealand-Seabird-Risk-Assessment

Edwards, C.T.T. and Mormede, S. (2023). Temporal and spatial distribution of nontarget catch and non-target catch species in deepwater fisheries. New Zealand Aquatic Environment and Biodiversity Report No. 303. 81 p. [click here]

Fisheries New Zealand Information Site. https://www.mpi.govt.nz/fishing-aquaculture/

Fisheries New Zealand (2019). National Fisheries Plan for Deepwater and Middle-depth Fisheries 2019. Fisheries New Zealand Technical Paper No: 2019/03. 34 p. https://www.mpi.govt.nz/dmsdocument/3967/direct

Fisheries New Zealand (2020) National Plan of Action – Seabirds 2020. Supporting Document. Available at: https://www.mpi.govt.nz/dmsdocument/40658-National-Plan-Of-Action-Seabirds-2020-supporting-document

Fisheries New Zealand (2020a). National Plan of Action – Seabirds 2020. Seabird Annual Report 2018/19. Fisheries New Zealand Information Paper No: 2020/08. 67 p. https://www.mpi.govt.nz/dmsdocument/42622-National-Plan-of-Action-Seabirds-2020-201819-report

Fisheries New Zealand (2021). National Plan of Action – Seabirds 2020. Seabird Annual Report 2019/20. Fisheries New Zealand Information Paper No: 2021/18. 88 p. https://www.mpi.govt.nz/dmsdocument/48088-National-Plan-of-Action-Seabirds-2020-Seabird-Annual-Report-201920

Fisheries New Zealand (2022) National Plan of Action – Sharks 2022. Draft for Consultation. Available at: https://www.mpi.govt.nz/dmsdocument/52438-Draft-National-Plan-of-Action-for-the-Conservation-and-Management-of-Sharks-2022

Fisheries New Zealand (2022a) National Plan of Action - Seabirds 2020 Seabird Annual Report 2020/21. Fisheries New Zealand Information Paper No: 2022/02 https://www.mpi.govt.nz/dmsdocument/52396/direct

FNZ (2023). National Plan of Action – Seabirds 2020. Seabird Annual Report 2021/22. Fisheries New Zealand Information Paper No: 2023/04. 104 p. https://www.mpi.govt.nz/dmsdocument/58780/direct

Fisheries New Zealand (2024) Medium term research plan for deepwater fisheries 2024/25 – 2029/30. Fisheries New Zealand Information Paper No: 2024/03. https://www.mpi.govt.nz/dmsdocument/21746-medium-term-research-plan-for-deepwater-fisheries-report

MacKenzie, D.I.; Fletcher, D.; Meyer, S.; Pavanato, H. (2022). Updated spatially explicit fisheries risk assessment for New Zealand marine mammal populations. New Zealand Aquatic Environment and Biodiversity Report No. 290. 218 p. https://openseas.org.nz/wp-content/uploads/2023/01/53239-AEBR-290-Updated-Risk-Assessment-For-New-Zealand-Marine-Mammals-4286.pdf

Richard, Y., Abraham, E. & Berkenbusch, K. (2017). Assessment of the risk of commercial fisheries to New Zealand seabirds, 2006–07 to 2014–15. New Zealand Aquatic Environment and Biodiversity Report 191. 104 p. https://docs.niwa.co.nz/library/public/NZAEBR-191.pdf

Richard, Y., Abraham, E. R. & Berkenbusch, K. (2020). Assessment of the risk of commercial fisheries to New Zealand seabirds, 2006–07 to 2016–17. New Zealand Aquatic Environment and Biodiversity Report No. 237. 57 p. https://www.mpi.govt.nz/dmsdocument/39407-aebr-237-assessment-of-the-risk-of-commercial-fisheries-to-new-zealand-seabirds-200607-to-201617

Roberts, J. 2017: Supplemental sea lion population modelling to support an updated Squid Trawl Fishery Operational Plan – draft report. Final research report. Ministry for Primary Industries, Wellington, New Zealand. 16 p.

Roberts, J. 2018: Unpublished submission to the NZTCS marine mammal assessment panel on New Zealand sea lion.

Robert and Doonan. 2016. Quantitative Risk Assessment of Threats to New Zealand Sea Lions. New Zealand Aquatic Environment and Biodiversity Report No. 166. https://www.mpi.govt.nz/dmsdocument/11665-aebr-166-quantitative-risk-assessment-of-threats-to-new-zealand-sea-lions

Robertson, Hugh., John Dowding, Graeme Elliott, Rod Hitchmough, Colin Miskelly, Colin O'Donnell, Ralph Powlesland, Paul Sagar, Paul Scofield, Graeme Taylor. (2013). *New Zealand Threat Classification Series 4.* 22 p. https://www.doc.govt.nz/globalassets/documents/science-and-technical/nztcs4entire.pdf

Robertson, Hugh, Karen Baird, John E. Dowding, Graeme P. Elliott, Rodney A. Hitchmough, Colin M. Miskelly, Nikki McArthur, Colin F.J. O'Donnell, Paul M. Sagar, R. Paul Scofield; Graeme A. Taylor. (2016). *New Zealand Threat Classification Series 19. 27* p. https://www.doc.govt.nz/globalassets/documents/science-and-technical/nztcs19entire.pdf

Robertson, Hugh, Karen A. Baird, Graeme P. Elliott, Rodney A. Hitchmough, Nikki J. McArthur, Troy Makan, Colin M. Miskelly, Colin. J. O'Donnell, Paul M. Sagar, R. Paul Scofield, Graeme A. Taylor and Pascale Michel. (2021) *New Zealand Threat Classification Series 36*. Department of Conservation, Wellington. 43 p. https://www.doc.govt.nz/globalassets/documents/science-and-technical/nztcs36entire.pdf

Sanders, B.M., and Fisher, D.O. 2023. Database documentation for the Ministry for Primary Industries Centralised Observer Database. NIWA Fisheries Data Management, Database Documentation Series. Revised Nov 2023. Available at: https://marlin.niwa.co.nz/files/dataHoldings/scientificResearchDbs/cod.pdf

Sharp, B.R. (2017) Spatially Explicit Fisheries Risk Assessment (SEFRA): A framework for quantifying and managing incidental commercial fisheries impacts on non-target species. Chapter 3 in: Aquatic Environment and Biodiversity Annual Review (AEBAR) 2017: A summary of environmental interactions between the seafood sector and the aquatic environment. Ministry for Primary Industries, New Zealand, 724 pp.

Seafood New Zealand, Deepwater Council. 2024. Hoki, hake and ling Trawl situation Report. Prepared for MSC reassessment 2024. Available at: https://deepwatergroup.org/wp-content/uploads/2024/09/Situation-Report-for-New-Zealand-Southern-Blue-Whiting-Trawl-Fisheries-2024-180924-v2.pdf

Habitats and Ecosystem

Anderson, O. Tracey, D., Bostock, H., Williams, M. and Clark, M. (2014). Refined habitat suitability modelling for protected coral species in the New Zealand EEZ. NIWA Client Report prepared for Department of Conservation, WLG2014-69. 46 p. https://deepwatergroup.org/wp-content/uploads/2021/08/Anderson-et-al-2014-Refined-habitat-suitability-modelling-for-protected-coral-species.pdf

Anderson, O., Mikaloff Fletcher, S. and Bostock, H. (2015). Development of models for predicting future distributions of protected coral species in the New Zealand Region. NIWA Client Report prepared for Department of Conservation. WLG2015-65. 28 p. https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/marine-conservation-services/reports/models-predicting-future-distributions-corals-nz-niwa-dec-2015.pdf

Anderson, O., Tracey, D. and Rowden, A. (2019). Habitat suitability modelling for Protected Corals in New Zealand Waters. Final methodology report, prepared for Conservation Services Programme, Dept. Conservation, April 2019. 20 p. https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/marine-conservation-services/reports/pop2018-01-finalmethods.pdf

Anderson, O., Schnabel, K., Bowden, D., Davey, N. & Hart, A. (2023). Identification of protected coral hotspots using species distribution modelling. Report prepared for Project POP2021-02, Conservation Services Programme, Department of Conservation. 63 p. Available at https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/marine-conservation-services/reports/202223-annual-plan/pop2021-02-protected-coral-hotspots-final-report.pdf

Clark MR, Bowden DA, Rowden AA and Stewart R (2019). Little Evidence of Benthic Community Resilience to Bottom Trawling on Seamounts After 15 Years. Front. Mar. Sci. 6:63. doi: 10.3389/fmars.2019.00063

Clark, M.R., Wood, B.A., Mackay, K., Anderson, O.F., Hart, A.C., Rickard, G. and Rowden, A.A., 2022. *Underwater Topographic Features in the New Zealand Region: Development of an Updated 'SEAMOUNT' Database and Information on the Extent and Intensity of Deep-sea Trawl Fisheries on Them*. Fisheries New Zealand, Ministry for Primary Industries.

Cummings, V., Lundquist, C., Dunn, M., Francis, M., Horn, P., Law, C., . . . Mielbrecht, E. (2021b). *Assessment of potential effects of climate-related changes in coastal and offshore waters on New Zealand's seafood sector.* Wellington: Fisheries New Zealand. Retrieved from https://fs.fish.govt.nz/Doc/24891/AEBR-261-Assessment-Of-Potential-Effects-Of-Climate-Change-On-Seafood-Sector-3389.pdf.ashx

DOC (2022). Aotearoa New Zealand Biodiversity Strategy, Implementation Plan. 52 p. https://www.doc.govt.nz/globalassets/documents/conservation/biodiversity/anzbs-implementation-plan-2022.pdf

FNZ, 2022c. Aquatic Environment and Biodiversity Annual Review 2021. Compiled by the Aquatic Environment Team, Fisheries Science and Information, Fisheries New Zealand, Wellington New Zealand. 779 p. https://www.mpi.govt.nz/dmsdocument/51472-Aquatic-Environment-and-Biodiversity-Annual-Review-AEBAR-2021-A-summary-of-environmental-interactions-between-the-seafood-sector-and-the-aquatic-environment

FNZ (2023a). Deepwater Annual Review Report 2021/22. Fisheries New Zealand Technical Paper No: 2023/01. https://deepwatergroup.org/wp-content/uploads/2023/10/DRAFT-ARR-2021-22.pdf

Hiddink, J. G., Jennings, S. J., Sciberras, M., Szostek, C. L., Hughes, K. M., Ellis, N., Rijnsdorp, A. D., McConnaughey, R. A., Mazor, T., Hilborn, R., Collie, J. S., Pitcher, C. R., Amoroso, R. O., Parma, A. M., Suuronen, P. & Kaiser, M. J. (2017). Global analysis of depletion and recovery of seabed biota after bottom trawling disturbance. PNAS, 114(21), 8301-8306. https://www.pnas.org/doi/pdf/10.1073/pnas.1618858114

Leathwick, J R; Rowden, A; Nodder, S; Gorman, R; Bardsley, S; Pinkerton, M; Baird, S J; Hadfield, M; Currie, K; Goh, A (2012) A Benthic–optimised Marine Environment Classification (BOMEC) for New Zealand waters. *New Zealand Aquatic Environment and Biodiversity Report No. 88*. 54 p.

MacGibbon, D.J.; Mules, R. (2023). Extent and intensity of bottom contact by commercial trawling and shellfish dredging in New Zealand waters, 1990–2021. New Zealand Aquatic Environment and Biodiversity Report No. 316. 174 p. https://fs.fish.govt.nz/Doc/25518/AEBR-316-Bottom-Contact-Of-Commercial-Trawl-And-Dredge-Fisheries-New-Zealand-1990-2021-4360-2023.pdf.ashx

McGregor, V., Horn, P., Fulton, E., & Dunn, M. (2019). From data compilation to model validation: a comprehensive analysis of a full deep-sea ecosystem model of the Chatham Rise. *Peer J*. https://peerj.com/articles/6517/#intro

McGregor, V., Fulton, E., & Dunn, M. (2020). Addressing initialisation uncertainty for end-to-end ecosystem models: application to the Chatham Rise Atlantis model. *Peer J*. https://peerj.com/articles/9254

MPI (2008). Harvest Strategy Standard for New Zealand Fisheries. Ministry for Primary Industries. 25 p.

Petersen, G; Stephenson, F; Brough, T; Rowden, A. (2020). Seafloor Community Classification: Group descriptions. (NIWA Client Report No. 2020230HN prepared for the Department of Conservation). 240 p. Available at: https://www.frontiersin.org/journals/marine-science/articles/10.3389/fmars.2021.792712/full#supplementary-material

Pinkerton, M.H. 2011. Hoki ecological risk assessment: ecosystem and food-web effects. NIWA unpublished report for Deepwater group.

Rowden, A.A.; Anderson, O.F.; Neubauer, P.; Hamill, J.; Bowden, D.A.; Tremblay-Boyer, L.; Charsley, A.; MacGibbon, D. (2024). Spatially explicit benthic impact assessments for bottom trawling in New Zealand. *New Zealand Aquatic*

Environment and Biodiversity Report No. 329. 118 p. https://fs.fish.govt.nz/Doc/25617/AEBR-329-Spatially-Explicit-Benthic-Impact-Assessment-For-Bottom-Trawling-4430-2024.pdf.ashx

Snelder, T H; Leathwick, J R; Dey, K L; Weatherhead, M A; Fenwick, G D; Francis, M P; Gorman, R M; Grieve, J M; Hadfield, M G; Hewitt, J E; Hume, T; Richardson, K M; Rowden, A A; Uddstrom, M J; Wild, M; Zeldis, J R (2005) The New Zealand Marine Environment Classification. Ministry for the Environment, Wellington.

Stephenson, F., Rowden, A.A., Brough, T., Petersen, G., Bulmer, R.H., Leathwick, J.R., Lohrer, A.M., Ellis, J.I., Bowden, D.A., Geange, S.W. and Funnell, G.A., 2022. Development of a seafloor community classification for the New Zealand region using a gradient forest approach. *Frontiers in Marine Science*, *8*, p.792712.

Tuck, I., Cole, R. & J. Devine 2009. Ecosystem indicators for New Zealand fisheries. New Zealand Aquatic Environment and Biodiversity Report No. 42. 188 pp.

Tuck, I.D., Pinkerton, M.H., Tracey, D.M., Anderson, O.A. & S.M. Chiswell 2014. Ecosystem and environmental indicators for deepwater fisheries. New Zealand Aquatic Environment and Biodiversity Report No. 127. 143 pp.

Watling, L. and Auster, P.J., 2021. Vulnerable marine ecosystems, communities, and indicator species: confusing concepts for conservation of seamounts. *Frontiers in Marine Science*, *8*, p.622586.

Principle 3

Acoura (2018) NZ Hoki, hake and ling trawl fisheries. MSC Public Certification report. https://cert.msc.org/FileLoader/FileLinkDownload.asmx/GetFile?encryptedKey=/KBzlG0n9b0AUcqDq86/SvvYukcDSRgvFqYhTp3/XNKdAnTxoNdeWNfs6Hvu2N4A

DWG (2018a) Deepwater Trawl - Reporting Operational Procedures Version 3.0 https://deepwatergroup.org/wp-content/uploads/2018/10/Reporting-OP-Version-3.pdf

DWG (2021). Operational Procedures. https://deepwatergroup.org/newsresources/op-manual/

DWG (2022) Deepwater Trawl Benthic Operational Procedures 2022-23 https://deepwatergroup.org/wp-content/uploads/2022/09/Benthic-OP-version-2022-23.pdf

DWG (2023) Ling Bottom Longline LIN 2 - 7 Operational Procedures Version 4.0 https://deepwatergroup.org/wp-content/uploads/2023/03/BLL-OP-V4.0-Feb-2023.pdf

FNZ (2019) National Fisheries Plan for Deepwater and Middle-depth Fisheries 2019. Fisheries New Zealand Technical Paper No: 2019/03. ISBN No: 978-1-77665-816-9 (online) https://www.mpi.govt.nz/dmsdocument/3967-National-Fisheries-Plan-for-Deepwater-and-Middle-depth-Fisheries-2019

FNZ (2021) Medium Term Research Plan for Deepwater Fisheries 2021/22 – 2025/26 Fisheries New Zealand Information Paper No: 2021/16 ISBN No: 978-1-99-100999-9 (online). https://www.mpi.govt.nz/dmsdocument/21746-Medium-Term-Research-Plan-for-Deepwater-Fisheries-Report

FNZ (2022) Annual Operational Plan for Deepwater Fisheries 2022/23. Fisheries New Zealand Technical Paper No: 2022/01. ISBN No: 978-1-99-102697-2 (online) https://www.mpi.govt.nz/dmsdocument/51892-Annual-Operational-Plan-for-Deepwater-Fisheries-202223

FNZ (2022b) Annual Review Report for Deepwater Fisheries 2020/21 Fisheries New Zealand Technical Paper No: 2022/02. ISBN No: 978-1-99-103941-5 (online) https://www.mpi.govt.nz/dmsdocument/51895/direct

FNZ (2022c) National Plan of Action - Seabirds 2020 Seabird Annual Report 2020/21. Fisheries New Zealand Information Paper No: 2022/02 https://www.mpi.govt.nz/dmsdocument/52396/direct

FNZ (2022d) National Plan of Action – Sharks 2022. Draft for Consultation. Available at: https://www.mpi.govt.nz/dmsdocument/52438-Draft-National-Plan-of-Action-for-the-Conservation-and-Management-of-Sharks-2022

FNZ (2022e) Summary of proposed amendments to fisheries regulations https://www.mpi.govt.nz/dmsdocument/49297/direct

Fisheries New Zealand (2024) Medium term research plan for deepwater fisheries 2024/25 – 2029/30. Fisheries New Zealand Information Paper No: 2024/03. https://www.mpi.govt.nz/dmsdocument/21746-medium-term-research-plan-for-deepwater-fisheries-report

IQANZ (2018). Deepwater Fisheries Management Independent Quality Assurance Review Report. Prepared for Ministry for Primary Industries by Independent Quality Assurance New Zealand (IQANZ). 13 p. https://www.mpi.govt.nz/dmsdocument/27609-Ministry-for-Primary-Industries-Deepwater-Fisheries-Management-Independent-Quality-Assurance-review-report-31-January-2018-signed

MFish (2011). Research and Science Information Standard for New Zealand Fisheries. Ministry of Fisheries, April 2011. 31 p. https://fs.fish.govt.nz/NR/rdonlyres/D1158D67-505F-4B9D-9A87-13E5DE0A3ABC/0/ResearchandScienceInformationStandard2011.pd

MPI (2010). Memorandum of Understanding: Continuing a partnership between the Ministry of Fisheries and the deepwater fishing industry for the management of New Zealand's deepwater fisheries. 12 p. https://www.mpi.govt.nz/dmsdocument/19715-memorandum-of-understanding-2010

MPI (2010a). Hoki Fisheries Plan Chapter: National Fisheries Plan for Deepwater and Middle-depth Fisheries Part 1B. 51 p. https://www.mpi.govt.nz/dmsdocument/3974-national-fisheries-plan-for-deepwater-and-middle-depth-fisheries-part-1b-hoki-fishery-chapter

MPI (2011). Ling Fisheries Plan Chapter: National Fisheries Plan for Deepwater and Middle-depth Fisheries Part 1B. 50 p. https://www.mpi.govt.nz/dmsdocument/3973-national-fisheries-plan-for-deepwater-and-middle-depth-fisheries-part-1b-ling-chapter

MPI (2013). Hake Fisheries Plan Chapter: National Fisheries Plan for Deepwater and Middle-depth Fisheries Part 1B. 29 p. https://www.mpi.govt.nz/dmsdocument/3972-national-fisheries-plan-for-deepwater-and-middle-depth-fisheries-part-1b-hake-chapter

MPI (2020). Risk Management and Compliance HOK and SBW. Ministry for Primary Industries memo to deepwater operators, June 2020. 2 p. https://deepwatergroup.org/wp-content/uploads/2021/04/MPI-2020-Risk-Management-and-Compliance-HOK-and-SBW-Memo.pdf

MPI (2023). Risk Management and Compliance for the Hoki & and SBW Fisheries. Ministry for Primary Industries memo to deepwater operators, June 2023. 2 p. https://deepwatergroup.org/wp-content/uploads/2024/09/Risk-mgmt-and-compliance-HOKI-and-SBW-memo-2023.pdf

MRAG Americas (2022) NZ Orange Roughy Public Certification report. https://cert.msc.org/FileLoader/FileLinkDownload.asmx/GetFile?encryptedKey=CyOw/rNlUhSYSDao/k9Fwvu6FPqmuNYug1N5/QQ0RVdRa0ghmUOyOD7/xNPs96QD

Seafood NZ, Deepwater Council. (2024.) Hoki, hake and ling Trawl situation Report. Prepared for MSC reassessment 2024. Available at: https://deepwatergroup.org/wp-content/uploads/2024/09/Situation-Report-HHL-Trawl-2024-180924-v2.pdf

12. Template information and copyright

The CAB shall delete the table below:

Table 56: Template version control

Version	Date of publication	Description of amendment
1.0	17 December 2018	Date of first release
1.1	29 March 2019	Minor document changes for usability
1.2	25 March 2020	Release alongside Fisheries Certification Process v2.2
2.0	26 October 2022	Release alongside Fisheries Certification Process v3.0
2.1	22 July 2024	Updated for release of Fisheries Certification Process v3.1

A controlled document list of MSC program documents is available on the MSC website (https://www.msc.org/for-business/certification-bodies/supporting-documents).

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