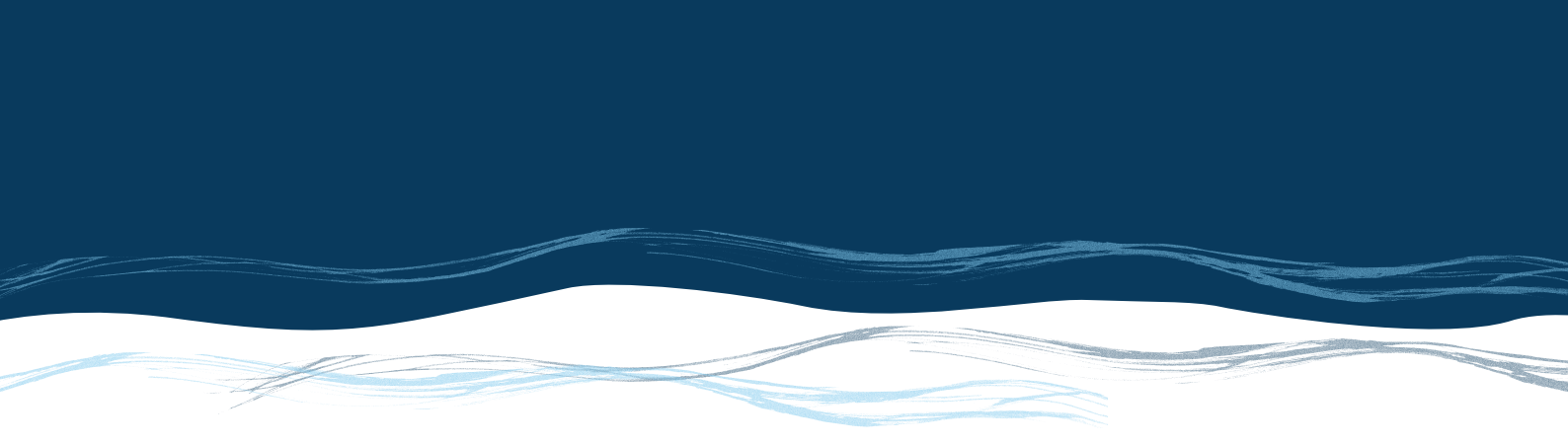




Conservation Services Programme Annual Plan 2026/27



Department of
Conservation
Te Papa Atawhai

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Conservation Services Programme
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New Zealand Government

Statement on Conservation Services

Conservation services are defined in section 2 of the Fisheries Act 1996 as follows:

“Conservation services means outputs produced in relation to the adverse effects of commercial fishing on protected species, as agreed between the Minister responsible for the administration of the Conservation Act 1987 and the Director-General of the Department of Conservation, including—

- (a) Research relating to those effects on protected species:*
- (b) Research on measures to mitigate the adverse effects of commercial fishing on protected species:*
- (c) The development of population management plans under the Wildlife Act 1953 and the Marine Mammals Protection Act 1978.”*

We agree that the outputs described in the following pages, to be delivered in 2024/25, are “conservation services” in accordance with this definition. Cost recovery principles have been applied in accordance with section 262 of the Fisheries Act 1996.



Hon. Tama Potaka

Minister of Conservation



Stephanie Rowe

Deputy Director-General Biodiversity Heritage and Visitors

Department of Conservation

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Conservation Services Programme Overview

Background

New Zealand is a maritime nation with the fourth largest exclusive economic zone (EEZ) in the world. Our waters provide for important commercial, recreational and customary fishing resources. They are also the home of many protected species including:

- All marine mammals
- All seabirds (except black backed gulls)
- All marine reptiles
- Nine fish (deepwater nurse shark, white pointer shark, whale shark, basking shark, oceanic white-tip shark, manta ray, spine-tail devil ray, giant grouper and spotted black grouper)
- Black corals (all species in the order Antipatharia)
- Gorgonian corals (all species in the order Gorgonacea)
- Stony corals (all species in the order Scleractinia)
- Hydrocorals (all species in the family Stylasteridae)

Marine protected species can be threatened by commercial fishing via both direct and indirect impacts:

- Direct impacts include being caught, injured, or killed in nets or on hooks. Benthic species may also be impacted by bottom trawlers and other fishing methods operating on or near the seabed.
- Indirect impacts such as habitat modification, food competition and behaviour modification of protected species may also occur. These impacts may compromise the viability or recovery of protected species populations.

The Department of Conservation has a statutory duty to protect the above species as defined in the Wildlife Act 1953 and the Marine Mammals Protection Act 1978.

What is the Conservation Services Programme?

DOC's primary mechanism for reducing fisheries bycatch is through the Conservation Services Programme (CSP). It is a programme of work that focuses on understanding and reducing adverse effects of commercial fishing on protected marine species.

DOC uses the CSP to deliver "conservation services", defined in the Fisheries Act 1996 as being outputs produced in relation to the adverse effects of commercial fishing on protected species, as agreed between the Minister responsible for administering the Conservation Act 1987 and the Director-General of the Department of Conservation, including:

- Research relating to those effects on protected species.
- Research on measures to mitigate the adverse effects of commercial fishing on protected species.

- The development of population management plans under the Wildlife Act 1953 and the Marine Mammals Protection Act 1978.

CSP research is funded by a combination of levies paid for by the commercial fishing industry and Crown funding. Conservation Services Levies are:

- Approved by the Minister of Conservation
- Collected by the Ministry for Primary Industries
- Set annually following consultation between relevant government agencies and stakeholder groups.

It is a fundamental principle of the CSP that once a bycatch problem is successfully addressed, levies will no longer be charged for that interaction. The CSP relies, in part, on data collected by fisheries observers and onboard cameras to ascertain the adverse effects of commercial fishing on protected species. It is, therefore, in the best interests of fishers to collaborate with researchers, especially in the development of mitigation measures.

What has CSP achieved to date?

The CSP provides a rare example in the global fishing industry of a transparent and accountable process where industry is legally required to contribute to the costs of research relating to its environmental impacts.

Conservation services levies have funded many initiatives, such as:

- The development of several promising mitigation devices and practices, including offal and discharge management, improved tori lines and bird bafflers, and the development of haul mitigation devices.
- The trial and implementation of novel mitigation devices with overseas partners, including sliding branch line weights and hook-shielding devices.
- The protected species liaison programme.
- The development of management measures that aim to contribute to reducing current rates of bycatch of protected species.
- Updates to handling and release practices which have contributed to the increase in post-release survival of protected species (e.g. spine-tail devil rays).
- A major shift in awareness and mitigation implementation to address priority bycatch issues such as black petrel bycatch in small vessels in the longline and trawl fisheries. Fishing companies have been involved with DOC in exploring several research avenues and some companies have trialled devices in their fishing operations at considerable expense to themselves

Some fishing companies have also developed and trialled their own ideas for mitigation measures. The most successful of these involved modifications to fishing practices e.g., hauling methods and offal discharge. Similar cooperative and innovative approaches have been seen in some fisheries where marine mammals have been caught in significant numbers, for example the use of sea lion exclusion devices (SLEDs) in the subantarctic squid fishery.

The introduction of levy-funded projects and independent actions of fishing companies have resolved many interactions between commercial fisheries and marine protected species. The New Zealand Government is far better informed of these problems due to increased observer coverage funded through Conservation Services Levies and the recent introduction of onboard cameras in the inshore fleet. Finally, all those who currently pay these levies have a strong financial incentive to reduce interactions with protected species and thus negate the need for levies to be paid.

Planning and Development of the 2026/27 CSP Annual Plan

CSP Planning process

[The CSP Strategic Statement](#) outlines stakeholder processes used to plan and prioritise research for delivery through CSP. It provides detail on the wider management context, the research planning and prioritisation processes used by CSP, and the way CSP is implemented through collaboration with others.

Since late 2023, CSP has shifted from being driven by the four main protected species groups to a solutions/outcomes focus for determining priority areas for focusing research. This is shaped primarily by taxon specific Medium Term Research Plans, current issues and emerging risks in New Zealand commercial fisheries, and feedback and engagement with other government agencies, industry, and NGOs. The 2026/27 priority areas for CSP are below (Table 1.)

Table 1. 2026/27 CSP Research Priorities

	SURFACE LONGLINE –multi-taxa bycatch, limited data
	LARGE VESSEL TRAWL – ongoing multi-taxa bycatch, irreversible impacts
	SUBANTARCTIC – home to multiple protected species, data gaps
	CAMERAS / INSHORE DATA – new information, data gaps
	MITIGATION GAPS = CONSERVATION GAINS – improving outcomes

The CSP planning process considers and works in parallel with other relevant planning and management processes such as the National Plans of Action (NPOAs) for seabirds,¹ and sharks,² Threat Management Plans (TMPs) for Hector's and Māui dolphin,³ and the New Zealand sea lion,⁴ and Te Kaweka Takohaka mō te Hoiho.⁵ The iterative and inclusive planning process ensures that gaps are identified, and research synergies are maximised.

¹ [National Plan of Action - Seabirds](#)

² [National Plan of Action - Sharks \(under review in 2026\)](#)

³ [Hector's and Māui Threat Management Plan](#)

⁴ [New Zealand sea lion Threat Management Plan \(under review in 2026\)](#)

⁵ [Te Kaweka Takohaka mō te Hoiho](#)

A key component of the planning process is targeted consultation with representatives from commercial fishing and environmental groups, scientists, and iwi. This approach delivers a collaborative, multi-stakeholder process for research planning and prioritisation.

Observer Planning

MPI and DOC work together to plan and prioritise observer coverage 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. These objectives are balanced with other fisheries management objectives, available resources of the observer programme, and feasibility of delivery.

Coverage is aimed at reducing uncertainty around the risks to protected species as well as assessing mitigation options for identified interactions. Furthermore, the allocation of observer coverage across fisheries is also guided by several factors, including data needs for protected species and fisheries management, compliance, and international obligations.

Fisheries New Zealand (FNZ), a branch of MPI, lead the rollout of cameras on commercial fishing vessels. The rollout is currently complete and there are around 220 vessels currently operating cameras. As a result, inshore observer coverage has reduced significantly, however, observers may continue to be used where information cannot be provided by electronic monitoring at this stage. Inter-agency collaboration has determined in which circumstances observers are to be deployed on vessels with cameras.

There is a supplementary process for monitoring and verification planning to reflect the reduced observer placement and compensate for at-sea resourcing; more details can be found under INT2025-02 Port-based bag and tag. However, at-sea observers can/may still be used:

- As part of a vessel-specific monitoring plan,
- Where information cannot be provided by onboard cameras (e.g., where cameras are not suitable and scientific information is required for stock assessments, assessments of the impacts of fisheries, fisheries research, and broader ecosystem research),
- Where required to meet international obligations, and
- To support monitoring and evaluation of the efficacy of the on-board programme.

The process for determining observer priorities and observer days changed in 2025. DOC provides the data needs that are currently unable to be collected by onboard cameras, and FNZ plans observer coverage accordingly. The observer programme will not be cost recovered under CSP and will be fully funded by MPI.

Overview of the CSP Annual Plan 2026/27

The Conservation Services Programme Annual Plan for 2026/27 (Appendix 1, hereafter referred to as “the Plan”) will deliver priority research to inform management of the effects of commercial fishing on marine protected species.

The Plan proposes work in three key areas: Interaction, Population and Mitigation.

The format used to outline Conservation Services in this Plan includes an outline of the objectives and rationale for each project and the anticipated outputs. Guiding objectives, both CSP Objectives and relevant management

plans, are identified for each project. The project specifications also include cost recovery information, e.g., indicative project costs (excluding administration costs), relevant provisions within the Fisheries (Cost Recovery) Rules 2001 that determine cost recovery allocation, the rationale for the cost recovery, and relevant fish stocks to which cost recovery is applied.

Finances

CSP research is funded by a combination of commercial fishing levies and Crown funding. All species mentioned in this plan are protected and have been recorded as non-targeted species incidentally captured by commercial fishing. As such, the CSP Annual Plan 2026/27 reflects the research required to be carried out in the interests of the effective management of those species, in accordance with section 262 of the Fisheries Act (1996) (cost recovery principles) and the Fisheries (Cost Recovery) Rules 2001. To support transparency and compliance with the cost recovery provisions, the cost recovery section of each project in this Plan has been expanded to clearly justify how each project aligns with the rules outlined in Schedule 2 of the Fisheries (Cost Recovery) Rules (Apportionment of costs of fisheries and conservation services).

The Fisheries and Conservation Services levies are set annually to recover the cost of services provided by FNZ to the fishing industry. MPI seeks to keep service costs as low as possible, while continuing to provide for the sustainable utilisation of fisheries.

The CSP levy for 2026/27 is \$1.4 million, unchanged from 2025/26. DOC is mindful of cost burden on the fishing industry and has made deliberate efforts to keep the overall cost of the Plan as low as possible, while balancing conservation priorities.

Appendix 1: CSP 2026/27 Project Costs

Code	Project	Research	Admin	Total	CR Item	Industry %	Industry	Crown
Interaction Projects								
INT2025-03	Identification of seabirds captured in New Zealand fisheries	\$100,000	\$16,452	\$116,452	4	100	\$116,452	\$0
INT2025-04	Identification, storage and genetics of cold-water coral bycatch specimens	\$90,000	\$14,807	\$104,807	4B	100	\$104,807	\$0
INT2025-05	Port-based bag and tag	\$80,000	\$13,162	\$93,162	4	100	\$93,162	\$0
INT2025-07	Examining recruitment dynamics and recovery potential from fishing-induced adverse impacts on deep-sea corals on Chatham Rise seamounts	\$48,500	\$7,979	\$56,479	4B	100	\$56,479	\$0
INT2026-01	Observing commercial fisheries	MPI funded						
INT2026-02	Identification of marine mammals, turtles & protected fish captured in New Zealand fisheries	\$15,000	\$2,468	\$17,468	4	100	\$17,468	\$0
Population Projects								
POP2025-01	Southern Buller's albatross juvenile banding and tracking	\$50,000	\$8,226	\$58,226	Crown funded		\$0	\$58,226
POP2025-02	Black Petrel and flesh-footed shearwater demographic modelling	\$40,000	\$6,581	\$46,581	3	50	\$23,290	\$23,290
POP2025-03	Black petrel monitoring	\$35,000	\$5,758	\$40,758	3	50	\$20,379	\$20,379
POP2025-04	Auckland Islands seabird research: Gibson's and white-capped albatross	\$160,000	\$26,323	\$186,323	Crown funded		\$0	\$186,323
POP2025-07	Chatham albatross research	\$30,000	\$4,936	\$34,936	3	50	\$17,468	\$17,468
POP2025-08	Antipodean albatross and white-chinned petrel research	\$120,000	\$19,742	\$139,742	Crown funded		\$0	\$139,742
POP2025-09	Campbell Island seabird research	\$150,000	\$24,678	\$174,678			\$0	\$174,678
POP2025-10	Population growth, distribution and demographics of New Zealand sea lions inhabiting northern Stewart Island	\$20,000	\$3,290	\$23,290	3	50	\$11,645	\$11,645
POP2026-01	Southern Buller's population study	\$65,000	\$10,694	\$75,694	3	50	\$37,847	\$37,847
POP2026-02	New Zealand sea lion Auckland Island pup count	\$150,000	\$24,678	\$174,678	2	90	\$157,210	\$17,468

Code	Project	Research	Admin	Total	CR Item	Industry %	Industry	Crown
POP2026-03	Westland petrel population estimate	\$20,000	\$3,290	\$23,290	3	50	\$11,645	\$11,645
POP2026-04	Salvin's albatross Western Chain re-survey and tracking	\$70,000	\$11,516	\$81,516	3	50	\$40,758	\$40,758
Mitigation Projects								
MIT2024-01	Protected Species Liaison Programme	\$250,000	\$41,130	\$291,130	4	100	\$291,130	\$0
MIT2025-01	Improving mitigation data streams to assess bycatch mitigation effectiveness in inshore and HMS fisheries	\$30,000	\$4,936	\$34,936	4	100	\$34,936	\$0
MIT2025-02	Seabird SMART Workshops	\$20,000	\$3,290	\$23,290	4	100	\$23,290	\$0
MIT2025-04	Supporting uptake of sink rate assessment by fishers in bottom longline fisheries	\$40,000	\$6,581	\$46,581	4	100	\$46,581	\$0
MIT2026-01	Developing a robust management tool to reduce risk of sea turtle bycatch	\$60,000	\$9,871	\$69,871	4	100	\$69,871	\$0
MIT2026-02	Facilitating the uptake of setting mitigation in SLL	\$100,000	\$16,452	\$116,452	4	100	\$116,452	\$0
MIT2026-03	Acoustic-based bycatch mitigation device advancement	\$50,000	\$8,226	\$58,226	4	100	\$58,226	\$0
MIT2026-04	Investigating low-powered lasers as an option for seabird bycatch mitigation	\$30,000	\$4,936	\$34,936	4	100	\$34,936	\$0
TOTAL		\$1,823,500	\$300,000	\$2,123,500			\$1,384,031	\$739,469

Appendix 2: CSP Annual Plan 2026/27 Projects

1 Interaction Projects

NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

1.1. INT2025-03 Identification of seabirds captured in New Zealand fisheries

Start Date: 1 July 2025

Completion Date: 30 June 2028

Guiding Objectives: CSP Objectives B, C; National Plan of Action – Seabirds.

Project Objectives:

1. To determine, through examination of returned specimens, the taxon (including subspecies where applicable), sex, and where possible, age-class and provenance of seabirds captured in fisheries (for returned dead specimens).
2. To detail the injuries, body condition and stomach contents and, where possible, the likely cause of mortality (for returned dead specimens).
3. To report any changes in the protocol used for the necropsy of seabirds (for returned dead specimens).
4. To determine, through examination of photographs, the taxon (including subspecies where applicable), and where possible sex, age-class and provenance of seabirds captured in fisheries (for live captures or returned dead specimens or those discarded at sea).
5. To determine, through DNA analysis, the taxon (including subspecies where applicable) of seabirds captured in fisheries (dead specimens discarded at sea).

Rationale:

Large numbers of seabirds frequent New Zealand waters. Birds with significant differences in conservation status can appear morphologically similar. The accurate determination of the taxon of seabirds captured in New Zealand fisheries is vital for examining the potential threat to population viability posed by incidental fisheries captures. Seabirds are not always able to be identified at sea or through onboard cameras, with high precision and the assessment of the age-class, sex and provenance of captured individuals requires autopsy and/or genetic analysis in the majority of cases.

Historically, all dead seabird specimens collected by observers have been returned for necropsy where possible. However, in many cases the taxon can be confirmed through expert examination of photographs taken by observers, and this can be achieved at a lower cost than returning carcasses and performing necropsy. To maximise cost efficiencies, a protocol is in place to determine which specimens are returned for full necropsy. This protocol aims to strike a balance between returning birds for full necropsy (for rarer species and in less observed fisheries) and photographing birds for determination of taxon (for commonly caught species in well observed fisheries).

Examining the causes of mortality and types of injuries incurred by individual seabirds returned from fisheries is necessary to help reduce future seabird captures in New Zealand fisheries by identifying gear risks. Linking this

information to species, age- and sex- class, and breeding status, helps identify if different groups of seabirds are vulnerable to different risks in fishing interactions.

This project will also develop proof of concept and pilot a new protocol for genetic determination of species identification through DNA analysis of feather samples collected from bycaught seabird carcasses.

Information gained through this project will link to Fisheries NZ databases, seabird bycatch estimates, and will inform ongoing risk assessment, research and modelling of the effects of fisheries bycatch on seabird populations. Further, the mode of capture and associated information will enable robust analyses to be made of the factors contributing to seabird capture events and inform the development of appropriate mitigation strategies.

Research Approach:

Specific objectives 1-3

Deceased birds returned by Fisheries Observers and fishers will be delivered, suitably packaged and labelled to the research provider. Observers and fishers make note of the circumstances of capture and provide a tentative identification. Seabirds returned will be examined to determine the following:

- Species identification and classification
- Sex
- Moults and brood patch development (as a partial indicator of breeding status)
- Age
- Provenance (origin) (where possible)
- Subcutaneous fat score as an index of body condition
- Stomach and gizzard contents, and
- General body condition including any signs of injury and cause of death (where possible).

The data will be reported on by species and fishery stratum (fishing method, fishery area and target species). The methodologies used in examining the specimens and categorising them into different groups shall be fully described. Differences in research protocols compared to previous necropsy research on New Zealand seabirds returned from fisheries shall be fully detailed and the implications of any differences discussed.

Specific objective 4

Where Fisheries Observers record an incidental bird capture and no specimen is retained (either live captures or discarded dead birds), all photographs obtained, by specimen, will be delivered to the contractor in electronic format. Details of the date, time, location, and fishery of capture will also be provided. Photographs will be examined to determine the following:

- Identification and classification, to the lowest taxonomic level possible
- Sex (where possible)
- Age (where possible), and
- Provenance (origin) (where possible).

These data will be reported by taxon and fishery stratum (fishing method, fishery area and target species). When a specimen is identified and separated from similar species, the identification features used shall be fully described.

Specific objective 5

Based on the genetic markers developed by Foote (2024) a proof-of-concept testing protocol will be developed in Year 1. This protocol will enable genetic determination of species identification through DNA analysis of feather samples collected from bycaught seabird carcasses. Subject to satisfactory progress in year 1, this protocol will be piloted for routine monitoring of feather samples during years 2 and 3.

Outputs:

1. A technical report summarising the confirmed identification, sex, age and provenance and other data collected for all returned specimens and photographs examined. Data will be reported by fishery stratum (fishing method, fishery area and where possible, target species).
2. A technical report summarising the work undertaken and results found from DNA testing of feather samples collected from bycaught seabirds.

Indicative Research Cost: \$100,000 per annum

Cost Recovery: F(CR) Item 4 (100% Industry)

Cost Recovery Rationale:

In order to manage, and prioritise (e.g. through risk assessments), the implementation of measures to reduce bycatch it is important to understand what species are being bycaught. There is extensive investment in wider fisheries monitoring of protected species bycatch, but at sea-monitoring (observers or cameras) cannot always determine to species level which protected species is bycaught. This project provides expert support to ensure the most accurate level of identification for seabird species bycaught and supports a range of cross agency activity to reduce bycatch. Accurate species-level identification enables robust data collection and analysis, which in turn informs the development of targeted mitigation strategies, such as changes to fishing gear, practices, or spatial/temporal closures. By improving the understanding of which species are impacted and how, this work directly contributes to avoiding, remedying, or mitigating the adverse effects of commercial fishing on protected marine species.

Fish stocks: BAR1, BAR4, BAR5, BAR7, BIG1, BNS1, BNS2, BNS3, BNS7, BUT5, BYX2, BYX3, ELE3, ELE5, ELE7, EMA3, EMA7, FLA1, FLA2, FLA3, FLA7, GSH1, GSH3, GSH4, GSH7, GSH8, GSH9, GSP1, GSP7, GUR1, GUR2, GUR3, GUR7, GUR8, HAK1, HAK4, HAK7, HOK1, HPB1, HPB2, HPB3, HPB4, HPB7, HPB8, JDO1, JDO2, JDO3, JDO7, JMA1, JMA3, JMA7, KIN1, KIN7, KIN8, LEA1, LEA2, LEA3, LIN1, LIN2, LIN3, LIN4, LIN5, LIN6, LIN7, MAK1, MOK1, MOK3, MOK5, ORH1, ORH2A, ORH2B, ORH3A, ORH3B, OEO1, OEO3A, OEO4, OEO6, RCO1, RCO3, RCO7, RSN1, RSN2, RIB1, RIB2, RSK1, RSK3, RSK7, RSK8, SBW6A, SBW6R, SBW6I, SBW6B, SCH1, SCH2, SCH3, SCH4, SCH5, SCH7, SCI1, SCI2, SCI4A, SCI6A, SCI6B, SKI1, SKI3, SKI7, SNA1, SNA2, SNA3, SNA7, SNA8, SPD1, SPD3, SPD4, SPD5, SPD7, SPD8, SPE1, SPE3, SPE4, SPE7, SPO1, SPO3, SPO7, SPO8, SQU1T, SQU6T, SSK1, SSK3, SSK7, SSK8, STA1, STA3, STA4, STA5, STA7, STN1, SWA1, SWA3, SWA4, SWO1, TAR1, TAR2, TAR3, TAR4, TAR5, TAR7, TAR8, TOR1, TRE1, TRE2, TRE7, TRU3, TRU4, WAR1, WAR2, WAR3, WAR7, WAR8, WWA2, WWA3, WWA4, WWA5B, WWA7, YEM8, YEM9

Reference:

Foote, I. 2024. Population genomics of Antipodean and Gibson's albatross and use of genetic markers for threatened seabird species identification. Open Access Te Herenga Waka-Victoria University of Wellington. Thesis. <https://doi.org/10.26686/wgtn.27688116>

NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

1.2. INT2025-04 Identification, storage and genetics of cold-water coral bycatch specimens

Start Date: 1 July 2025

Completion Date: 30 June 2028

Guiding Objectives: CSP Objectives B, C, E; CSP Coral Medium Term Research Plan

Project Objectives:

1. To confirm or update bycaught coral identifications determined at sea by Fisheries Observers and fishers to the lowest taxonomic level (i.e., to assign codes to coral specimens at the species level wherever possible, or to genus or family level if not possible).
2. To record all identified coral specimens and their metadata (including haplotype/genetic data) and ensure storage of the physical specimens in an appropriate taxonomic collection.
3. To update relevant government coral identification and observer databases.
4. To update and provide input into coral-relevant resources for Fisheries Observers, including reference material and observer training.
5. To improve the accuracy of protected coral identifications in FNZ's Central Observer Database (COD) and thereby their use in a range of projects that use this data (e.g., habitat suitability mapping, bycatch assessments etc.)

Rationale:

The 2010 amendment to Schedule 7A of the Wildlife Act 1953 protects all hard corals, including: black corals (all species in the order Antipatharia); gorgonian corals (all species in the order Alcyonacea (previously known as Order Gorgonacea)); stony corals (all species in the order Scleractinia); and hydrocorals (all species in the family Stylasteridae). Identifying coral bycatch that is unable to be identified by government Fisheries Observers and fishers to the finest taxonomic level provides vital baseline information that can help to better inform research and marine protection such as predictive modelling, benthic risk assessments and management of benthic marine protected species. This project will improve the ability of observers to identify protected corals and so improve the quality of data collected. Observer briefings can continue and be formalised, and Observers can be informed about how the research data are used. This will improve their skills at identifying and collecting samples and bycatch data. Specialists can then confirm identifications to help understand distributions at a more detailed taxonomic level.

This project would also examine the specimens listed in FNZ's COD under the GOC coral code, which could now be updated considering there are preferred identification codes available. A small number of identified records are still coded with 'GOC', the generic high-level code for gorgonian corals in the orders Scleralcyonacea and Malacalcyonacea.

Research Approach:

A catalogue of observer and fisher-collected coral samples will be created and maintained. These samples will be verified taxonomically by domestic experts at regular intervals throughout the year. In addition to this (when possible and as needed), international coral experts will refine the taxonomic identification even further. The

updated taxonomic identification of the bycatch samples will then be shared with FNZ for them to update this information in the COD database. In addition to taxonomic verification of returned specimens and photographs, the project will incorporate funding to facilitate genetic analysis of bycatch. Genetic methods can further elucidate the extent of diversity, refine taxonomic resolution, and distinguish cryptic species. Genetic analyses can also be applied to archived specimens for targeted research on specific taxa or target fisheries. Observer briefings, manuals, and training material will be revised based on outputs of this project to continue to improve the accuracy of at-sea identification, and thus continually provide higher-quality data for downstream usage.

Outputs:

1. Records and imagery of previously unidentified cold-water coral bycatch obtained by government funded Fisheries Observers within the New Zealand EEZ.
2. Creation and maintenance of a catalogue of observer and fisher collected coral samples.
3. Report(s) detailing confirmed identification, provenance, and all other data collected, for all specimens examined. Data will be reported by fishery stratum (fishing method, fishery area, and, where possible, target species).
4. Updated coral identification guides and other resources for use in training Fisheries Observers.
5. A spreadsheet summarising the changes made to COD records.

Indicative Research Cost: \$90,000

Cost Recovery: F(CR) Item 4B (100% Industry)

Cost Recovery Rationale:

In order to manage, and prioritise (e.g. through risk assessments), the implementation of measures to reduce bycatch it is important to understand what species are being bycaught. There is extensive investment in wider fisheries monitoring of protected species bycatch, but at sea-monitoring (observers or cameras) cannot always determine to species level which protected species is bycaught. This project provides expert support to ensure the most accurate level of identification for protected coral species bycaught and supports a range of cross agency activity to reduce bycatch. Accurate species-level identification enables robust data collection and analysis, which in turn informs the development of targeted mitigation strategies, such as changes to fishing gear, practices, or spatial/temporal closures. By improving the understanding of which species are impacted and how, this work directly contributes to avoiding, remedying, or mitigating the adverse effects of commercial fishing on protected marine species.

Fish stocks: BAR4, BAR5, BYX1, BYX2, BYX3, CDL1, HAK1, HOK1, JMA3, JMA7, LIN5, LIN6, LIN7, OEO1, OEO3A, OEO4, OEO6, ORH1, ORH2A, ORH2B, ORH3A, ORH3B, ORH7A, ORH7B, SBW6A, SBW6R, SBW6I, SBW6B, SCI2, SCI3, SCI4A, SQU1T, SQU6T, SWA3, SWA4, WWA5B, CDL2, HAK7

NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

1.3. INT2025-05 Port-based bag and tag

Start Date: 1 July 2025

Completion Date: 30 June 2027

Guiding Objectives: CSP Objectives B and C; National Plan of Action – Seabirds, Te Kaweka Takohaka mō te Hoiho 2020 and Hector's and Māui dolphin Threat Management Plan.

Project Objective:

To address protected species capture data gaps and enhance verification in fisheries where electronic monitoring is used as the sole monitoring and verification tool.

Rationale:

The rollout of onboard cameras is leading to an increased breadth of monitoring and verification in the inshore fleet. Although electronic monitoring (EM) offers a lot of opportunities, there are still areas where physical data collection is required. This includes data comparative to that which is collected by fisheries observers such as species-level verification and biological sample collection. Taxa with similar looking species, especially regarding seabirds and corals, require sampling to confirm identification down to the species level and origin. Such information is particularly pertinent to some of the most at-risk seabird species such as identification of Gibson's vs. Antipodean Albatross and Northern vs. Southern Buller's Albatross. Recent work in Australia further underscored the need for secondary data streams that facilitate challenging seabird identification (e.g., Polanowski et al. 2024 showed that 73% of unidentified albatrosses were Antipodean Albatrosses). Additionally, necropsy specimens are essential to obtain further information about age, sex, body condition, diet, and type of injuries.

Research Approach:

This programme will focus on areas and times historically known to be at high risk of protected species captures. Responsibilities will include the processing of specimens retained by fishers and near real-time ID confirmation to improve fisher identification skills. The success of this project relies on the voluntary support of industry for engagement and protected species retention. Relevant species identification and necropsies will be fulfilled through the INT2024-07, INT2025-03 and INT2025-04 projects.

Outputs:

1. Seabirds (whole specimen or feathers) and corals are returned and/or photographed, where possible, for identification and necropsy with results reported via project INT2025-03: Identification of seabirds captured in NZ fisheries and INT2025-04: Identification, storage and genetics of cold-water bycatch specimens.
2. Data will be available for other projects including mitigation development/testing and risk management projects.
3. A report describing the work undertaken and results.

Indicative Research Cost: \$80,000 per annum

Cost Recovery: F(CR) Item 4 (100% Industry)

Cost Recovery Rationale:

Similar to the tasks inshore observers used to complete, this project fills a role for species-level verification and biological sample collection for protected species captures. Protected species identification is important as it informs risk assessments and helps to inform and prioritise management actions for fleets of particular risk to protected species populations. Taxa with similar looking species, in particular seabirds and corals, require sampling to confirm identification down to the species level and origin. Such information is particularly pertinent to some of the most at-risk seabird species such as identification of Gibson's vs. Antipodean Albatross and Northern vs. Southern Buller's Albatross. The outputs of this project will enhance our understanding of the level of risk and adverse effects on bycaught protected species and will inform avoidance and mitigation development. This project directly supports fisher engagement and awareness to reduce the risk of further bycatch.

Fish stocks: BAR1, BAR5, BAR7, BIG1, BNS1, BNS2, BNS3, BNS7, BNS8, BUT5, ELE3, FLA1, FLA2, FLA3, FLA7, GUR1, GUR2, GUR3, GUR7, GUR8, HPB1, HPB2, HPB3, HPB4, HPB5, HPB7, HPB8, JDO1, JDO7, KAH1, LIN1, LIN2, MOK1, RCO3, RSK3, SNA1, SNA7, SNA8, SCH2, SCH3, SCH5, SCH7, SCH8, SNA2, SPO1, SPO3, SPO8, STA3, STA5, STA7, STN1, SWO1, TAR1, TAR2, TAR3, TAR7, TAR8, TOR1, TRE1, TRE7

Reference:

Polanowski, A.M., MacDonald, A.J., Double, M.C., Barrington, J.H.S., Burg, T.M., Wienecke, B. and McInnes, J.C. (2024), The Development of DNA Markers to Resolve Uncertainties of Seabird Bycatch Identification from Longline Fisheries in Australian Waters. *Ecol Evol*, 14: e70568. <https://doi.org/10.1002/ece3.70568>

NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

1.4. INT2025-07 Examining recruitment dynamics and recovery potential from fishing-induced adverse impacts on deep-sea corals on Chatham Rise seamounts

Start Date: 1 July 2025

Completion Date: 30 June 2027

Guiding Objectives: CSP Objectives B, C, D; Coral Medium Term Research Plan Themes 1-5.

Project Objectives:

1. To document the occurrence, extent and timeframes of coral recruitment, recovery and growth on areas subjected to a range of fishing pressure, from areas never trawled, to intensely fished features.
2. To advance our understanding of the vulnerability of different coral groups to fishing impacts and their ability to recover from these disturbances.

Rationale:

The Chatham Rise deepwater trawl fishery, primarily targeting orange roughy, has focused on numerous underwater features including seamounts within a complex known as the Graveyard Knolls. These features have been subject to different fishing effort, with some never fished, some closed to fishing since 2001, and others still open and fished from lightly to intensively. These varied historical and current fishing pressures in the area provide an excellent opportunity to examine rates of coral recruitment, recovery and growth following disturbance, and impacts relative to undisturbed areas.

Therefore, to help improve our understanding of the vulnerability of coral species to fishing impacts and their ability to recover from these disturbances, the proposed study aims to analyse newly acquired high-definition Remotely Operated Vehicle (ROV) captured video and extensive towed-camera survey data of deepwater corals collected during FS Sonne voyage SO309 (16/1—15/2/2025, CSP project INT2024-04). To observe coral fauna, the voyage completed 17 ROV dives within four areas (Graveyard Knolls, Otago shelf, Puysegur/Solander region, and Fiordland shelf), with a focus on video surveys and photo survey data subsequently collected from four seamounts in the Graveyard Knolls subject to varied fishing pressure. These surveys complement and augment a previous time series of video surveys undertaken on the Knolls that indicate very limited recovery, with the last survey 5 years ago. The voyage also located multiple settlement plates deployed at a known time point that can facilitate calibration of coral recovery time frames.

This project offers substantial cost leverage from the successful FS Sonne voyage SO309 that has already acquired requisite data at no cost to New Zealand participants using cutting-edge technology. The research will incorporate analysis of ocean floor observations of select corals to generate estimates of abundance, habitat associations, spatial coverage and a specific focus on indications of recruitment and growth of corals on previously disturbed substrates. This research, as well as feeding directly into the outcomes stipulated by Objective E of the CSP Coral Medium Term Research Plan, will also lend support to spatial management scenario testing for corals that must consider knowledge on recovery and resilience.

Research Approach:

To help improve our understanding of the vulnerability of coral species to fishing impacts and their ability to recover from these disturbances, the proposed study aims to analyse new ROV captured video and still records of cold-water coral collected during RV Sonne voyage SO309 (16/1—15/2/2025).

Images generated from towed camera transects on seamounts within the Graveyard complex will be analyzed to generate spatial and abundance data of coral communities in unfished, fished, and closed areas. These new data will be used to assess change over time, particularly in relation to the recovery of deep-sea coral communities following the cessation of fishing activities on closed seamounts. The new data will also be combined with additional information (e.g., fishing effort and risk assessment outputs) to frame outputs within the context of conservation management decisions and processes.

Outputs:

A written summary of results will be provided, along with a full technical report including statistical analysis of coral occurrence, distribution, abundance and recovery across the four seamounts with a specific focus on indications of recruitment/recovery on previously disturbed substrates.

The results and accompanying report will be presented to and reviewed by the CSP Technical Working Group and made available online.

Indicative Research Cost: \$48,500 per annum

Cost Recovery: F(CR) Item 4B (100% Industry)

Cost Recovery Rationale:

This project will use video surveys of seamounts that have been heavily fished, never fished, or lightly fished, to measure coral recovery (if any) following direct adverse impacts by commercial fishing. More broadly, this project will be able to look at recovery dynamics of corals after commercial trawling on seamounts. Some of the seamounts have been closed to fishing for 20 years, which also gives us a rare opportunity to determine if spatial closures to fishing/output controls are an effective means to remedy adverse impacts. The outputs will help us understand how to mitigate damage in areas previously trawled and to factor in coral recovery in future mitigation efforts (for example, spatial closures that avoid further impacts, and remedy damage through allowing time to recover).

Fish stocks: BAR1, BAR4, BAR5, BNS3, BYX1, BYX2, BYX3, CDL1, HAK1, HOK1, HPB5, HPB7, JMA3, JMA7, LIN1, LIN2, LIN5, LIN6, LIN7, OEO1, OEO3A, OEO4, OEO6, ORH1, ORH2A, ORH2B, ORH3A, ORH3B, ORH7A, ORH7B, SBW6A, SBW6R, SBW6I, SBW6B, SCH5, SCI2, SCI3, SCI4A, SNA1, SPO3, SQU1T, SQU6T, SWA3, SWA4, TAR1, TAR2, TRE1, TRE7, WWA5B

1.5. INT2026-02 Identification of marine mammals, turtles and protected fish captured in New Zealand fisheries

Start Date: 1 July 2026

Completion Date: 30 June 2029

Guiding Objectives: CSP Objectives B, C; Marine Mammal Medium Term Research Plan, Protected Fish Medium Term Research Plan, Sea Turtle Medium Term Research Plan, National Plan of Action – Sharks; New Zealand sea lion Threat Management Plan.

Project Objectives:

The accurate determination of the taxon of marine mammals, turtles and protected fish captured in New Zealand fisheries is vital for examining the potential threat to population viability posed by incidental fisheries captures. Observers on commercial vessels are not always able to identify marine mammals, turtles, and protected fish at sea with high precision, and the assessment of the age-class may require expert knowledge.

This project will determine, through expert examination of observer-collected photographs (and where necessary genetic samples) the taxon and, where possible, sex, age-class and provenance of marine mammal, turtle and protected fish captures in New Zealand fisheries.

This information will provide the species-level resolution required to support bycatch estimation, risk assessment, and the identification and implementation of management responses under CSP and associated Threat Management Plans and National Plans of Action. In doing so, it enables fisheries interactions with protected species to be accurately characterised and subsequently addressed through targeted avoidance and mitigation measures.

Research Approach:

Where Fisheries Observers recorded an incidental capture of a marine mammal, turtle, or protected fish, generally no specimen is retained. Instead, photographic records and a genetic sample are taken. Live interactions are photographed where possible. All photographs obtained, by specimen, will be delivered to a suitable expert for that taxonomic group in electronic format on a quarterly basis. Details on the date, time, location, and fishery of capture will also be provided. Photographs will be examined to determine the following:

- Identification to the lowest taxonomic level possible
- Sex (where possible)
- Age (where possible), and
- Provenance (origin) (where possible).

These data will be reported by taxon and fishery stratum (fishing method, fishery area and target species). When a specimen is identified, the identification features used shall be fully described. Genetic samples of all bycaught marine mammals, turtles and protected fish are routinely collected by Fisheries Observers and where photographic analysis cannot adequately determine taxa, genetic analysis may be undertaken.

Outputs:

1. A technical report summarising confirmed identification, sex, age-class, and provenance (where possible) for all examined specimens, reported by fishery stratum (method, area, and where possible, target species), including documentation of identification features used.
2. Verified identification data will be incorporated into relevant databases and made available for bycatch estimation, risk assessment, and modelling of fisheries impacts on protected species. These data provide essential inputs for identifying priority species and fisheries interactions requiring management attention.

The outputs of this project will enable:

- accurate attribution of fisheries interactions to species and populations identified in CSP research plans and Threat Management Plans;
- prioritisation of mitigation, operational controls, and spatial or temporal measures; and
- evaluation of the effectiveness of management interventions over time.

Indicative Research Cost: \$15,000 per annum

Cost Recovery: F(CR) Item 4 (100% Industry)

Cost Recovery Rationale:

This project supports delivery of CSP Objectives B (*The nature of direct adverse effects of commercial fishing on protected species is described*) and C (*The extent of known direct adverse effects of commercial fishing on protected species is adequately understood*) and directly implements actions in the CSP Medium Term Research Plans for marine mammals, protected fish and sea turtles that require improved species-level identification of fisheries interactions. These plans identify accurate taxonomic resolution of observed captures as a prerequisite for assessing risk, identifying priority species, and targeting management responses.

Observers and electronic monitoring cannot consistently resolve the identification of marine mammals, turtles, and protected fish to species, population, or demographic class. This project provides expert verification of observed capture events, converting observer and camera records into reliable, management-ready data on the identity and characteristics of protected species affected by fishing.

Accurate identification is necessary to:

- Determine whether captures involve species or populations identified as high priority in CSP research plans and Threat Management Plans (including the New Zealand sea lion TMP and NPOA–Sharks);
- Ensure that bycatch estimates, risk assessments, and monitoring outputs are attributed to the correct species; and
- Underpin the prioritisation and targeting of mitigation and management actions specified in these plans.

In this way, the project provides core input data required to implement management actions under CSP and associated national plans, including identifying where fisheries interactions occur with priority taxa and enabling those interactions to be addressed through mitigation, operational controls, or spatial and temporal measures.

This project contributes to avoiding, remedying, or mitigating the adverse effects of commercial fishing by enabling fisheries interactions with protected species to be correctly identified and subsequently managed.

Without this information, it is not possible to reliably determine which species are affected, nor to effectively target or evaluate management responses to reduce those effects.

Fish stocks: BAR1, BAR4, BAR5, BAR7, BIG1, BNS1, BNS2, BNS3, BNS7, BUT5, BUT7, BWS1, ELE3, ELE5, ELE7, EMA1, EMA3, EMA7, FLA1, FLA2, FLA3, FLA7, GMU1, GSH1, GSH3, GSH4, GSH7, GSH8, GSH9, GSP1, GSP7, GUR1, GUR2, GUR3, GUR7, GUR8, HAK1, HAK4, HAK7, HOK1, HPB1, HPB2, HPB3, HPB4, HPB7, HPB8, JDO1, JDO2, JDO3, JDO7, JMA1, JMA3, JMA7, KIN1, KIN7, KIN8, LEA1, LEA2, LEA3, LIN1, LIN2, LIN3, LIN4, LIN5, LIN6, LIN7, MOK1, MOK3, MOK5, ORH1, ORH2A, ORH2B, ORH3A, ORH3B, OEO1, OEO3A, OEO4, OEO6, RCO1, RCO3, RCO7, RSN1, RSN2, RIB1, RIB2, RSK1, RSK3, RSK7, RSK8, SBW6A, SBW6R, SBW6I, SBW6B, SCH1, SCH2, SCH3, SCH4, SCH5, SCH7, SCI1, SCI2, SCI4A, SCI6A, SCI6B, SKI1, SKI3, SKI7, SNA1, SNA2, SNA3, SNA7, SNA8, SPD1, SPD3, SPD4, SPD5, SPD7, SPD8, SPE1, SPE3, SPE4, SPE7, SPO1, SPO3, SPO7, SPO8, SQU1T, SQU6T, SSK1, SSK3, SSK7, SSK8, STA1, STA3, STA4, STA5, STA7, STN1, SWA1, SWA3, SWA4, SWO1, TAR1, TAR2, TAR3, TAR4, TAR5, TAR7, TAR8, TOR1, TRE1, TRE2, TRE7, TRU3, TRU4, WAR1, WAR2, WAR3, WAR7, WAR8, WWA2, WWA3, WWA4, WWA5B, WWA7, YEM1, YEM8, YEM9

2 Population Projects

NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

2.1. POP2025-01 Southern Buller's albatross juvenile banding and tracking

Start Date: 1 July 2025

Completion Date: 30 June 2028

Guiding Objectives: CSP Objective E; Seabird Medium Term Research Plan; National Plan of Action – Seabirds.

Project Objectives:

1. To band representative samples of juvenile cohorts to enable estimates of juvenile survival and recruitment in the future.
2. To support the deployment of satellite tracking devices on juveniles to provide updated novel insights into the at-sea distribution.

Rationale:

This project delivers key components of the CSP Seabird Medium Term Research Plan on Southern Buller's albatross. Southern Buller's albatross is the most at-risk species on the New Zealand fisheries risk assessment, adult survival has been in decline for decades and the number of breeding adults has shown stark declines in the last two seasons (Sagar et al. 2024).

Despite a long-term study dedicated to understanding the drivers of population trends being maintained for decades, little is known about early life history stages, including juvenile survival, recruitment, and the at-sea distribution of juveniles, as juveniles were last banded over a decade ago and juveniles have never been tracked before.

To address these knowledge gaps, improve insights into the demographic drivers of the declines observed in this species, and to potentially enhance future iterations of New Zealand fisheries risk assessments, a three-year project is planned.

Research Approach:

This three-year project seeks to address knowledge gaps surrounding the early life stages of Southern Buller's albatross by visiting the key monitoring site, Tini Heke/Snares for three consecutive years with the goal to 1) band three representative cohorts of juvenile Southern Buller's Albatross, enabling future estimates of juvenile survival and recruitment, and 2) provide opportunities for the deployment of satellite tracking devices as provided directly by DOC to enable the first insights into the at-sea distribution of juveniles. This project would address major knowledge gaps in the most at-risk species in New Zealand and allow improved evaluation of the impacts of bycatch in New Zealand fisheries on these species.

Outputs:

1. Annual technical report(s) on the work undertaken and results found, including updated at-sea distribution.
2. Annual summary of results will be presented to, and reviewed by, the CSP Technical Working Group, and made available online.
3. Data collected during the project to be made available annually in electronic format.

Indicative Research Cost: \$50,000 per annum

Cost Recovery: 100% Crown funded for year 2 of the project. The cost recovery of year 3 of the project will be considered and consulted on when developing the CSP Annual Plan 2027/28.

Fish stocks: N/A (for year 2 of the project)

References:

Sagar, P., Rexer-Huber, K., Thompson, D., Parker, G. (2024) Population studies of southern Buller's albatrosses at Tini Heke / The Snares Islands and Hautere / Solander Islands. Final report to the Conservation Services Programme, Department of Conservation. Parker Conservation, Dunedin. 13 p.

NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

2.2. POP2025-02 Black petrel and flesh-footed shearwater demographic modelling

Start Date: 1 July 2025

Completion Date: 30 June 2027

Guiding Objectives: CSP Objective E; Seabird Medium Term Research Plan; National Plan of Action – Seabirds.

Project Objectives:

1. To estimate black petrel population size using at-sea capture data.
2. To estimate black petrel adult survival, juvenile survival, and if possible, breeding probability.
3. To estimate flesh-footed shearwater adult survival, juvenile survival, and if possible, breeding probability.

Rationale:

Black petrels and flesh-footed shearwaters both rank high in the updated New Zealand fisheries risk assessment (fourth and seventh, respectively; Edwards et al. 2023) and have been subjected to concerted monitoring across multiple years (Bell et al. 2024, Ray et al. 2024). A large portion of the monitoring consists of the banding and resighting of adults and juveniles at breeding colonies (predominantly Aotea, but also Hauturu, for black petrels, and Ohinau and Lady Alice Islands for flesh-footed shearwaters). In addition, black petrels have been subjected to four years of concerted at-sea capture efforts to provide an independent banding and resighting data stream.

Flesh-footed shearwaters have also been captured at sea in some years. For both species, the data sets are now due to be (re)analysed. The latest black petrel demographic assessment dates to 2017 (Zhang et al. 2020) while the latest flesh-footed shearwater survival assessment from New Zealand dates to 2012 (Barbraud et al. 2014). This project aims to provide much-needed updates to demographic assessments of these two vulnerable species.

Research Approach:

This project will (re)analyse the black petrel and flesh-footed shearwater banding datasets across multiple sites and projects through Bayesian multi-state/multi-event capture-recapture models which account for a range of biases including imperfect detection and interannual variation in various parameters to 1) provide an updated and unbiased population size estimate for black petrels leveraging the novel at-sea capture data, 2) provide updated estimates of black petrel adult survival, juvenile survival, and if possible, breeding probability (as estimated through multi-state/event survival models), and 3) provide updated estimates of flesh-footed shearwater adult survival, juvenile survival, and if possible, breeding probability (as estimated through multi-state/event survival models).

A two-year project is planned to allow for ample time to get datasets into the necessary analysis formats. The outputs from this project are directly relevant to any future iterations of fisheries risk assessments as well as allowing for more detailed assessments of changes in fisheries related mortalities.

Outputs:

1. Annual technical report(s) on the work undertaken and results found, including updated estimates of population size and key demographic parameters.
2. Annual summary of results will be presented to, and reviewed by, the CSP Technical Working Group and made available online.
3. Data collected during the project to be made available annually in electronic format.

Indicative Research Cost: \$40,000 per annum

Cost Recovery: F(CR) Item 3 (50% Industry, 50% Crown)

Cost Recovery Rationale:

This project leverages several existing data streams from various fieldwork projects (including POP2025-03) to further improve specific demographic parameters for these species, enabling improvements to future iterations of the seabird fisheries risk assessment. The seabird fisheries risk assessment is a management prioritisation tool, reliant on accurate spatial and demographic data, that facilitates assessments of the efficacy of current seabird bycatch mitigation and guidance of future improvements to seabird bycatch mitigation on a gear and fleet-specific level. This project overcomes the shortcomings of data provided directly from fieldwork (e.g., POP2025-03) through modelling and provides the necessary improvements to specific demographic parameters. Consequently, the project's outputs will directly contribute to future mitigation of bycatch of this species. As these species are the fourth ranking and seventh ranking species (i.e., the highest-ranking petrel species) on the current risk assessment, improving information is of considerable importance.

Fish stocks: BIG1, BNS1, GUR1, GUR2, JDO1, SCH4, SCI1, SCI2, SNA1, SNA2, SWO1, TAR1, TRE1

References:

Barbraud, C.; Booth, A.; Taylor, G. A.; and Waugh, S. M. (2014) Survivorship in Flesh-footed Shearwater *Puffinus Carneipes* at Two Sites in Northern New Zealand. Marine Ornithology: Vol. 42 : Iss. 2 , Article 1.

Bell, E.A.; Lamb, S. & Ray, S. (2024). Key demographic parameters and population trends of tākoketai/black petrels (*Procellaria parkinsoni*) on Aotea/Great Barrier Island: 2023/24. Unpublished Wildlife Management International Ltd. Technical Report to the Conservation Services Programme, Department of Conservation, Wellington. 67 p.

Edwards, C.T.T.; Peatman, T.; Roberts, J.O.; Devine, J.A.; Hoyle, S.D. (2023). Updated fisheries risk assessment framework for seabirds in the Southern Hemisphere. New Zealand Aquatic Environment and Biodiversity Report No. 321. 103 p

Ray, S. Burgin, D., Lamb, S., Olsthoorn, M (2024) Toanui/flesh-footed shearwater population monitoring and estimates: 2023/24 season. Unpublished Wildlife Management International Technical Report to the Department of Conservation. 58 p.

Zhang, J. , Bell, E.A., Roberts, J.O (2020) Demographic assessment of black petrels (*Procellaria parkinsoni*) on Great Barrier Island (Aotea Island). New Zealand Aquatic Environment and Biodiversity Report No. 244. 52 p.

NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

2.3. POP2025-03 Black petrel monitoring

Start Date: 1 July 2025

Completion Date: 30 June 2028

Guiding Objectives: CSP Objective E; Seabird Medium Term Research Plan; National Plan of Action – Seabirds.

Project Objective:

To monitor key demographic parameters of the black petrel population.

Rationale:

Black petrels are the highest-ranking petrel species in the latest fisheries risk assessment (Edwards et al. 2023) and as such, the continuation of the long-term monitoring programme (i.e., continuation of POP2022-01) is planned to continue monitoring key demographic parameters of this vulnerable species. However, a reduced work programme is planned as it appears that the population size is increasing at a steady rate (Bell et al. 2024). Despite this apparent positive trend, further data collection is advisable to continue to monitor any changes in population status and trends and provide the baseline information to inform future risk assessments.

Research Approach:

The project will collect data to improve estimates of key demographic parameters of Black Petrel via continued mark-recapture and study grid monitoring following well established methods (e.g., Bell et al. 2024). However, instead of the three annual field trips that have been conducted in previous years (Dec, Jan and Apr/May), it is planned that the project is reduced to two field trips per year to increase efficiency. Despite this reduction in field time, the outputs from this project remain directly relevant to any future iterations of fisheries risk assessments as well as allowing for more detailed assessments of changes in fisheries related mortalities.

Outputs:

1. Annual technical report(s) on the work undertaken and results found, including updated estimates of population size and key demographic parameters.
2. Annual summary of results will be presented to, and reviewed by, the CSP Technical Working Group and made available online.
3. Data collected during the project to be made available annually in electronic format.

Indicative Research Cost: \$35,000 per annum

Cost Recovery: F(CR) Item 3 (50% Industry, 50% Crown)

Cost Recovery Rationale:

The outputs of this project will provide updated spatial and demographic information which will enable improvements to future iterations of the seabird fisheries risk assessment. The seabird fisheries risk assessment is a management prioritisation tool, reliant on accurate spatial and demographic data, that facilitates assessments of the efficacy of current seabird bycatch mitigation and guidance of future improvements to

seabird bycatch mitigation on a gear and fleet-specific level. Consequently, the project's outputs will directly contribute to future mitigation of bycatch of this species. As this species is the fourth ranking species (i.e., the highest-ranking petrel) on the current risk assessment, improving information is of considerable importance.

Fish stocks: BIG1, BNS1, SCH4, SCI1, SNA1, SWO1, TAR1, TRE1

References:

Bell, E.A.; Lamb, S. & Ray, S. (2024). Key demographic parameters and population trends of tākoketai/black petrels (*Procellaria parkinsoni*) on Aotea/Great Barrier Island: 2023/24. Unpublished Wildlife Management International Ltd. Technical Report to the Conservation Services Programme, Department of Conservation, Wellington. 67 p.

Edwards, C.T.T.; Peatman, T.; Roberts, J.O.; Devine, J.A.; Hoyle, S.D. (2023). Updated fisheries risk assessment framework for seabirds in the Southern Hemisphere. New Zealand Aquatic Environment and Biodiversity Report No. 321. 103 p

NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

2.4. POP2025-04 Auckland Islands seabird research: White-capped and Gibson's albatross

Start Date: 1 July 2025

Completion Date: 30 June 2028

Guiding Objectives: CSP Objective E; Seabird Medium Term Research Plan; National Plan of Action – Seabirds.

Project Objectives:

1. To monitor adult survival and breeding probability of white-capped albatross.
2. To describe the at-sea distribution of white capped albatross, including juveniles.
3. To monitor the key demographic parameters of Gibson's albatross to reduce uncertainty or bias in estimates of risk from commercial fishing.
4. To estimate the annual population size of Gibson's and white-capped albatross.

Rationale:

This project delivers key components of the CSP Seabird Medium Term Research Plan, on white-capped and Gibson's albatross.

White-capped albatross is the most bycaught seabird species in New Zealand fisheries (~2600 individuals annually) and the third most at-risk species based on the updated New Zealand fisheries risk assessment (Edwards et al. 2023). Contrasting, and therefore controversial, trend estimates exist indicating either a steep population decline (Walker et al. 2020) or a shallow, non-significant population decline (Baker et al. 2023), depending on the analytical approach.

Despite these causes for concern, the latest population estimate of the species from its main breeding site (Disappointment Island) dates back to 2018 and since then visits to the colony have been short, dependent on other fieldwork priorities, and occurred at suboptimal times, limiting estimates of population size and demographic rates. This project aims to overcome the shortcomings of previous projects (e.g., POP2022-08) by allocating the majority of the budget to ensure adequate field time to address the data gaps that plague this heavily bycaught species.

Gibson's albatross has shown a concerning decline in the early 2000s, is considered Nationally Critical, and is listed as medium risk on the updated New Zealand fisheries risk assessment. Considerable efforts over several decades have been invested into understanding the population dynamics of this species (e.g., Francis et al. 2012), including a recent concerted effort to conduct a full island survey at the main breeding site (Adams Island; Elliott et al. 2024).

After the population crash, the population appeared stable to increasing between 2006 and 2015, but recent insights indicated that over the period 2016-2024, a slow decline of the population may have become evident again (Elliott et al. 2024). Consequently, to gain further insights into the potential recurrence of a population decline, and the underlying demographic drivers, another three years of population monitoring is planned, albeit at a reduced intensity when compared to POP2022-08, with a focus on ongoing monitoring of key demographic parameters and population size.

Cost saving synergies with other projects operating within the Auckland Island archipelago (and potentially also Campbell Island) will be employed to ensure the efficiency of this project.

Research Approach:

This three-year project consists of three targeted visits at the optimal time for white-capped albatross (e.g., December) to the main colony of this species (Disappointment Island). The main purpose is to provide three consecutive population estimates derived using the collection of drone imagery of the full island, supported by an updated digital elevation model (DEM; the current DEM is not fit for purpose; Elliott et al. 2023) and the necessary ground truthing, within and beyond Castaway Bay.

In addition, these visits will allow to further build on the existing mark-recapture dataset to provide insights into adult survival and breeding probability. During the targeted visits, this project will provide the opportunity for further deployment of tracking devices to better study the at-sea distribution of this high-risk species, as knowledge of current at-sea distribution needs updating.

Most notably, current knowledge of the at-sea distribution of juveniles is poor and as such, the final year of this project includes a winter visit to Disappointment Island to attempt and deploy satellite transmitters on juveniles. Combined, the outputs of this project will allow for updated and more detailed evaluation of the impacts of bycatch in New Zealand fisheries on this species.

The project will also collect data to improve estimates of key demographic parameters of Gibson's albatross via continued mark-recapture monitoring. Population size will be monitored through established long-term index plots. The research approach will follow established methods (Walker & Elliott 1999). The suite of estimates provided through this project allows more precise assessment of population trends than from simple nest counts as is common in many other species. The findings provided by this project will allow for continuing and detailed evaluation of the impacts of bycatch in New Zealand fisheries on this species.

Outputs:

1. Annual technical report(s) on the work undertaken and results found, including updated estimates of population size and key demographic parameters.
2. Annual summary of results will be presented to, and reviewed by, the CSP Technical Working Group and made available online.
3. Data collected during the project to be made available annually in electronic format.

Indicative Research Cost: \$160,000 per annum for year 1 and 2, \$200,000 for year 3.

Cost Recovery: 100% Crown funded for year 2 of the project. The cost recovery of year 3 of the project will be considered and consulted on when developing the CSP Annual Plan 2027/28.

Cost Recovery Rationale: N/A

Fish stocks: N/A

References:

Baker, G.B.; Jensz, K.; Cunningham, R.; Robertson, G.; Sagar, P.; Thompson, D.R.; Double, M.C. (2023). Population assessment of White-capped Albatrosses *Thalassarche steadi* in New Zealand. *Emu - Austral Ornithology* 123: 60–70.

Edwards, C.T.T.; Peatman, T.; Roberts, J.O.; Devine, J.A.; Hoyle, S.D. (2023). Updated fisheries risk assessment framework for seabirds in the Southern Hemisphere. New Zealand Aquatic Environment and Biodiversity Report No. 321. 103 p

Elliott G, Walker K, Rexer-Huber K, Tinnemans J, Long J, Sagar R, Osborne J, Parker, G. (2024). Gibson's wandering albatross: demography, satellite tracking and census. Final Report Prepared for New Zealand Department of Conservation. 33 p.

Walker K, Elliott G, Parker GC, Rexer-Huber K. (2023). Gibson's wandering albatross: population study and potential for drone-based whole-island census. POP2022-08 final report prepared for New Zealand Department of Conservation. 28 p.

Francis, R.I.C.C. (2012). Fisheries risks to the population viability of white-capped albatross *Thalassarche steadi*. New Zealand Aquatic Environment and Biodiversity Report No. 104. Wellington, Ministry for Primary Industries.

Walker, K.; Elliott, G. (1999). Population changes and biology of the wandering albatross *Diomedea exulans gibsoni* at the Auckland Islands. Emu 99: 239–247

Walker, K.; Elliott, G.P.; Rexer-Huber, K.; Parker, G.C.; McClelland, P.; Sagar, P.M. (2020). Shipwrecks and mollymawks: an account of Disappointment Island birds. Notornis 67: 213–245.

NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

2.5. POP2025-07 Chatham albatross research

Start Date: 1 July 2025

Completion Date: 30 June 2027

Guiding Objectives: CSP Objective E; Seabird Medium Term Research Plan; National Plan of Action – Seabirds.

Project Objectives:

1. To provide an updated population estimate of Chatham albatross.
2. To update the at-sea distribution.
3. To provide the first breeding success estimate, and potentially the first estimate of breeding probability.
4. To contribute to the demographic dataset to enable estimates of adult survival.

Rationale:

This project delivers key components of the CSP Seabird Plan on Chatham albatross. The Chatham albatross is the sixth most at-risk species based on the updated New Zealand fisheries risk assessment (Edwards et al. 2023). This ranking is largely driven by the small population size of this species, which was estimated at ~5300 breeding pairs in 2017 (Bell et al. 2018). Since then, no updated estimates of population size - or any assessments of demographic parameters - have been conducted. Insights on some demographic parameters are entirely lacking for this species, most notably breeding probability and breeding success; of which the former is highly influential on the New Zealand fisheries risk assessment. Similarly, any tracking of this species dates back to 2008 or earlier. The lack of up-to-date estimates of population size, demographic parameters, and at-sea distribution challenges assessments of trends, the accuracy of the fisheries risk assessment, and any benefits of seabird bycatch mitigation measures.

Research Approach:

This is a two-year project which aims to facilitate a visit during incubation (October) in both years to the sole breeding colony of the species (Tarakoikoia/The Pyramid) to enable 1) ground counting of breeding pairs (supported by a drone if needed) at the right time (i.e., during incubation) to provide two updated population estimates, 2) the banding of unbanded individuals and the resighting of previously banded individuals over two years to add to the demographic dataset and to potentially provide the first insight into breeding probability in the second year, 3) the deployment of remote cameras to provide the first insight into breeding success of this species in the second year, and 4) the deployment of satellite tracking devices and GLS tags in the first year to provide updated insights into the at-sea distribution of this species. Combined, the outputs of this project would provide a much needed update on a range of different population parameters and allow for updated and more detailed evaluation of the impacts of bycatch in New Zealand fisheries on this species.

Outputs:

1. Annual technical report(s) on the work undertaken and results found, including updated estimates of population size, at-sea distribution, and key demographic parameters.
2. Annual summary of results will be presented to, and reviewed by, the CSP Technical Working Group, and made available online.
3. Data collected during the project to be made available annually in electronic format.

Indicative Research Cost: \$50,000 in year 1, \$30,000 in year 2

Cost Recovery: F(CR) Item 3 (50% Industry, 50% Crown)

Cost Recovery Rationale:

The outputs of this project will provide updated spatial and demographic information which will enable improvements to future iterations of the seabird fisheries risk assessment. The seabird fisheries risk assessment is a management prioritisation tool, reliant on accurate spatial and demographic data, that facilitates assessments of the efficacy of current seabird bycatch mitigation and guidance of future improvements to seabird bycatch mitigation, on a gear and fleet-specific level. Consequently, the project's outputs will directly contribute to future mitigation of bycatch of this species. The collection of spatial information also allows for finer scale assessments and enables targeted outreach activities, such as fishery liaison support, to assist operators reduce bycatch. As this species is the sixth ranking species on the current risk assessment, improving the very outdated information is of considerable importance.

Fish stocks: BAR4, HOK1, LIN4, ORH3B, SBW1, SCI4A, SQU1T

References:

Bell, M.D.; Bell, D.J.; Boyle, D.P.; Tuanui-Chisholm, H. (2018). Rangitatahi Seabird research: December 2017. Technical report to the Department of Conservation.

Edwards, C.T.T.; Peatman, T.; Roberts, J.O.; Devine, J.A.; Hoyle, S.D. (2023). Updated fisheries risk assessment framework for seabirds in the Southern Hemisphere. New Zealand Aquatic Environment and Biodiversity Report No. 321. 103 p.

NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

2.6. POP2025-08 Antipodean albatross and white-chinned petrel research

Start Date: 1 July 2025

Completion Date: 30 June 2028

Guiding Objectives: CSP Objective E; Seabird Medium Term Research Plan; National Plan of Action – Seabirds.

Project Objectives:

1. To monitor key demographic parameters of Antipodean albatross to reduce uncertainty or bias in estimates of risk from commercial fishing.
2. To estimate the annual population size of Antipodean albatross
3. To estimate adult survival of white-chinned petrels.

Rationale:

This project delivers key components of the CSP Seabird Plan on Antipodean albatross and white-chinned petrel. The Antipodean albatross has shown a concerning decline since the early 2000s, is listed as Nationally Critical, is considered a bycatch flagship species, and is listed as medium risk on the updated New Zealand fisheries risk assessment. Considerable efforts over several decades have been invested into understanding the population dynamics of this species (e.g., Richard et al. 2024), including a recent concerted effort to conduct a full island survey at the main breeding site (Antipodes Island; Rexer-Huber et al. 2024). White-chinned petrels also occur on the Antipodes, which are the second most bycaught species in New Zealand fisheries. Over the last three years, a study population of White-chinned petrels has been established on Antipodes providing novel opportunities to estimate key demographic parameters (Rexer-Huber et al. 2024). This project will continue the ongoing monitoring on both species to evaluate the population level impacts of the implementation of seabird bycatch mitigation methods in New Zealand fisheries (Antipodean albatross) and provide novel estimates of survival (white-chinned petrel). Shorter visits to the Antipodes are planned to enable more concerted and efficient monitoring and thus reduce costs compared to previous projects (e.g., POP2022-10).

Research Approach:

The project will collect data to improve estimates of key demographic parameters of Antipodean albatross and White-chinned petrel via continued mark-recapture monitoring. In addition, the population size of Antipodean albatross will be monitored through established long-term index plots. The research approach will follow established methods (Walker & Elliott 1999). The suite of estimates provided through this project will allow for more precise assessment of population trends than from simple nest counts as is common in many other species. The findings provided by this project will allow for continuing detailed evaluation of the impacts of bycatch in New Zealand fisheries on this species.

Outputs:

1. Annual technical report(s) on the work undertaken and results found, including updated estimates of population size and key demographic parameters.

2. Annual summary of results will be presented to, and reviewed by, the CSP Technical Working Group and made available online.
3. Data collected during the project to be made available annually in electronic format.

Indicative Research Cost: \$120,000 per annum

Cost Recovery: 100% Crown funded for year 2 of the project. The cost recovery of year 3 of the project will be considered and consulted on when developing the CSP Annual Plan 2027/28.

Cost Recovery Rationale: N/A

Fish stocks: N/A

References:

Rexer-Huber K., Whitehead E., Parker G.C., Patterson, E., Walker K., Welch, J., Elliott G. (2024). Antipodean wandering albatrosses and white-chinned petrels 2024. Final report to the Department of Conservation. Parker Conservation, Dunedin. 29 p.

Richard, Y., Berkenbusch, K., Crawford, E., Tornquist, M., Walker, K., Elliott, G., Tremblay-Boyer, L. (2024). Antipodean albatross multi-threat risk assessment. New Zealand Aquatic Environment and Biodiversity Report No. 332. 62 p.

Walker, K.; Elliott, G. (1999). Population changes and biology of the wandering albatross *Diomedea exulans gibsoni* at the Auckland Islands. *Emu* 99: 239–247

NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

2.7. POP2025-09 Campbell Island seabird research

Start Date: 1 July 2025

Completion Date: 30 June 2027

Guiding Objectives: CSP Objective E; Seabird Medium Term Research Plan; National Plan of Action – Seabirds.

Project Objectives:

1. To estimate the annual population size of southern royal albatross.
2. To monitor key demographic parameters of southern royal albatross.
3. To describe the year-round distribution of southern royal albatross.
4. To estimate the annual population size of Campbell albatross and grey-headed albatross.
5. To support the deployment of satellite tracking devices.

Rationale:

This project delivers key components of the CSP Seabird Plan on a range of albatross species breeding on Campbell Island. Due to logistical costs involved in getting to Campbell Island, research on the various albatross species has been combined into one Campbell Island seabird research project. While southern royal albatross, grey-headed albatross, and Campbell albatross are all listed as medium to low risk on the most recent New Zealand fisheries risk assessment (Edwards et al. 2023), new insights published since this risk assessment was conducted have shown that all three species have declined concerningly. Specifically, in 2023/24 the population size of southern royal albatross was estimated at 27% lower than listed on the risk assessment, grey-headed albatross at 28% lower, and Campbell albatross at 16% lower (Mischler et al. 2024). As the fisheries risk assessment is sensitive to population size as an input, it is highly likely that the risk to these species has been underestimated in the latest risk assessment.

To improve future iterations of the New Zealand fisheries risk assessments and to provide more accurate estimates of risk to these species, this project aims to provide robust population estimates of all three species, as well as updated demographic parameters and improved insights into the at-sea distribution of all three species.

Similar to the previous Campbell Island seabird project (POP2023-04) this project will also provide a platform for possible additional DOC research on other seabird species as risk from bycatch (e.g., northern giant petrel, Antipodean albatross, and white-chinned petrels), but this a lower priority than the research on the species mentioned above and dependent on logistics. Similar to the previous project (POP2023-04), this project would leverage cost-saving synergies with other work on Campbell (and potentially the Auckland Islands).

Research Approach:

This two-year project aims to build on the groundwork laid by previous projects (POP2023-04) and provide accurate updated insights into the annual population size of southern royal, Campbell, and grey-headed albatross as well as demographic parameters of southern royal albatross. Specifically, during each year of the project, 25% of the southern royal albatross population will be counted at established study/index plots, while

a newly marked population will enable the first insights into adult survival and breeding probability in several decades (Mischler et al. 2024). Further use of remote cameras will provide insights into southern royal albatross breeding success. Population size of Campbell and grey-headed albatross will be estimated using the well-established photo-points in combination with ground counts to enable the necessary corrections. In addition to this demographic work, this project enables further insights into the at-sea distribution of these three albatross species, either through recovery of previously deployed GLS tags (southern royal albatross) or by providing a platform for DOC-funded satellite tracking devices (in particular for grey-headed albatross). Combined, the outputs of this project will allow for updated and more detailed evaluation of the impacts of bycatch in New Zealand fisheries on this species.

Outputs:

1. Annual technical report(s) on the work undertaken and results found, including updated estimates of population size, at-sea distribution, and key demographic parameters.
2. Annual summary of results will be presented to, and reviewed by, the CSP Technical Working Group and made available online.
3. Data collected during the project to be made available annually in electronic format.

Indicative Research Cost: \$150,000 per annum

Cost Recovery: 100% Crown funded for year 2 of the project. The cost recovery of year 3 of the project will be considered and consulted on when developing the CSP Annual Plan 2027/28.

Cost Recovery Rationale: N/A

Fish stocks: N/A

References:

Edwards, C.T.T.; Peatman, T.; Roberts, J.O.; Devine, J.A.; Hoyle, S.D. (2023). Updated fisheries risk assessment framework for seabirds in the Southern Hemisphere. New Zealand Aquatic Environment and Biodiversity Report No. 321. 103 p

Mischler, C., Thompson, T., Moore, P., Philip, B., Wickes, C. (2024). Campbell Island Seabird Research. POP2023-04 final report prepared for Conservation Services Programme, Department of Conservation. 49 p.

NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

2.8. POP2025-10 Population growth, distribution and demographics of New Zealand sea lions inhabiting northern Stewart Island

Start Date: 1 July 2025

Completion Date: 30 June 2028

Guiding Objectives: CSP Objective E; New Zealand sea lion Threat Management Plan and upcoming Action Plan 2024 - 2029; Marine Mammal Medium Term Research Plan.

Project Objectives:

1. To estimate the population size of New Zealand sea lions, including age and sex range, in and around Patterson's Inlet, northern Stewart Island.
2. To understand the distribution of New Zealand sea lions in and around Patterson's Inlet, northern Stewart Island.

Rationale:

This project delivers important information on New Zealand sea lion numbers on Stewart Island/Rakiura. A decade long study of pup numbers and distribution in Pegasus Inlet has shown that numbers are increasing, with up to 94 pups born there annually (2025). Both the number of pups born and New Zealand sea lion distribution on Stewart Island are expected to continue to grow in the coming years. We know that there is pupping occurring in and around Patterson's Inlet, northern Rakiura, but we don't yet know their numbers and distribution.

With the implementation of cameras on inshore fisheries vessels, it has become clear that sea lions are now being caught in inshore fisheries around Stewart Island/Rakiura. This project delivers key information on sea lions that will inform how we manage this species and thus help prevent a likely rapid increase in captures that would be expected to correlate with an increase in sea lion numbers.

The population of sea lions on Stewart Island/Rakiura is particularly important to understand given that 1) it is relatively new and yet to reach a size where females breed in colonies, 2) the numbers of pups born on the main breeding colonies on the Auckland Islands are declining and 3) there are opportunities to learn how to prevent bycatch in inshore fisheries before the problem impedes population recovery in the area.

Research Approach:

Patterson's Inlet area of Stewart Island/Rakiura will be surveyed over three consecutive summers to estimate sea lion numbers, demographics (age and sex profiles) and distribution. All known pups in the area will be flipper tagged for three consecutive years to understand sea lion breeding and distribution at this location. Tagged pups will provide a pool of known age individuals for the estimation of parameters such as survival, recruitment, movement patterns and reproductive rate if this area were to become part of a long-term study. Tag re-sightings around Patterson's Inlet will likely be high given the number of people regularly in the area due to the proximity of Oban township, tourist destinations (Ulva Island, tramping tracks and huts, Millars Beach/Whaling Station) and commercial mussel and salmon farms.

Outputs:

1. Annual technical report(s) on the work undertaken and results found.
2. Annual summary of results will be presented to, and reviewed by, the CSP Technical Working Group and made available online.
3. Data collected during the project to be made available annually in electronic format.

Indicative Research Cost: \$20,000 per annum

Cost Recovery: F(CR) Item 3 (50% Industry, 50% Crown)

Cost Recovery Rationale:

New Zealand sea lions have been gradually re-establishing a population on Stewart Island/Rakiura. While historically focus has only been on sea lion vulnerability to bycatch in the Sub-Antarctic fisheries (FMA 6), in the past year there have been two documented cases of sea lions caught and killed in the inshore fisheries around Stewart Island/Rakiura (FMA 5). Two sea lions bycaught in commercial fishing is significant for the Rakiura population where only 94 pups were born in the summer of 2024-25. By estimating current and future population dynamics of sea lions around northern Stewart Island, the outputs of this project will be used to identify how to avoid a rapid increase in bycatch of sea lions as they reestablish in this area.

Fish stocks: BAR5, BCO5, BUT5, HAK5, HOK1, LIN5, JMA3, JMA7, SCH5, SQU1T, STA5, SWA3, SWA4, WWA5B

2.9. POP2026-01 Southern Buller's population study

Start Date: 1 July 2026

Completion Date: 30 June 2029

Guiding Objectives: CSP Objective C and E, CSP Seabird Medium Term Research Plan, ACAP, NPOA seabirds

Project Objectives:

1. To estimate the population size of Southern Buller's Albatross on the Snares Islands.
2. To estimate demographic rates of Southern Buller's Albatross on the Snares Islands.
3. To estimate the population size of Southern Buller's Albatross on Solander Islands.

The Southern Buller's Albatross (*Thalassarche bulleri bulleri*) is the species most at-risk from New Zealand commercial fishing-related impacts according to the latest Spatially Explicit Fisheries Risk Assessment (SEFRA), which indicates unsustainable population-level impacts on this taxon (risk ratio = 1.16 [0.71-2.65], i.e., Very High Risk; Richard et al. 2020, Edwards et al. 2023). Under POP2023-02, concerted efforts were invested into providing updated data on 1) population size at both colonies (Solander Islands in 2024, Snares in 2026; Frost et al. 2025, Sagar et al. in prep.), 2) distribution from both colonies (Solander Islands during 2024; [STDB2267](#), Snares during 2024-2026; [STDB2269](#), [STDB2460](#)), and 3) demographic rates (Snares only; Sagar et al. 2024, 2025).

Analyses of these collected data indicate that the Snares Islands population has seen declines over the course of the early 2000s but may have stabilised now, yet the small proportion the traditional study areas represent create considerable uncertainty (Fischer et al. 2026). Furthermore, the Snares Islands population is still suffering from unsustainably low adult survival rates (Sagar et al. 2024, 2025), which align with the Very High-Risk category assigned by SEFRA (Edwards et al. 2023).

The Solander Islands population has historically increased but may be plateauing recently as well, yet the 10-year intervals of population size assessments challenge inferences (Fischer et al. 2026) and no detailed demographic data exist for this difficult-to-access site.

As such, to accomplish CSP objectives C and E, accurate and further up-to-date abundance and demographic data to better understand fishing-related risks to both populations is required. Information from the proposed research will be presented to, and reviewed by, the CSP Technical Working Group and will be used to inform targeted industry best practice guidance designed to avoid Southern Buller's Albatross captures.

Research Approach:

Given the considerable investment into the species through POP2023-02 (Sagar et al. 2024, 2025, in prep.), a considerably (57%) reduced research programme is proposed across a three-year term. Specifically, it is proposed to estimate the population size across three years (2027-2029) through counts at traditional study sites (Mollymawk Bay, Upper, and Lower Punui Bay; jointly representing 2.7% of the population) with the addition of the re-ignition of historic rapid counts of the North Promontory site (representing 14.5%; Sagar & Stahl 2005) to increase the overall representativeness of the collected abundance data and reduce uncertainty (Fischer et al. 2026).

Additionally, in the third year of the proposed research (i.e., 2029), an aerial count (combined with ground transects) of the Solander Island population will be conducted following the methods employed under project

2023-02 (Frost et al. 2005), which would increase the temporal resolution from 10 to 5 years and therefore considerably reducing uncertainty.

In addition to the generation of more accurate abundance data for both breeding sites of the species, the proposed research would continue building on the current demographic dataset. These data will, through the impending multi-threat risk assessment (MTRA) lead by FNZ (i.e., mirroring Richard et al. 2024, Roberts & Webber 2025), provide high-resolution insights into the direct impacts of various fishing fleets on survival (as well as other demographic rates, e.g., breeding probability) of this species and guide future targeted efforts to mitigate bycatch.

Outputs:

Through the proposed research approach, updated, robust, and accurate abundance data for both breeding sites of Southern Buller's Albatross, as well as accurate demographic data for the Snares Islands would be obtained that would reduce uncertainty surrounding current fishing-related impacts to the species, and provide insights into population-specific risks and from which fleet risks originate in order to guide targeted mitigation efforts.

Indicative Research Cost: \$65,000 per annum for Year 1 and Year 2, and \$90,000 for Year 3.

Cost Recovery: F(CR) Item 3 (50% Industry, 50% Crown)

Cost Recovery Rationale:

This project supports the management of a known adverse effect of commercial fishing on a protected species. It will deliver the population and demographic information required to quantify fisheries-related impacts and to ensure that management responses are appropriately targeted and effective.

This project delivers on CSP Objectives C (*The extent of known direct adverse effects of commercial fishing on protected species is adequately understood*) and 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*) by providing updated estimates of population size and key demographic parameters (including adult survival) for Southern Buller's albatross, a species identified as at very high risk from commercial fishing. This information is required in order to inform detailed risk assessment and/or fisheries management. Addressing this objective will involve the collection of data on population trend, demographic parameters and at-sea foraging information for medium to high risk protected species.

The CSP Seabird Medium Term Research Plan and NPOA–Seabirds require robust population inputs (including abundance and survival) to quantify fisheries risk and to assess whether management actions are reducing that risk over time. This project provides those required inputs for both breeding populations, reducing uncertainty in current risk estimates and enabling population-specific assessment of fishing-related impacts.

The outputs will be used directly within established fisheries management processes, including:

- Updating seabird risk assessments (e.g., SEFRA and MTRA), which are used by DOC and Fisheries New Zealand to prioritise management responses under NPOA–Seabirds; and
- Supporting the development, targeting, and review of mitigation measures and best-practice guidance (e.g., mitigation standards, Protected Species Risk Management Plans, and fleet liaison activities) designed to reduce seabird captures.

In this way, the project provides the population evidence required to both target and evaluate mitigation actions, by:

- Identifying where fishing-related mortality is contributing to population-level risk; and
- Providing the baseline needed to determine whether implemented mitigation measures are effective in reducing that risk.

Fish stocks: BAR 4, BAR5, HOK1, LIN5, LIN6, ORH3B, SCI4, SCI6A, SQU1T, SQU6T, STN1, SWA4, SWO1

References:

Edwards CTT, Peatman T, Goad D & Webber DN. 2023. Update to the risk assessment for New Zealand seabirds. New Zealand Aquatic Environment and Biodiversity Report 314. Fisheries New Zealand, Wellington, New Zealand.

Fischer JH, et al. 2026. A standardised framework for processing abundance data of albatrosses and petrels and modelling their multi-decadal trends. Ninth Meeting of the Population and Conservation Status Working Group, Agreement on the Conservation of Albatrosses and Petrels, Swakopmund, Namibia.

Frost PGH, Baker GB, Fischer JH & Sagar PM. 2025. Population survey of Southern Buller's Albatross *Thalassarche bulleri bulleri* on the Solander Islands / Hautere, March 2024. Marine Ornithology 53: 361-371.

Richard Y, Berkenbusch K, Crawford E, Tornquist M, Walker K, Elliott G & Tremblay-Boyer L. 2024. Antipodean Albatross multi-threat risk assessment. New Zealand Aquatic Environment and Biodiversity report 332. Fisheries New Zealand, Wellington, New Zealand.

Roberts JO & Webber DN. Spatial risk assessment of threats to yellow-eyed penguin/Hoiho (*Megadyptes antipodes*). New Zealand Aquatic Environment and Biodiversity report 370. Fisheries New Zealand, Wellington, New Zealand.

Sagar P, Rexer-Huber K, Schultz H, Simister K, Thompson D, Parker G. 2025. Population studies of southern Buller's albatrosses at Tini Heke | The Snares Islands 2025. Conservation Services Programme, Department of Conservation, Wellington, New Zealand.

Sagar P, Rexer-Huber K, Thompson D, Parker G. 2024. Population studies of southern Buller's albatrosses at Tini Heke / The Snares Islands and Hautere / Solander Islands. Conservation Services Programme, Department of Conservation, Wellington, New Zealand.

Sagar P, Rexer-Huber K, Waipoua TA, Thompson D, Parker G. In prep. Population studies of southern Buller's albatrosses at Tini Heke | The Snares Islands 2026. Conservation Services Programme, Department of Conservation, Wellington, New Zealand.

Sagar PM & Stahl J-C. 2005. Increases in the numbers of breeding pairs in two populations of Buller's Albatross (*Thalassarche bulleri bulleri*). Emu – Austral Ornithology 105: 49-55.

2.10. POP2026-02 New Zealand sea lion Auckland Island pup count

Start Date: 1 July 2026

Completion Date: 30 June 2029

Guiding Objectives: CSP Objective E; Marine Mammal Medium Term Research Plan, New Zealand sea lion Threat Management Plan, and New Zealand sea lion Action Plan

Project Objectives:

1. To estimate the number of New Zealand sea lion pups born at the Auckland Islands as a proxy for the number of breeding females in the population.
2. To mark a subset of pups for assessment of survival, distribution, and breeding success.
3. To collect high-quality resight data from marked animals to be used for modelling key demographic parameters of New Zealand sea lions breeding at the Auckland Islands.

The New Zealand sea lion (*Phocarctos hookeri*), one of the world's rarest sea lions, is currently classed as Nationally Endangered, with a total population estimate of 10,000 individuals breeding mostly on the subantarctic Auckland Islands (Roberts & Edwards 2023, Lundquist et al. 2025).

Commercial trawl mortality is the single greatest direct human threat to the recovery of Auckland Islands sea lions (Roberts & Doonan 2016). New Zealand sea lions are incidentally bycaught in commercial trawl fishing operations in SQU6T (Johnston & Childerhouse 2022, FNZ 2024).

Approximately 70% of New Zealand sea lions breed at the Auckland Islands, where population data have been collected since the mid-1990s, including estimates of pup production and resighting of marked animals. Since 2001 there has been a considerable decline in pup production at the Auckland Islands (Chilvers et al. 2007, Manno & Whyte 2025).

The New Zealand sea lion Threat Management Plan, first implemented in 2017, established a range of research and management actions to address the threats to the recovery of this species (DOC & MPI 2017). A number of potential drivers of sea lion population decline at the Auckland Islands have been identified, including (though not limited to): the direct/indirect effects of commercial fishing; predation by great white sharks (*Carcharodon carcharias*); climate variation driven nutritional stress; disease-related mortality of pups; conspecific aggression; and the effects of low genetic diversity (Robertson & Chilvers 2011, Roberts & Doonan 2016). Out of this list, the sole human-mediated driver is commercial fishing, which can impact this population through direct bycatch effects and indirect effects of resource competition (Robertson & Chilvers 2011, Roberts 2016).

A literature review to identify potential indirect effects of commercial fishing on the Auckland Islands population as part of CSP project POP2010-01 highlighted several key information gaps that prevent a full understanding of any such potential indirect effects, including time series data of population dynamics, as collected in this project (POP2026-02) (Bowen 2012).

CSP project POP2012-02 analysed population data to determine the key demographic factors driving the observed decline of New Zealand sea lions at the Auckland Islands. This project found that low pupping rates, a declining trend in cohort survival to age 2 and low adult survival may explain declining pup counts in one studied population (Roberts et al. 2014).

Due to its polygynous breeding practice, this species is especially reliant on particular individual animals, namely breeding adult females, for its persistence and the foraging area of lactating Auckland Islands New Zealand sea lions overlaps temporally and spatially with fishing effort in SQU6T (Chilvers et al. 2005).

Detailed information on the age and sex structure of the Auckland Islands New Zealand sea lion colonies is vital to assessing direct and indirect risks to the population from commercial fisheries. High quality information on the age and sex structure of this population is foundational to determining how many animals of each age and sex class can be removed by commercial fishing before the population collapses irretrievably.

Research Approach:

This project will undertake ground-based pup counts at Enderby Island, Dundas Island and Figure of Eight Island annually in December and January.

Researchers will:

- Undertake ground-based pup counts and mark-recapture, supplemented by drone imagery or other methods where possible,
- Flipper tag and microchip a subset of pups following established protocols,
- Collect high quality resight data from animals marked in previous years (Chilvers 2012; Childerhouse 2012), and
- Clean the data and upload annually to a shared demographic database for use in statistical analysis.

This multi-year marking and resighting programme reduces uncertainty when modelling impacts of fisheries bycatch scenarios by providing high-quality information on the number of breeding females remaining in this declining population.

Outputs:

The information gathered from the long-term marking and monitoring programme of New Zealand sea lions at the Auckland Islands will be used in the development of a population management plan under the Wildlife Act 1953 and the Marine Mammals Protection Act 1978.

This marking and resighting programme gathers the basic information required to model the sex and age structure of animals breeding at the Auckland Islands, which allows an understanding of the vulnerability of these colonies to bycatch in commercial trawl fisheries.

Indicative Research Cost: \$150,000 per annum

Cost Recovery: F(CR) Item 2 (90% Industry, 10% Crown)

Cost Recovery Rationale:

This project delivers on CSP 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*) and supports the New Zealand sea lion Threat Management Plan by providing annual estimates of pup production and demographic parameters for the Auckland Islands population. This information is required in order to inform detailed risk assessment and/or fisheries management. Addressing this objective will involve the collection of

data on population trend, demographic parameters and at-sea foraging information for medium to high risk protected species.

Commercial trawl fisheries are a known and significant human-mediated source of mortality for this population, particularly affecting breeding females. Under the Threat Management Plan, management of this risk relies on understanding whether fisheries-related mortality is within levels that allow population recovery. This requires robust, up-to-date information on pup production and population structure.

The project provides the core population inputs used to assess whether current fishing-related mortality is sustainable and whether management measures are effective. In particular, the outputs are used to:

- Estimate the number of breeding females and track population trend, which determines the population's capacity to replace animals lost to fisheries mortality;
- Parameterise population models used to assess the impact of different fisheries mortality scenarios; and
- Evaluate whether changes in fisheries management and mitigation (e.g. trawl mitigation measures or operational settings) correspond to measurable improvements in population trajectory.

In this way, the project directly supports fisheries management actions to avoid or reduce fishing-related mortality by enabling:

- Setting and reviewing management responses where fishing mortality exceeds sustainable levels; and
- Assessing whether implemented mitigation measures are sufficient to support population recovery.

Given that these outputs are required to manage a known adverse effect of commercial fishing on this population and are used to inform and evaluate fisheries management actions to reduce that effect, it is appropriate that the costs of this work are largely attributed to the industry contributing to that risk.

Fish stocks: SQU6T

References:

Bowen WD (2012) A review of evidence for indirect effects of commercial fishing on New Zealand sea lions (*Phocarctos hookeri*) breeding on the Auckland Islands. Report prepared for the Conservation Services Programme, Department of Conservation, Wellington, New Zealand. 41 p.

Campbell RA, Chilvers BL, Childerhouse S & Gales NJ (2006) Conservation management issues and status of the New Zealand (*Phocarctos hookeri*) and Australian (*Neophoca cinerea*) sea lions. In: Trites AW, Atkinson S, DeMaster DP, Fritz LW, Gelatt LD, Rea LD, Wynne KM eds. Sea lions of the world. Alaska Sea Grant Alaska College Prog.

Childerhouse SJ (2012) Methodology for CSP Project 4426 New Zealand sea lion ground component 2012/13. Report prepared for the Conservation Services Programme, Department of Conservation, Wellington, New Zealand. 8 p.

Chilvers BL (2012) Research to assess the demographic parameters of New Zealand sea lions, Auckland Islands 2011/12. Report prepared for the Conservation Services Programme, Department of Conservation, Wellington, New Zealand. 11 p.

Chilvers BL, Wilkinson IS & Childerhouse S (2007) New Zealand sea lion, *Phocarctos hookeri*, pup production—1995 to 2006. New Zealand Journal of Marine and Freshwater Research, 41:2, 205-213.

Chilvers BL, Wilkinson IS, Duignan PJ & Gemmell NJ. 2005. Summer foraging areas for lactating New Zealand sea

lions *Phocarctos hookeri*. Marine Ecology Progress Series vol. 304: 235–247.

Department of Conservation and Ministry for Primary Industries. 2017. New Zealand sea lion/rāpoka Threat Management Plan 2017 – 2022. 17 p.

Fisheries New Zealand. 2024. Fisheries and the New Zealand sea lion. Updated 13/05/2024. Fisheries and the New Zealand sea lion | NZ Government.

Johnston O, Childerhouse S. 2022. INT2020-02: Identification of marine mammals captured in New Zealand fisheries 2020-21. Report prepared for the Conservation Services Programme, Department of Conservation, Wellington, New Zealand. Cawthron Report No. 3772. 18 p.

Lundquist D, Boren L, Childerhouse S, Constantine R, van Helden A, Hitchmough R, Michel P, Rayment W and Baker CS. 2025. Conservation status of marine mammals in Aotearoa New Zealand, 2024. Wellington: Department of Conservation. New Zealand Threat Classification Series 48. 25 p.

Manno K, Whyte J. 2025. New Zealand sea lion/pakake/whakahao field research report Auckland Islands 2024/25. Dunedin: Department of Conservation. 29 p.

Roberts J & Doonan I. 2016. Quantitative Risk Assessment of Threats to New Zealand sea lions. New Zealand Aquatic and Environmental Biodiversity Report No. 166. 111 p.

Roberts J, Edwards CTT. 2023. Population size estimate of the New Zealand sea lion (*Phocarctos hookeri*) for 2022. New Zealand Aquatic and Environmental Biodiversity Report No. 320. 33 p.

Roberts J, Fu D, Doonan I & Francis C. 2014. NZ sea lion: demographic assessment of the causes of decline at the Auckland Islands. Demographic model options: demographic assessment. Report prepared by NIWA for the Conservation Services Programme, Department of Conservation, Wellington, New Zealand. 142 p.

Robertson BC, Chilvers BL. 2011. The population decline of the New Zealand sea lion, *Phocarctos hookeri*. Mammal Review 41(4): 253-275.

2.11. POP2026-03 Westland petrel population estimate

Start Date: 1 July 2026

Completion Date: 30 June 2027

Guiding Objectives: CSP Objectives C and E, CSP Seabird Medium Term Research Plan, Agreement on the Conservation of Albatrosses and Petrels (ACAP), NPOA Seabirds

Project Objective:

To provide a robust, updated estimate of Westland petrel abundance.

Rationale:

Westland petrels (*Procellaria westlandica*) are the second most at-risk petrel species from NZ domestic fisheries according to the most recent SEFRA (risk ratio = 0.38 [0.17-0.88], i.e., High Risk; Richard et al. 2020, Edwards et al. 2023). Westland petrels breed at a single area on the West Coast near Punakaiki, where the population is distributed among ~30 sub-colonies and the total abundance has been estimated at ~6,200 breeding pairs in 2019 through POP2018-05 (Waugh et al. 2020).

Compared to previous estimates, this estimate may indicate a potential population increase, but substantial uncertainty remains (Fischer et al. 2026). Recent work highlighted high levels of Westland petrel bycatch in bottom longline fisheries targeting ling, and illustrated potential mismatches between seabird-fishery overlap, recent bycatch records, and fleet-specific risks (Waipoua et al. 2026).

The 2019 estimate is now close to being out of date and risk ratio estimates obtained through SEFRA are highly susceptible to population size estimates. Consequently, to accomplish CSP objectives C and E, robust abundance data for Westland petrels is required to understand impacts of fishing-related mortalities. Information from the proposed research will be presented to, and reviewed by, the CSP Technical Working Group and will be used to inform targeted industry best practice guidance designed to avoid Westland Petrel captures.

Research Approach:

The previous abundance estimate for Westland petrels produced through POP2018-05 was the most rigorous and accurate of all estimates for this species (Waugh et al. 2020, Fischer et al. 2026), and it is proposed that the POP2018-05 methodology is repeated to obtain an updated estimate. Specifically, during the incubation period a combination of the following steps will be used to estimate Westland petrel abundance in both breeding pairs and mature individuals:

1. Re-mapping the boundaries of all accessible sub-colonies, jointly comprising of ~95% of the population (Waugh et al. 2020, Wood & Otley 2013), to obtain an updated estimate of the surface area of overall breeding habitat,
2. (Semi-) random transects at each of these sub-colonies to estimate local burrow density,
3. Occupancy assessments through burrow scopes at each sub-colony to obtain a local ratio of apparently occupied sites vs. empty nest sites,
4. Close monitoring of the accessible study burrows as the study area to obtain an accurate ratio of apparently occupied sites vs. breeding pairs (i.e., to account for non-breeders), and

5. Regular capture-recapture monitoring of individuals in study burrows within the study area to obtain an accurate estimate of breeding probability, enabling the transformation of breeding pairs to mature individuals (c.f., Edwards et al. 2023, Fischer et al. 2026).

Close attention will be given to re-mapping areas determined as impacted by windfall in 2019 (Waugh et al. 2020) and evaluating if these areas are still unsuitable for breeding. If time allows, efforts will be dedicated towards obtaining 3D-surface area estimates of the sub-colonies, rather than the planar surface area estimates used in Waugh et al. (2020) and ideally, if such 3D-surface estimates would be obtained, adjustments to the 2019 estimate will be attempted to further aid comparability among estimates and reduce uncertainty (Parker & Rexer-Huber et al. 2020, Fischer et al. 2026).

Outputs:

Through the proposed research approach, an updated, robust, and accurate abundance estimate for Westland petrels would be obtained that would 1) provide insights into population trend of the species and 2) reduce uncertainty surrounding current fishing-related impacts to the species and from which fleet risks, if any, originate in order to guide targeted mitigation efforts.

Indicative Research Cost: \$20,000 per annum

Cost Recovery: F(CR) Item 3 (50% Industry, 50% Crown)

Cost Recovery Rationale:

This project supports CSP Objectives C (*The extent of known direct adverse effects of commercial fishing on protected species is adequately understood*) and 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*) by providing an updated, robust estimate of Westland petrel abundance, a key population input needed to interpret fisheries-related mortality and assess population-level impact. This information is required in order to inform detailed risk assessment and/or fisheries management. Addressing this objective will involve the collection of data on population trend, demographic parameters and at-sea foraging information for medium to high risk protected species.

The CSP Seabird Medium Term Research Plan is explicit that robust population inputs — particularly abundance (number of breeding pairs) — are required to estimate fisheries risk and to measure change in risk over time in response to fisheries management. For Westland petrel, the current population estimate is approaching the point where it no longer provides sufficient confidence for management decisions that rely on population status and trend.

The updated abundance estimate will be used directly to support fisheries-bycatch management under NPOA–Seabirds, by improving the population baseline against which bycatch information and management settings are assessed. In practice, the output enables decision-makers to:

- Assess whether observed or modelled fisheries-related mortality is likely to be sustainable at the population level, and therefore whether additional management response is required;
- Prioritise where mitigation effort and operational change should be focused, by improving confidence in risk estimates that guide management attention; and
- Evaluate whether existing bycatch mitigation and management settings are adequate, by enabling trend assessment against expected outcomes under current settings.

Because this project provides the population evidence needed to target and review bycatch management actions intended to reduce fishing-related mortality of Westland petrels, and the need for this work arises from a fisheries-bycatch risk context, it is appropriate that costs are shared between the Crown and the fishing industry.

Fish stocks: HAK7, HOK1, LIN3, LIN4, LIN7, SCI3, STN1, SWO1

References:

Edwards CTT, Peatman T, Goad D & Webber DN. 2023. Update to the risk assessment for New Zealand seabirds. New Zealand Aquatic Environment and Biodiversity Report 314. Fisheries New Zealand, Wellington, New Zealand.

Fischer JH, et al. 2026. A standardised framework for processing abundance data of albatrosses and petrels and modelling their multi-decadal trends. Ninth Meeting of the Population and Conservation Status Working Group, Agreement on the Conservation of Albatrosses and Petrels, Swakopmund, Namibia.

Parker GC & Rexer-Huber K. 2020b. Guidelines for designing population surveys of burrowing petrels. Agreement for the Conservation of Albatrosses and Petrels.

Richard Y, Abraham ER & 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 237. Fisheries New Zealand, Wellington, New Zealand.

Waipoua TA, et al. 2026. INT2024-06: Westland Petrel overlap with domestic fishing effort. Conservation Services Programme, Department of Conservation, Wellington, New Zealand.

Waugh SM, et al. 2020. Trends in density, abundance, and response to storm damage for Westland Petrels *Procellaria westlandica*, 2007-2019. Marine Ornithology 48: 273-281.

Wood GC & Otley HM. 2013. An assessment of the breeding range, colony sizes and population of the Westland Petrel (*Procellaria westlandica*). New Zealand Journal of Zoology 40: 186-195.

2.12. POP2026-04 Salvin's albatross Western Chain re-survey and tracking**Start Date:** 1 July 2026**Completion Date:** 30 June 2027**Guiding Objectives:** CSP Objective C and E, CSP Seabird Medium Term Research Plan, ACAP, NPOA seabirds**Project Objectives:**

1. To estimate the population size of Salvin's Albatross on the Western Chain.
2. To quantify the spatial distribution of adult breeding Salvin's Albatross from the Western Chain.

Rationale:

Salvin's Albatross (*Thalassarche salvini*) is the second most at-risk species according to the latest SEFRA (risk ratio = 0.69 [0.35-1.69], i.e., High Risk; Richard et al. 2020, Edwards et al. 2023). The largest population of this species at the Bounty Islands (representing ~97% of the overall population) may potentially be stabilizing around ~47,000 breeding pairs (Mattern 2022, 2024a,b, Thompson 2025, Fischer et al. 2026). However, the decadal Western Chain survey in 2025 (POP2025-05) returned a concerning low estimate (415 breeding pairs on Toru islet; Parker et al. in prep., Fischer et al. 2026). This estimate represents a 37% reduction compared to the previous survey in 2014 (Sagar et al. 2014, Baker et al. 2015, Fischer et al. 2026).

The Western Chain population is dwarfed by the Bounty Island population, but this apparent decline is still concerning, and a repeat survey in 2026 would be required to confirm if the estimate represents a population decline or a temporal anomaly.

Additionally, previous low-resolution tracking indicated that Western Chain individuals may spatially segregate from Bounty Island individuals, resulting in interactions with different fishing fleets (predominantly squid trawl for Western Chain birds vs. hoki and scampi trawl for Bounty Island birds; Thompson et al. 2014), which could explain the differing population trajectories. As such, to accomplish CSP objectives C and E, accurate, up-to-date abundance and spatial data to better understand fishing-related risks to this population is required. Information from the proposed research will be presented to, and reviewed by, the CSP Technical Working Group and will be used to inform targeted industry best practice guidance designed to avoid Salvin's albatross captures.

Research Approach:

Proposed is a one-year project, following up from POP2025-05, to provide a second estimate of the Western Chain Salvin's albatross population after the estimate derived from Toru islet in November 2025 (Parker et al. in prep). Such a second population estimate would follow the approach used for previous population estimates (Sagar et al. 2014, Parker et al. in prep.) and be completed through ground counts during the incubation period (i.e., Oct-Nov 2026), potentially with the support from drones (but fissures and caves on the Western Chain make drone use more challenging compared to the Bounty Islands).

Count efforts will be focussed on Toru islet (representing 67% of the Western Chain population; Thompson 2025), and if conditions allow, counts will also target Rima islet (33%). All counts will be paired with targeted efforts to confirm nest contents to express the count in breeding pairs (rather than apparently occupied sites). In addition to obtaining an updated population estimate, under the proposed research, 10 high-resolution satellite tracking devices would be deployed on adult breeding Salvin's Albatrosses on Toru Islet. These devices will provide unprecedented high-resolution insights into the spatial distribution of Western Chain Salvin's

albatrosses, building on the existing low-resolution insights into the spatial segregation of the two Salvin's albatross populations (Thompson et al. 2014), which may be the cause for the potentially diverging population trends.

Finally, the ground counts will also enable the banding and resighting of previously banded birds, adding to the existing demographic dataset. Updated abundance and spatial distribution obtained through this project will allow for updated and more detailed evaluation of the impacts of bycatch in New Zealand fisheries on this highly vulnerable species.

Outputs:

Through the proposed research approach, updated, robust, and accurate spatial and abundance data for Western Chain Salvin's albatross would be obtained that would reduce uncertainty surrounding current fishing-related impacts to the species and provide insights into population-specific risks and which fleet risks, if any, originate, in order to guide targeted mitigation efforts.

Indicative Research Cost: \$70,000 per annum

Cost Recovery: F(CR) Item 3 (50% Industry, 50% Crown)

Cost Recovery Rationale:

This project delivers on CSP Objectives C (*The extent of known direct adverse effects of commercial fishing on protected species is adequately understood*) and 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*) by providing updated population size and high-resolution spatial distribution data for the Western Chain population of Salvin's albatross, a species identified as at high risk from commercial fishing. This information is required in order to inform detailed risk assessment and/or fisheries management. Addressing this objective will involve the collection of data on population trend, demographic parameters and at-sea foraging information for medium to high risk protected species.

The key management uncertainty is whether the Western Chain population is declining and whether it interacts with different fisheries than the much larger Bounty Islands population. Current risk assessments are dominated by data from the Bounty Islands, limiting confidence in whether fisheries impacts on the Western Chain population are appropriately understood or managed.

The CSP Seabird Medium Term Research Plan identifies population size and spatial distribution as core inputs required to assess fisheries risk and to evaluate the effectiveness of management actions. This project provides those specific inputs for the Western Chain population.

The outputs will be used directly within fisheries management processes under NPOA–Seabirds to:

- Determine whether fisheries-related mortality for the Western Chain population is likely to be sustainable, and whether additional management response is required;
- Identify which fleets and areas pose the greatest risk to this population, enabling targeted mitigation measures to reduce bycatch; and
- Assess whether existing mitigation and management settings are appropriately targeted, or whether changes are needed to reduce fishing-related mortality.

By resolving uncertainty about population status and fleet-specific interactions, the project enables management actions to be targeted to the fisheries and operational contexts where they will be most effective in reducing bycatch.

Given that this information is required to assess and manage a known adverse effect of commercial fishing on this population, it is appropriate that the costs are shared between the Crown and the fishing industry.

Fish stocks: BAR1, BAR4, BAR5, GUR3, HOK1, JMA3, LIN3, LIN4, LIN5, LIN6, LIN7, OEO3A, OEO4, ORH3B, SBW1, SBW6B, SCI43A, SCI4A, SQU1T, SWA3, SWA4

References:

Baker GB, Jensz K & Sagar P. 2015. 2014 Aerial survey of Salvin's albatross at The Snares, Western Chain. Conservation Services Programme, Department of Conservation, Wellington, New Zealand.

Edwards CTT, Peatman T, Goad D & Webber DN. 2023. Update to the risk assessment for New Zealand seabirds. New Zealand Aquatic Environment and Biodiversity Report 314. Fisheries New Zealand, Wellington, New Zealand.

Fischer JH, et al. 2026. A standardised framework for processing abundance data of albatrosses and petrels and modelling their multi-decadal trends. Ninth Meeting of the Population and Conservation Status Working Group, Agreement on the Conservation of Albatrosses and Petrels, Swakopmund, Namibia.

Mattern T. 2022. Tawaki Project: Bounty-Antipodes expedition 2022. Dunedin, New Zealand.

Mattern T. 2024a. Tawaki Project: Antipodes-Bounty expedition 2023/24. Dunedin, New Zealand.

Mattern T. 2024b. Tawaki Project: Bounty-Antipodes expedition 2024. Dunedin, New Zealand.

Parker GC, et al. In preparation. POP2025-05: Western Chain Salvin's Albatross survey. Conservation Services Programme, Wellington, New Zealand.

Richard Y, Abraham ER & 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 237. Fisheries New Zealand, Wellington, New Zealand.

Sagar PM, Charteris MR & Scofield RP. 2014. Salvin's albatross population size and survival at the Snares Western Chain. Conservation Services Programme, Department of Conservation, Wellington, New Zealand.

Thompson D, Sagar P, Torres L & Charteris M. 2014. Salvin's Albatross at the Bounty Islands: at-sea distribution. Conservation Services Programme, Department of Conservation, Wellington, New Zealand.

Thompson T. 2025. Advancing remote monitoring of albatrosses through emerging technologies to inform conservation. MSc thesis. University of Otago, Dunedin, New Zealand.

3 Mitigation Projects

NOTE: This multi-year project was consulted on in 2024/25 and is included here for completeness.

3.1. MIT2024-01 Protected Species Liaison Programme

Start Date: 1 July 2024

Completion Date: 30 June 2027

Guiding Objectives: CSP Objective A and B; CSP Seabird plan; National Plan of Action – Seabirds, National Plan of Action – Sharks.

Project Objectives:

1. To maintain liaison capacity across inshore fleets around the country including surface longline, bottom longline, trawl, set net and purse seine.
2. To prioritise liaison officer activities based on risk, focusing on protected species capture rate outputs and confidence in skippers' ability to implement increased mitigation during high-risk periods.
3. To reduce the risk of protected species bycatch by encouraging vessel operators to meet best-practice bycatch mitigation.
4. To deliver on the goals and objectives of relevant cross-government plans (NPOAs, TMPs, etc).

Rationale:

Over the last decade, the Liaison Programme has expanded and taken on a pivotal role as the interface between skippers, government, and researchers, working to support and educate fishers on best-practice mitigation. To effectively reduce the risk of interactions with protected species, it is important for vessels to be using best-practice mitigation and take all necessary steps, both regulatory and non-regulatory, to avoid interactions. DOC Liaison Programme work has found ongoing face-to-face engagement and dissemination of bycatch mitigation advice to be an effective way to influence behavioural change on the water.

Research Approach:

Building on the work of the previous liaison project, MIT2021-01, the Liaison Programme will continue work encouraging vessel operators to meet best-practice bycatch mitigation. The review and development of Protected Species Risk Management Plans (PSRMPs) as well as following up on protected species trigger events will continue to be a core function, however with priority inshore and HMS fleets mostly covered, the programme will minimise expansion and focus efforts on developing better risk prioritisation and efficient response. Furthermore, monitoring specifications of mitigation in use is critical for identifying contributing factors to protected species capture events. In addition to work underway with the FNZ cameras team, an engagement pathway under INT2025-05 will be utilised to inform on mitigation specifications in use which will then guide Liaison Programme follow-up activities.

Improved protected species capture verification with the rollout of electronic monitoring means that Liaison Officer engagement can also focus less on inputs (i.e. PSRMPs) and more on vessel-specific outputs (i.e. capture rates). Work between agencies is needed to allow for effective Liaison Programme operations and to overcome

constraints in reporting capability, efficient responses, and feedback loops. Work over the next three years is expected to implement a more effective database for management, utilise and feed back into electronic monitoring data collection, create improved risk response protocols, increase programme visibility with quota holders and ensure finer-scale operational oversight of the programme through the support of a dedicated Liaison Coordinator.

To keep costs down, the project will look to pass lower-risk harbour net vessels onto Seafood New Zealand as well as start to reduce the level of bycatch mitigation materials supplied to the fleets. There will be a regular review of the Liaison Programme to assess project delivery, priorities, scope, and costs.

Outputs:

1. Active use of the new database to input LO vessel visits, trigger responses, mitigation resources and training provided. Historical data is also carried over to the new system.
2. Development of risk response protocols.
3. Active response to priority bycatch events.
4. Regular review and updating of PSRMPs.
5. Ongoing education of priority fleets on protected species issues and mitigations.
6. Annual reports detailing progress and any developments in the fleet or operations.

Indicative Research Cost: \$250,000 per annum. DOC is contributing additional funds to support Liaison Programme operations and data management to the sum of \$50,000 for 2024/25 through to 2026/27.

Cost Recovery: F(CR) Item 4 (100% Industry)

Cost Recovery Rationale:

The outputs of this project will support the uptake of best practice protected species bycatch mitigation in inshore and HMS commercial fleets by direct engagement with operators. Duties include follow-up on protected species bycatch events and providing advice to avoid and/or mitigate risk to further protected species captures.

Fish stocks:

Fishery	Indicative Cost	Fish Stocks
Surface Longline	\$62,000	BIG1, STN1, SWO1, TOR1
Bottom Longline	\$62,000	BNS1, BNS2, BNS3, BNS7, BNS8, HPB1, HPB2, HPB3, HPB4, HPB5, HPB7, HPB8, LIN1, LIN2, SNA1
Inshore Trawl	\$62,000	BAR1, BAR5, BAR7, ELE3, FLA2, FLA3, FLA7, GUR1, GUR2, GUR3, GUR7, GUR8, JDO1, JDO7, RCO3, RSK3, SCH7, SCH8, SNA1, SNA7, SNA8, SPO3, SPO8, STA3, STA5, STA7, TAR1, TAR2, TAR3, TAR7, TAR8, TRE1, TRE7
Setnet	\$62,000	BUT2, BUT5, BUT7, ELE3, FLA1, FLA2, FLA3, FLA7, GMU1, HPB3, KAH1, MOK1, SCH2, SCH3, SCH5, SCH8, SPO1, SPO3, TAR3, YEM1

Purse seine	\$2,000	EMA1, JMA1, KAH1, PIL1, SKJ, TRE1
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NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

3.2. MIT2025-01 Improving mitigation data streams to assess bycatch mitigation effectiveness in inshore and HMS fisheries

Start Date: 1 July 2025

Completion Date: 30 June 2027

Guiding Objectives: CSP Objective A; National Plan of Action - Seabirds

Project Objectives:

The overall objective is to enable robust, effective and efficient ongoing assessment of seabird bycatch mitigation effectiveness in inshore and HMS fisheries. This will be achieved through the following specific objectives:

1. Identify key parameters for data collection on seabird bycatch mitigation effectiveness going forwards.
2. Provide recommendations for potential changes to current data collection aspects to target key parameters.
3. Identify any additional potential tools or programmes to supplement existing data channels.

Rationale:

To achieve the overarching objectives of the National Plan of Action – Seabirds and the CSP vision of continual reduction in bycatch towards zero it is vital to collect data that allows for assessment of the effectiveness of seabird bycatch so that continual improvements can be sought and demonstrated.

Over recent years there have been considerable changes in data collected relevant to assessing seabird bycatch mitigation effectiveness in inshore and HMS fisheries. There have been improvements to fisher data reporting, widescale rollout of verified camera monitoring, expanded liaison activities and changes in observer coverage. This project will seek to find ways to best use, and improve, these new data channels.

Research Approach:

This desk-based project will seek to better assess mitigation effectiveness in inshore fisheries through data channels other than observer-collected data, including ER, Liaison Programme, and EM data.

The initial phase of this project will be to review and characterise current data to assess the utility in quantifying mitigation effectiveness.

The second phase will review key parameters for data collection going forwards, make recommendations for potential changes to current data collection aspects to target those parameters and identify any additional tools or programmes to supplement existing data channels.

This holistic review will help ensure that the full range of data streams are utilised in the most efficient and effective way going forward to be able to assess and monitor the effectiveness of seabird bycatch mitigation as we continue to strive towards our zero-bycatch goal.

Outputs:

1. Recommendations for potential changes to current or additional data collection avenues.
2. Technical report on the work undertaken and results found.

Indicative Research Cost: \$30,000 per annum

Cost Recovery: F(CR) Item 4 (100% Industry)

Cost Recovery Rationale:

Inshore bottom longline and HMS fisheries are required to use a range of mitigation measures to reduce protected species bycatch, and non-statutory mitigation options have been identified for inshore trawl. However, bycatch of seabirds and other protected species continues to be a concern in these fisheries, and more work is required for ongoing reductions in line with statutory and policy objectives. Routine collection of data to fully assess the relative effectiveness of different bycatch mitigation options is key to driving such improved bycatch mitigation management. This project leverages the recent introduction of cameras on boats to identify the key parameters for data collection going forwards and identify how to change current protocols and what additional potential tools or programmes are required to supplement existing data collection, to inform ongoing management actions to further reduce bycatch through regulatory or non-regulatory joint agency processes (e.g. NPOAs, TMPs).

Fish stocks: BAR1, BAR5, BAR7, BIG1, BNS1, BNS2, BNS3, BNS7, BNS8, BUT2, BUT5, BUT7, ELE3, EMA1, FLA1, FLA2, FLA3, FLA7, GMU1, GUR1, GUR2, GUR3, GUR7, GUR8, HPB1, HPB2, HPB3, HPB4, HPB5, HPB7, HPB8, JDO1, JDO7, KAH1, LIN1, LIN2, MOK1, PIL1, RCO3, RSK3, SCH2, SCH3, SCH5, SCH7, SCH8, SNA1, SNA2, SNA7, SNA8, SPO1, SPO3, SPO8, STA3, STA5, STA7, STN1, SWO1, TAR1, TAR2, TAR3, TAR7, TAR8, TOR1, TRE1, TRE7, YEM1

NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

3.3. MIT2025-02 Seabird SMART Workshops

Start Date: 1 July 2025

Completion Date: 30 June 2028

Guiding Objectives: CSP Objective A; National Plan of Action- Seabirds

Project Objective:

To continue to provide Seabird SMART Workshops for inshore and HMS operators.

Rationale:

Between 2012 and 2017 Southern Seabirds held Seabird SMART Workshops to educate inshore commercial fishers about the issue of fisheries-related seabird mortality. The workshops also helped motivate fishers to share their own knowledge about what proven or new methods they use to keep seabirds away from fishing vessels and inspire them to make further changes on their boats. Previous social science research projects on the drivers of mitigation uptake in inshore and HMS fisheries have highlighted the importance of these workshops to fishers.

The project will provide support to continue the roll out of these workshops, both to new participants and provide opportunities for periodic refreshers as well as sharing of knowledge between new and experienced operators.

Research Approach:

As with the previous workshops, the overarching objective is to strengthen an attitude of 'commitment beyond compliance' amongst fishers and help them appreciate the critical role they have in conserving New Zealand seabirds.

Key success factors from earlier workshops include using a professional trainer to design the workshops, a skilled facilitator to oversee and lead the workshop, an independent and neutral co-facilitator that fishers know and respect and having the quota holders and fishing companies championing the workshops. Giveaways to anchor the workshop learnings and to share with crew will be part of the workshop collateral (such things as stickers, posters, caps, key rings have been used in the past).

The workshops will include new information and perspectives that deepen participants appreciation of seabirds and mitigation. Seabird SMART fishers from other regions/fisheries may be included where feasible, to act as peer-to-peer inspiration. There will also be a hands-on aspect to the workshops to add an experiential element. The workshops will encourage fishers to adopt a mindset that any annoyances and problems with current mitigation measures are a problem to solve, not an obstacle to adoption.

The half day workshops will be in the local ports and kept to less than twenty participants to keep them personal and relevant to everyone.

DOC Liaison Officers will take part in the workshops and help seek feedback to refine and improve content for following workshops. DOC, MPI and Seafood NZ will agree on priority fisheries for workshop roll-out.

Outputs:

1. Agreed number of workshops held.
2. Annual evaluation reports on the workshops undertaken, attendance, feedback and any recommendations for improvements to continued delivery of future workshops.

Indicative Research Cost: \$20,000 per annum

Cost Recovery: F(CR) Item 4 (100% Industry)

Cost Recovery Rationale:

The outputs of this project will support the uptake of best practice seabird bycatch mitigation in inshore and HMS commercial fleets by direct engagement with operators through workshops. Topics addressed in the workshops include advice to avoid and/or mitigate risk to further seabird captures on a targeted fleet by fleet basis.

Fish stocks: BAR1, BAR5, BAR7, BIG1, BNS1, BNS2, BNS3, BNS7, BNS8, BUT5, ELE3, FLA1, FLA2, FLA3, FLA7, GUR1, GUR2, GUR3, GUR7, GUR8, HPB1, HPB2, HPB3, HPB4, HPB5, HPB7, HPB8, JDO1, JDO7, KAH1, LIN1, LIN2, MOK1, RCO3, RSK3, SCH2, SCH3, SCH5, SCH7, SCH8, SNA1, SNA2, SNA7, SNA8, SPO1, SPO3, SPO8, STA3, STA5, STA7, STN1, SWO1, TAR1, TAR2, TAR3, TAR7, TAR8, TOR1, TRE1, TRE7

NOTE: This multi-year project was consulted on in 2025/26 and is included here for completeness

3.4. MIT2025-04 Supporting uptake of sink rate assessment by fishers in bottom longline fisheries

Start Date: 1 July 2025

Completion Date: 30 June 2027

Guiding Objectives: CSP Objective A; National Plan of Action - Seabirds

Project Objective:

To facilitate and support the adoption and use of an adaptive management tool by fishers to effectively assess sink rate of their lines.

Rationale:

Sinking baited hooks to prescribed depths under the protection of bird scaring lines is a central component of seabird bycatch mitigation in bottom longline fisheries. There are both regulatory requirements and best practice principles which require the measurement of sink rates by bottom longline fishers.

This project will facilitate and drive the uptake of the sink rate adaptive management tools currently in development under CSP project MIT2024-04. As such, it will actively facilitate the ongoing improvement of bespoke seabird bycatch mitigation strategies on a vessel-by-vessel basis in line with efforts to reduce seabird bycatch towards zero.

Research Approach:

The project will allow for provision of gear and advice to enable fishers to adopt and use the tool which will enhance their management of line configurations to achieve effective seabird bycatch management strategies adapted for their operations.

The project will kick-start uptake and productive use of this new tool, which operators will then be able to continue using over the long term in their efforts to continually improve seabird bycatch mitigation strategies and minimise seabird bycatch.

Outputs:

1. Provision of gear and advice to fishers to enable their adoption of the adaptive management tool.
2. A summary report on the activities undertaken, feedback from fishers and recommendations for future support which may be required by fishers to use the adaptive management tool.

Indicative Research Cost: \$40,000 per annum

Cost Recovery: F(CR) Item 4 (100% Industry)

Cost Recovery Rationale:

Effective use of the sink rate adaptive management tool will enhance management of line configurations and thereby mitigate and reduce risk towards seabird bycatch in their operations.

Fish stocks: BNS1, BNS2, BNS3, BNS7, BNS8, HPB1, HPB2, HPB3, HPB4, HPB5, HPB7, HPB8, LIN1, LIN2, LIN3, LIN4, LIN5, LIN7, SNA1, SNA7, SNA8

3.5. MIT2026-01 Developing a robust management tool to reduce risk of sea turtle bycatch

Start Date: 1 July 2026

Completion Date: 30 June 2028

Guiding Objectives: CSP Objectives A and E

Project Objectives:

1. To test existing predictive models against recent leatherback turtle capture data and refine as necessary.
2. To use the most accurate predictive model from objective 1 to produce a management tool that indicates spatiotemporal bycatch risk and informs effective mitigation actions to reduce the risk of further leatherback turtle bycatch.

Western Pacific leatherback turtles are Critically Endangered due to a variety of anthropogenic impacts, including bycatch in commercial fisheries throughout their range. In New Zealand waters, most leatherbacks are caught by surface longline vessels targeting swordfish and bigeye tuna off the Northeast North Island (FMA 1, FMA 2) during summer and autumn. Interactions with surface longlines are also reported from FMA 7, FMA 8 and FMA 9.

Despite peaks in reported leatherback turtle bycatch in recent years, there are still minimal mitigation options available for reducing the risk of captures in surface longline. Current advice includes avoiding areas where leatherback turtles have been bycaught previously and to 'move on' when a bycatch event occurs. However, as leatherback turtles are wide ranging, it can be difficult for fishers to determine an area where risk is going to be lower. A robust management tool would assist to inform fishers and fisheries management of high-risk areas to avoid, and thereby mitigate, the risk of leatherback turtle bycatch. Furthermore, utilising a tool like this through mechanisms such as the DOC Liaison Programme and the DOC/FNZ/Seafood NZ Turtle Bycatch Working Group ensures we achieve CSP 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.

Research Approach:

In the past five years there have been four publications that model the distribution of sea turtles in New Zealand (Dunn et al. 2024, Siders et al. 2024, Dunn et al. 2023, Dunn et al. 2022). Since the most recent of these has been published there have been three seasons of bycatch data collected. For this project, we will test the past three seasons of sea turtle bycatch data against the four models published thus far for their ability to predict the bycatch that was reported and observed by EM in 2023/24, 2024/25, and 2025/26. The model that demonstrates the highest accuracy at predicting sea turtle bycatch will then provide a useful tool in predicting where and when there will be higher/lower risk of bycatch into future months and seasons.

This information will allow managers and fishers to 1) know what to expect in a given month or season regarding bycatch risk and 2) understand and prepare for what response/mitigation tool will be most appropriate to avoid reaching threshold limits, as outlined in the Interim plan for management of surface longline leatherback turtle interactions (2025/26).

Outputs:

1. A management tool to effectively assess and mitigate the risk of sea turtle captures in surface longline fisheries.
2. A technical report describing the work undertaken.

Indicative Research Cost: \$60,000 per annum

Cost Recovery: F(CR) Item 4 (100% Industry)

Cost Recovery Rationale:

This project delivers on CSP 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*) by developing a practical, operational management tool to reduce leatherback turtle bycatch in surface longline fisheries. It also delivers on CSP 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*) by improving understanding of where and when bycatch risk occurs. This information is required to inform detailed risk assessment and/or fisheries management. Addressing this objective will involve the collection of data on population trend, demographic parameters, and at-sea foraging information for medium to high risk protected species.

Leatherback turtle interactions with surface longline fisheries in New Zealand waters are a known adverse effect, particularly in northern fisheries. Current management relies on general avoidance advice and reactive responses following captures which do not provide fishers with sufficient information to actively avoid high-risk areas.

The project will produce a validated, spatiotemporal risk model that identifies when and where bycatch risk is elevated. This output is designed for direct use in fisheries management and fleet operations, including implementation through the Interim plan for management of surface longline leatherback turtle interactions (2025/26) and associated liaison programmes.

The tool will be used to:

- Enable fishers to avoid high-risk areas and times, reducing the likelihood of turtle capture events;
- Support timely operational responses (e.g. movement away from emerging risk areas) before interaction thresholds are reached; and
- Improve the targeting and effectiveness of management measures by ensuring avoidance advice is based on validated, up-to-date risk information.

By informing where fishing effort should be modified in order to reduce interactions, the project directly supports actions to avoid and mitigate fishing-related mortality of leatherback turtles.

Given that the output is an operational tool designed specifically to reduce a known adverse effect of commercial fishing in the fisheries where the risk occurs, it is appropriate that the costs are attributed to those fisheries.

Fish stocks: BIG1, STN1, SWO1, TOR1

References:

Dunn, M.R., Finucci, B., Sutton, P., Pinkerton, M.H. (2024). Characterising surface longline fishing fleet behaviour in relation to leatherback bycatch. NIWA Client Report 2024214WN. 80 p.

Dunn, M. R., Finucci, B., Pinkerton, M. H., Sutton, P., & Duffy, C. A. J. (2023). Increased captures of the critically endangered leatherback turtle (*Dermochelys coriacea*) around New Zealand: The contribution of warming seas and fisher behavior. *Frontiers in Marine Science*, 10, 1170632. <https://doi.org/10.3389/fmars.2023.1170632>

Dunn M R, Finucci B, Pinkerton M H, Sutton P 2022. Review of commercial fishing interactions with marine reptiles. NIWA Client Report 2022147WN. 78 p.

Siders, Z. A., Murray, C., Puloka, C., Harley, S., Duffy, C., Long, C. A., Ahrens, R. N. M., & Jones, T. T. (2024). Potential of dynamic ocean management strategies for western Pacific leatherback sea turtle bycatch mitigation in New Zealand. *Frontiers in Marine Science*, 11, 1342475. <https://doi.org/10.3389/fmars.2024.1342475>

3.6. MIT2026-02 Facilitating the uptake of setting mitigation in the surface longline fishery

Start Date: 1 July 2026

Completion Date: 30 June 2028

Guiding Objectives: CSP Objective A; National Plan of Action – Seabirds; CSP Seabirds Medium Term Research Plan

Project Objectives:

To further enable and support the use of seabird mitigation options that are effective across the setting period in surface longline fisheries, thereby continuing to reduce the risk of seabird bycatch.

In early 2024, the entire surface longline fleet fishing on the East Coast South Island committed to the use of Hookpods, a tool designed to mitigate seabird bycatch during the set. Additionally, the Fisheries (Seabird Mitigation Measures-Surface Longline) Circular which came into force in October 2024 brought the rest of the surface longline fleet up to Agreement on the Conservation of Albatrosses and Petrels (ACAP) best practice standards by requiring the use of either hook-shielding devices or “three out of three” (i.e. simultaneous use of tori line, line weighting, and night setting). Although there have been positive reports on the use of Hookpods, cost remains a barrier to ongoing implementation. Further to this, access to the most effective bird scaring line materials and line weighting options can also be a challenge for fishers.

Building on the reduction of seabird bycatch in surface longline following the implementation of ACAP best practice in 2024 (MPI NFPS quarterly reporting) and due to the high demand from fishers when distributing hook-shielding devices historically, this project aims to continue reducing barriers to ongoing mitigation implementation through cost-effective bulk orders.

This project works towards CSP 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. This is achieved by supporting the use of proven mitigation strategies in the surface longline fleet, thereby reducing the risk of seabird bycatch.

Research Approach:

As with previous support for mitigation uptake, this project will utilise the CSP Liaison Programme to facilitate the distribution of mitigation materials, enabling operators to implement highly effective mitigation strategies as appropriate to their operations. Priority will be given to operators fishing in high-risk areas and times and/or those new to the surface longline fleet.

Depending on interest, the provision of gear could include hook-shielding devices, line weighting options or associated PPE, refinement of tori lines, etc. Work will include the coordination of bycatch mitigation materials and assistance in their implementation. Support could also include the testing of vessel-specific bycatch mitigation setups if operators need to refine at-sea suitability.

Outputs of this project will inform ongoing bycatch mitigation management and policy decisions.

Outputs:

1. Implementation of measures to mitigate the adverse effects of commercial fishing on seabirds.

2. Mitigation gear supplied to fleet operators.

Indicative Research Cost: \$100,000 per annum

Cost Recovery: F(CR) Item 4 (100% Industry)

Cost Recovery Rationale:

This project delivers on CSP 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*) by supporting the consistent implementation of proven seabird bycatch mitigation measures in the surface longline fishery.

Seabird bycatch during the setting of surface longlines is a well-established adverse effect of commercial fishing. While recent regulatory changes have strengthened mitigation requirements in line with ACAP best practice, the effectiveness of these measures depends on their consistent and correct use across the fleet.

This project provides targeted operational support to enable effective uptake of mitigation measures, including access to appropriate gear and assistance with vessel-specific implementation through the CSP Liaison Programme. The CSP Seabird Medium Term Research Plan and NPOA–Seabirds both emphasise improving the uptake and effectiveness of mitigation measures as a key mechanism for reducing fishing-related seabird mortality.

The outputs of this project are used directly to:

- Increase the consistent use of effective mitigation measures during line setting, reducing seabird access to baited hooks and lowering capture risk;
- Support operators to implement mitigation correctly and in a manner suited to their fishing operation; and
- Target mitigation support to higher-risk fisheries, areas, or operators where additional reduction in bycatch risk is required.

By improving the uptake and effectiveness of mitigation measures already proven to reduce seabird interactions, the project directly contributes to avoiding and mitigating fishing-related mortality of seabirds in surface longline fisheries.

Given that the project delivers practical mitigation actions within the fisheries where the adverse effect occurs, it is appropriate that the costs are attributed to those fisheries.

Fish stocks: BIG1, STN1, SWO1, TOR1

References:

Edwards, C.T.T.; Peatman, T.; Goad, D.; Webber, D.N. (2023). Fishery data inputs for the New Zealand Seabird Risk Assessment. New Zealand Aquatic Environment and Biodiversity Report No. 313. 117 p.

3.7. MIT2026-03 Acoustic-based bycatch mitigation device advancement

Start Date: 1 July 2026

Completion Date: 30 June 2027

Guiding Objectives:

CSP Objective A, Hector's and Māui dolphin Threat Management Plan; South Island Bycatch Reduction Plan

Project Objectives:

This project will assess best-practice approaches for using acoustic (passive and active) technologies to mitigate Hector's dolphin bycatch. It includes an international horizon scan of emerging tools, their effectiveness, and considerations for their use in New Zealand's inshore set net and trawl fisheries, ensuring they do not introduce additional risks to dolphins.

The work will bring together international experts, local researchers, and industry to share technological developments, challenges, and lessons learned. It will build a shared understanding of the strengths and limitations of acoustic mitigation methods, explore new opportunities, and identify conditions under which these tools may be appropriate.

The primary output will be a report providing clear guidance on best-practice use of acoustic devices, along with other current or emerging mitigation options. The report will draw on workshop discussions and supporting literature to outline appropriate application, future research needs, and considerations for implementation.

The project will:

- Improve understanding of the risks, benefits, and practical constraints of acoustic mitigation approaches.
- Encourage exploration of new technologies and guide their future application.
- Strengthen shared understanding between researchers and industry, informed by international expertise, to support the development, refinement, or evaluation of bycatch mitigation tools.

Overall, this work supports improved understanding of mitigation impacts on dolphins and fisheries, and how these tools contribute to bycatch reduction planning and population management for Hector's dolphins.

Research Approach:

The project will use one or more facilitated workshops with international experts, local industry, and researchers to examine acoustic-based bycatch mitigation approaches — their efficacy, reliability, appropriateness, associated issues, and emerging technologies. These workshops will also explore the potential application of new active and passive acoustic tools in New Zealand fisheries and identify future research needs.

A supporting desktop review will inform the final report.

The work focuses on Hector's dolphin bycatch mitigation in inshore trawl and setnet fisheries, including acoustic alarms and new passive acoustic technologies.

The resulting report will:

- Provide best-practice guidance for the use of acoustic mitigation tools to reduce bycatch and minimise dolphin impacts.

- Inform mitigation planning, management decisions, and potential policy development.

Outputs:

The project will produce a report that:

1. Synthesises workshop discussions enhanced with desktop research to provide clear best-practice guidance for appropriate use of acoustic and other emerging mitigation tools to reduce Hector's dolphin bycatch.
2. Describes the potential impacts of acoustic mitigation on Hector's dolphins and how to minimise adverse effects from both fisheries and acoustic tools.
3. Reviews current and emerging research on acoustic approaches for reducing small-cetacean bycatch and assesses their relevance to Hector's dolphins with recommendations for future research

These outputs will help inform management decisions under the Threat Management Plan for Hector's and Māui dolphins, including guidance for the South Island Bycatch Reduction Plans.

Indicative Research Cost: \$50,000

Cost Recovery: F(CR) Item 4 (100% Industry)

Cost Recovery Rationale:

This project delivers on CSP 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*) by strengthening the effective use of mitigation measures to reduce Hector's dolphin bycatch in inshore set net and trawl fisheries.

Fisheries bycatch is a known and ongoing threat to Hector's dolphins and is actively managed under the Hector's and Māui Dolphin Threat Management Plan, including the South Island Bycatch Reduction Plans. Acoustic mitigation devices are a potential tool for reducing this risk, but their effectiveness depends on when, where, and how they are used. Inappropriate use may be ineffective or introduce additional risks to dolphins.

This project provides practical, fisheries-focused guidance on the use of acoustic mitigation technologies by assessing their effectiveness, limitations, and appropriate application based on international and domestic experience.

The outputs will be used directly within fisheries management and mitigation planning to:

- Identify when and where acoustic mitigation tools are likely to reduce bycatch risk;
- Ensure these tools are applied in ways that minimise unintended adverse effects on dolphins; and
- Support the selection and refinement of mitigation measures used in fisheries where dolphin interactions occur.

By improving how mitigation tools are used in practice, the project directly supports actions to avoid and reduce fishing-related dolphin mortality.

Given that the project delivers applied mitigation guidance for fisheries where the adverse effect occurs, it is appropriate that the costs are attributed to those fisheries.

Fish stocks: BUT5, FLA3, GUR 3, HPB3, SCH3, 5, SPO3, TAR3

3.8. MIT2026-04 Investigating low-powered lasers as an option for seabird bycatch mitigation

Start Date: 1 July 2026

Completion Date: 30 June 2027

Guiding Objectives: CSP Objective A; National Plan of Action – Seabirds; CSP Seabirds Medium

Term Research Plan

Project Objectives:

1. To document the range of light-based seabird bycatch mitigation devices (e.g., lasers) in use by, or of interest to, trawl and longline fishing operators in New Zealand.
2. To develop a costed proposal to experimentally test the impact on seabird eyes, sight, and behaviour of the light-based seabird bycatch mitigation devices identified in objective 1.

Lasers have been developed as nonlethal wildlife control methods despite being known to cause eye injury in humans. In the quest for novel seabird bycatch mitigation, lasers have been developed and marketed as such (e.g. the Seabird Saver). Blumenthal et al (2026) found that, in house sparrows, exposure to a high-energy laser (Seabird Saver) can lead to eye injuries, altering visual exploratory behaviour in the context of foraging, influencing foraging effort and food consumption rates.

While lasers with varying energy-levels are becoming available, due to ongoing concerns regarding the safety (to both humans and birds) and efficacy of laser technology of unknown energy levels as a seabird bycatch mitigation tool, the Agreement on the Conservation of Albatrosses and Petrels (ACAP) strongly discourage the use of high-energy lasers (ACAP 2024ABC). Despite these concerns, anecdotal evidence suggests a range of light-based seabird bycatch mitigation devices have been used in New Zealand commercial fisheries.

Whilst there are serious concerns regarding the welfare implications of high-energy lasers based on scientific evidence (e.g., Blumenthal et al 2026), the impacts of lower-energy light-emitting devices on birds remains poorly understood. Light-based seabird bycatch mitigation offers a number of potential practical benefits for fishing operators, with the potential for such devices being “set and forget”, requiring little time to operate and having no known effects on target fish catch.

Animal welfare concerns remain a barrier to the testing and development of light-based seabird bycatch mitigation solutions. This project would form the first stage of a process to facilitate such future research by documenting the devices currently in use, or of interest, to the industry, and by developing a proposal for future evaluation of impacts on seabirds. The next stage following this project would be the experimental testing of priority devices, which is likely to require multi-year research potentially costing hundreds of thousands of dollars. Hence, this project has been limited in scope to develop costed proposals for such work so that future investment decisions can be well informed.

Research Approach:

The first stage of this research is to document and classify light-based mitigation devices (e.g. lasers) in use by, or of interest to, New Zealand operators. This classification seeks to provide explicit insights into the energy levels currently in use and of future interest. From this list, a priority range of devices will be identified for potential future testing. Devices should be chosen that are lower energy, have evidence that they may be effective in mitigating seabird bycatch (e.g. anecdotal reports from fishers), and are a practical tool that fishing operators want to use.

The second stage will be the development of a costed proposal for experimental testing on seabird eyes. The protocol should be designed to provide adequate evidence on whether the tested products are likely to cause harm to seabirds. Note, the protocols should be suited to testing on eyes sourced from carcasses of bycaught birds, mortalities at colonies, or washed up on beaches. The protocols must not cause any harm to living seabirds. Outputs of this project will inform ongoing bycatch mitigation management and policy decisions, including a proposal that may be delivered as a future CSP project.

Outputs:

1. A technical report describing the light-based seabird bycatch mitigation devices in use in New Zealand fisheries, characterise their potential to harm seabirds and their potential mitigation effectiveness, as well as prioritising devices for future testing as a mitigation option to reduce adverse effects on seabirds.
2. A costed proposal for research to test the safety of prioritised devices on seabird eyes. This proposal should be suitable for consideration as a future CSP project and allow for future research and development of light-based seabird bycatch mitigation devices.

Indicative Research Cost: \$30,000

Cost Recovery: F(CR) Item 4 (100% Industry)

Cost Recovery Rationale:

This project supports CSP 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*) by ensuring that emerging seabird mitigation tools are assessed for both effectiveness and safety before wider use in commercial trawl and longline fisheries.

Seabird bycatch is a well-established adverse effect of commercial fishing. Recent management under NPOA–Seabirds and the CSP Seabird Medium Term Research Plan emphasises the use of effective mitigation measures that reduce bycatch without introducing additional harm to protected species.

Light-based devices, including low-powered lasers, are being used or considered by industry as potential mitigation tools. However, there is currently limited understanding of whether these devices reduce bycatch risk or pose risks to seabird vision and behaviour. This creates a clear management need to determine whether such tools should be supported, restricted, or further tested.

This project provides that assessment by:

- Identifying which light-based devices are in use or proposed for use in New Zealand fisheries; and
- Developing a structured, animal-welfare–appropriate approach for testing their safety and effectiveness.

The outputs will be used directly to inform fisheries management and mitigation guidance by:

- Determining whether the use of light-based devices should be discouraged, restricted, or progressed as a mitigation option; and
- Ensuring that any future mitigation development focuses on tools that are both effective and safe for seabirds.

By enabling informed decisions about whether and how these devices are used in commercial fisheries, the project directly supports actions to avoid and reduce seabird bycatch while preventing unintended additional harm.

Given that the project is directed at mitigation methods used within commercial fishing operations, it is appropriate that the costs are attributed to those fisheries.

Fish stocks: BAR1, BAR4, BAR5, BAR7, BIG1, BNS1, BNS2, BNS3, BNS7, BYX2, BYX3, ELE3, ELE5, ELE7, EMA1, EMA3, EMA7, FLA1, FLA2, FLA3, FLA7, GSH1, GSH3, GSH4, GSH7, GSH8, GSH9, GSP1, GSP7, GUR1, GUR2, GUR3, GUR7, GUR8, HAK1, HAK4, HAK7, HOK1, HPB1, HPB2, HPB3, HPB4, HPB7, HPB8, JDO1, JDO2, JDO3, JDO7, JMA1, JMA3, JMA7, KIN1, KIN7, KIN8, LEA1, LEA2, LEA3, LIN1, LIN2, LIN3, LIN4, LIN5, LIN6, LIN7, MAK1, MOK1, MOK3, MOK5, ORH1, ORH2A, ORH2B, ORH3A, ORH3B, OEO1, OEO3A, OEO4, OEO6, RCO1, RCO3, RCO7, RSN1, RSN2, RIB1, RIB2, RSK1, RSK3, RSK7, RSK8, SBW6A, SBW6R, SBW6I, SBW6B, SCH1, SCH2, SCH3, SCH4, SCH5, SCH7, SCI1, SCI2, SCI4A, SCI6A, SCI6B, SKI1, SKI3, SKI7, SNA1, SNA2, SNA3, SNA7, SNA8, SPD1, SPD3, SPD4, SPD5, SPD7, SPD8, SPE1, SPE3, SPE4, SPE7, SPO1, SPO3, SPO7, SPO8, SQU1T, SQU6T, SSK1, SSK3, SSK7, SSK8, STA1, STA3, STA4, STA5, STA7, STN1, SWA1, SWA3, SWA4, SWO1, TAR1, TAR2, TAR3, TAR4, TAR5, TAR7, TAR8, TOR1, TRE1, TRE2, TRE7, TRU3, TRU4, WAR1, WAR2, WAR3, WAR7, WAR8, WWA2, WWA3, WWA4, WWA5B, WWA7,