2.1.1 "Inshore" Fisheries: Joint DOC-MPI Inshore Observer Programme

Introduction

During the planning round for the 2011/12 observer programme a tiered approach was developed to prioritising areas of observer coverage. This planning process was described in detail in the Marine Conservation Services Programme Annual Plan 2011/12[5]. This tiered process has endured into the planning for the 2015/16 year and decisions on the levels and placement of this observer coverage were undertaken jointly between DOC and MPI. These decisions were informed by risk assessments (levels 1, 2 and 3 where applicable), the National Plan of Action for Sharks, Hector's and Māui dolphin Threat Management Plan priorities, and previous observer data and fish-stock related data collection.

For 2015/16 the cost of observer coverage is being jointly recovered by both DOC and MPI similar to the way in which offshore observer coverage is cost recovered. Broadly, for coverage driven by protected species interactions each cost will be recovered evenly by each agency. For coverage driven by fisheries needs but also collecting protected species information the observer's time will be prorated to reflect the time spent on each set of tasks generally 85% Fisheries, 15% Conservation Services.

The goals of the Inshore Observer Programme are to:

- *inform management of impacts from fishing on protected species by identifying and quantifying interactions between inshore fisheries and protected species, and assessing the effectiveness of mitigation measures, where appropriate*;
- *minimise adverse effects of fishing on the aquatic environment, including on biological diversity; and*
- *inform management of fish stocks by gathering biological and other information on board fishing vessels.*

[5] Available for download from http://www.doc.govt.nz/publications/conservation/marine-and-coastal/marine-conservation-services/csp-plans/mcs-annual-plan-2011-12/

3. Population Projects

3.1 Black petrel: Aotea/Great Barrier Island & Hauturu/Little Barrier Island population project

Project code: POP2015-01

Start Date: 1 July 2015

Completion Date: 30 June 2016

Guiding Objectives: CSP Objective E; CSP seabird plan 2015; National Plan of Action - Seabirds.

Project Objectives

1. To estimate the population size of black petrel at Great Barrier and Little Barrier Islands.
2. To estimate key demographic parameters of black petrel at Great Barrier Island.

Rationale

The Conservation Services Programme Seabird medium term research plan 2015 (CSP seabird plan 2015) outlines a five year research programme to deliver on the seabird population research component of CSP. It is targeted at addressing relevant CSP Objectives (as described in the CSP Strategic Statement) and National Plan of Action – Seabirds[6] Objectives. It was developed as part of the work of the CSP Research Advisory Group. Key components of research described in the CSP seabird plan 2015 for delivery in 2015/16 were identified and prioritised by the CSP RAG. This proposal covers prioritised components involving field work on black petrel, classified as at very high risk from commercial fisheries. Supporting rationale for all the components is summarised in the CSP seabird plan 2015. Key areas of uncertainty for black petrels are around the population size on Aotea/Great Barrier Island outside of the main colony (see Bell et al. 2011; 2013) and on Hauturu/Little Barrier Island. Other locations such as Coromandel have been indicated as potentially containing breeding sites. CSP Project POP2014-02 initiated research to better estimate the total population size by targeting survey effort at areas outside the main breeding colony on Great Barrier Island, and at Little Barrier Island. Trials of a mixed method approach using acoustic monitoring and ground searching are being conducted during 2014/15.

Research Approach

Objective 1 of this project will build on the recommendations from POP2014-02, to be reviewed by the CSP Technical Working Group in mid-2015, to conduct adequate field surveys to robustly estimate the total breeding population size on both islands. Based on the output of this project the expert group will be reconvened to assess and make any necessary refinements to methodology before commencing the 2015/16 field season. This group will also provide recommendations on investigation of breeding sites outside of Aotea/Great Barrier and Hauturu/Little Barrier Islands. It is anticipated that a combination of acoustic monitoring, ground transect and targeted searches by humans and trained seabirds will be used.

Other areas of priority to CSP include refining estimates of key demographic parameters, primarily juvenile survival, which has been demonstrated to be critical to determining the population trajectory (Bell et al 2011). Continuation of the mark-recapture study at Great Barrier Island will be the secondary focus of this project (Objective 2), and opportunities to maximise logistical synergies between the two objectives will be sought.

[6] National Plan of Action – 2013 to reduce the incidental catch of seabirds in New Zealand Fisheries. Available for download at: http://www.mpi.govt.nz/

3.2 Flesh-footed shearwater: Various locations population project

Project code: POP2015-02

Start Date: 1 July 2015

Completion Date: 30 June 2018

Guiding Objectives: CSP Objective E; CSP seabird plan 2015; National Plan of Action - Seabirds

Term: Three years. Note: Objectives 1 and 3 may be completed in the first two years.

Project Objectives

1. To estimate the population size of flesh-footed shearwater at Middle Island (Mercury Islands).
2. To estimate key demographic parameters of flesh-footed shearwater at Lady Alice Island/Mauimua and Ohinau Islands.
3. To describe the at-sea distribution of flesh-footed shearwater breeding at Northland breeding sites.

Rationale

The Conservation Services Programme Seabird medium term research plan 2015 (CSP seabird plan 2015) outlines a five year research programme to deliver on the seabird population research component of CSP. It is targeted at addressing relevant CSP Objectives (as described in the CSP Strategic Statement) and National Plan of Action – Seabirds[7] Objectives. It was developed as part of the work of the CSP Research Advisory Group. Key components of research described in the CSP seabird plan 2015 for delivery in 2015/16 were identified and prioritised by the CSP RAG. This proposal covers prioritised components involving field work on flesh-footed shearwater, classified as at very high risk from commercial fisheries. Supporting rationale for all the components is summarised in the CSP seabird plan 2015.

Research Approach

Baker et al. (2010) reported on the last species-wide population estimate, although one key breeding site, Middle Island (Mercury Islands) was not surveyed. Updating the population estimate by obtaining a robust estimate for this site will be a key priority.

Waugh et al. (2014; reporting on CSP Project POP2011-02) provided advice on population monitoring required to estimate adult survival, juvenile survival, fecundity and age of first reproduction of flesh-footed shearwaters. Objective 2 of this project will build on these recommendations, conducting further demographic mark-recapture field work at the established study sites at Lady Alice/Mauimua and Ohinau Island, and report on updated estimates of key demographic parameters including adult survival.

Waugh et al. (2014) also reported detailed data on the at-sea distribution and foraging behaviour of flesh-footed shearwaters, primarily from Ohinau Island. Objective 3 of this project would expand this knowledge to include Northland populations as well, as recommended by Waugh et al. (2014).

[7] National Plan of Action – 2013 to reduce the incidental catch of seabirds in New Zealand Fisheries. Available for download at: http://www.mpi.govt.nz/

Outputs

1. A technical report (or reports) detailing methods used and results found, including an updated population estimate, updated estimates of key demographic parameters, and the foraging distribution of Northland breeding flesh-footed shearwaters.
2. Data obtained, including spatial distribution data suitable for use in fisheries risk assessment.

Note: A three year term is proposed. Objectives 1 and 3 may be completed in the first two years.

References

Baker, B., Hedley, G., Cunningham, R. 2010 Data collection of demographic, distributional and trophic information on the flesh-footed shearwater to allow estimation of effects of fishing on population viability: 2009-10 field season. Research Report for Ministry of Fisheries project PRO2006/01. Ministry of Fisheries, Wellington. 62 p

Richard, Y., Abraham, E.R.. 2013. Risk of commercial fisheries to New Zealand seabird populations. New Zealand Aquatic Environment and Biodiversity Report No. 109. Ministry for Primary Industries, Wellington.

Waugh, S.M., Jamieson, S.E., Stahl, J.C., Filippi, D.P., Taylor, G.A., and Booth, A. 2014. Final Report on Project POP2011-02 Flesh-footed Shearwaters-population study and foraging areas. Report prepared by the Museum of New Zealand, Te Papa Tongarewa for the New Zealand Department of Conservation, Wellington, 68 p.

Indicative Research Cost: $80,000 per annum

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

Fish stocks: BIG1, BNS 1, SNA 1

3.3 Seabird population research: Auckland Islands 2015-16

Project code: POP2015-03

Start Date: 1 July 2015

Completion Date: 30 June 2016

Guiding Objectives: CSP Objective E; CSP seabird plan 2015; National Plan of Action – Seabirds.

Project Objective

To collect information on key aspects of the biology of selected at-risk seabird species in order to reduce uncertainty or bias in estimates of risk from commercial fishing.

Specific Objectives

Objective	Species	Target biological information
1	Gibson's albatross	A - Population size
		B - Adult survival and other demographic parameters (Adams Island)
2	White-capped albatross	A - Population size
		Ground truth aerial survey methods (Disappointment Island)
		Adult survival and other demographic parameters (Disappointment Island)
3	White-chinned petrel	A - Population size (Adams Island)
4	Northern giant petrel	A - Population size
		Note: target information in italics are those identified in the CSP seabird plan 2015 that have not been costed in this proposal, for reasons of prioritisation, but are possible extensions

Rationale

The Conservation Services Programme Seabird medium term research plan 2015 (CSP seabird plan 2015) outlines a five year research programme to deliver on the seabird population research component of CSP. It is targeted at addressing relevant CSP Objectives (as described in the CSP Strategic Statement) and National Plan of Action – Seabirds[8] Objectives. It was developed as part of the work of the CSP Research Advisory Group. Key components of research described in the CSP seabird plan 2015 for delivery in 2015/16 were identified and prioritised by the CSP RAG. This proposal covers prioritised components involving field work at the Auckland Islands, which have been developed to maximise cost and logistical efficiencies between components. Supporting rationale for all the components is summarised in the CSP seabird plan 2015

[8] National Plan of Action – 2013 to reduce the incidental catch of seabirds in New Zealand Fisheries. Available for download at: http://www.mpi.govt.nz/

Species specific objectives and research approach

Gibson's albatross – the first objective is to estimate the total population size at the Auckland Islands (Objective 1A). The research approach will be based on exploratory work undertaken in 2014/15 as part of project POP2014-02, to be reviewed by the CSP Technical Working Group in the second quarter of 2015. The second objective (Objective 1B) is to continue the mark-recapture study on Adams Island (Auckland Islands) to collect information on key demographic parameters. This will follow established methods (Walker & Elliot 1999, 2005).

Outputs - a report describing research undertaken to estimate the population size for the Auckland Islands; a report describing the mark-recapture research completed; data collected.

Previous CSP population projects on Gibson's albatross include POP2014-02, POP2013-03, POP2012-07, POP2004-02 and BRD2001-01.

Note: Gibson's albatross has been identified as a potential indicator species by DOC (Monks et al. 2013), and data collected by this study may be used as part of DOC's reporting on indicator species.

White-capped albatross – the key focus will be to collect data suitable for estimating the population size at the Auckland Islands (Objective 2A) following the methods of Baker et al. (2013). The proposal has been costed to obtain an archived set of photographs, and not the analysis required to estimate population size. It is envisaged this will be included in a future proposal.

Note, although not costed into this proposal, two secondary objectives are listed, which could be conducted subject to the ability to ground access to Disappointment Island are:

- to conduct ground truthing of the aerial survey methodology used in Objective 2A; and
- to collect resight data from a study colony established on Disappointment Island to contribute to the estimation of key demographic parameters.

Outputs – a summary report describing the aerial survey; data collected.

Previous CSP population projects on white-capped albatross include POP2014-02, POP2013-02, POP2012-05 and POP2005-02.

White-chinned petrel – this component aims to build on a research programme being progressed by Otago University and NIWA, to deliver on relevant CSP research objectives. The primary objective is to estimate population size at the Adams Island (Auckland Islands). Other relevant research underway includes collecting resight data from study colonies established to estimate key demographic parameters, and collecting spatial foraging data which can be used to describe the spatial overlap with commercial fishing effort . A survey of population size on Disappointment Island was completed in 2014/15.

Outputs – a report describing research undertaken to estimate the population size on Adams Island (Auckland Islands); data collected.

Northern giant petrel – the most recent published population estimate for this population, based on the compilation by Patterson et al. (2008), dates to the 1980s. This project will involve a survey of small off-lying islands known or suspected to have breeding birds to estimate and map total breeding pairs for those islands.

Outputs – a report describing the area surveyed and total population estimate; data collected.

3.4 Northern Buller's albatross: review taxonomy

Project code: POP2015-04

Start Date: 1 July 2015

Completion Date: 30 June 2016

Guiding Objectives: CSP Objective E; CSP seabird plan 2015; National Plan of Action – Seabirds.

Project Objectives

1. To reassess the taxonomic status of breeding populations of northern Buller's albatross.
2. Identify genetic markers to allow routine genetic assessment of bycaught Buller's albatross to determine their population of origin.

Rationale

The Conservation Services Programme Seabird medium term research plan 2015 (CSP seabird plan 2015) outlines a five year research programme to deliver on the seabird population research component of CSP. It is targeted at addressing relevant CSP Objectives (as described in the CSP Strategic Statement) and National Plan of Action – Seabirds[9] Objectives. It was developed as part of the work of the CSP Research Advisory Group. Key components of research described in the CSP seabird plan 2015 for delivery in 2015/16 were identified and prioritised by the CSP RAG. This proposal is one of the prioritised components. Supporting rationale for all the components is summarised in the CSP seabird plan 2015.

Currently two subspecies of Buller's albatross, northern and southern, are generally recognised, though uncertainty remains around the taxonomic relationships across the Buller's albatross clade. An isolated breeding population occurs at the Three Kings, and the taxonomic status of this population is of current research interest (M. Rayner pers. comm.). Northern and southern Buller's albatross are currently categorised as at high and very high risk.

Research approach

This proposal seeks to build on current taxonomic research interests and utilise existing material where possible. The project will seek to develop suitable genetic markers that will allow for a robust assessment of the taxonomy of the clade, and, through future use of the markers, enable the routine assessment of genetic samples from bycaught birds to identify population of origin.

Outputs

1. A technical report (or reports) detailing methods used and results found, describing the taxonomic status of all populations of Buller's albatross.
2. Data obtained, including genetic markers suitable for future with samples from bycaught birds.

Indicative Research Cost: $20,000

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

Fish stocks: BAR1, BAR4, BAR5, BIG1, HOK1, LIN5, LIN7, SCI3, SCI6A, SQU1T, SQU6T, STN1, SWA4, WWA5B

[9] National Plan of Action – 2013 to reduce the incidental catch of seabirds in New Zealand Fisheries. Available for download at: http://www.mpi.govt.nz/

3.7 Supporting genetic analysis of protected fish species

Project code: POP2015-07

Start Date: 1 July 2015

Completion Date: 30 June 2016

Guiding Objectives: CSP Objective E; Draft CSP fish plan; National Plan of Action – Sharks.

Project Objectives

1. To establish a repository for genetic samples of protected fish species.
2. To conduct a stock take of complete, current and planned genetic analyses internationally, in relation to New Zealand's nine protected fish species.
3. To provide recommendations on the most appropriate methods of furthering genetic analyses in order to inform management of New Zealand's protected fish species in relation to fisheries bycatch.

Rationale

Reviews of the nine fish species protected under the Wildlife Act 1953 have highlighted a general paucity of data on the genetic structuring of stocks (Francis & Lyon 2012; 2014). This lack of information on population structure makes meaningful quantification of the extent of risk to these species problematic. Internationally there are a number of universities and research institutes undertaking genetic analyses on these species, with work being at various stages of planning or completion. Undertaking a stock take of these projects and pooling of samples with those collected from bycaught animals in New Zealand will allow a more strategic approach to planning and support of research to understand the genetic structuring of these protected fish species, allowing for robust assessment of risk from commercial fishing to these taxa over time in accordance with the National Plan of Action-Sharks.

Research approach

A formal repository of genetic samples will be established and made available. A database will be maintained of this collection, in order to track provenance of samples, including all bycatch event details, storage condition and a record of any subsample taken for research purposes.

Parallel to this an international stock take of complete, current and planned genetic analyses for New Zealand's nine protected fish species will be undertaken. This will include, though not be limited to, review of published and grey literature, conference proceedings, relevant research communities and direct contact with known researchers. The researcher list compiled during this review will be used to make relevant researchers aware of the presence of the New Zealand repository in order to increase the likelihood of synergistic work being carried out both domestically and internationally.

Outputs

1. A data bank of genetic tissue samples for protected fish species.
2. A review of current and planned genetic analyses relevant to New Zealand protected fish.
3. Recommendations for appropriate methodologies on genetic analyses to better inform fisheries management, in relation to current international best practice.

References

Frances, M. P., Lyon, W. S 2012: Review of commercial fishery interactions and population information for eight New Zealand protected fish species. Report prepared by NIWA for the New Zealand Department of Conservation, Wellington.

Francis, M. P., and Lyon, W. S. (2014). Review of commercial fishery interactions and population information for the oceanic whitetip shark, a protected New Zealand species. Report prepared by the National Institute of Water and Atmospheric Research for the New Zealand Department of Conservation, Wellington. 15p.

Indicative Research Cost: $30,000

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

Fish stocks: BAR 1, 7, BCO 4, BIG 1, BNS1, 2, 3, 7, BUT5, 7, BWS 1, ELE3, 5, 7, EMA 1, 3, 7, FLA1, 2, 3, 7, GMU1, GSH 1, 3, 4, 7, 8, 9, GSP 1, 7, GUR 1, 2, 3, 7, 8, HAK 1, 4, 7, HOK 1, HPB 1, 2, 3, 4, 7, 8, JDO 1, 2, 3, 7, JMA 1, 3, 7, KIN 1, 7, 8, LEA 1, 2, 3, LIN 1, 2, 3, 4, 5, 6, 7, MAK 1, MOK 1, 3, 5, MOO 1, ORH 1, 2A, 2B, 3A, 3B, OEO 1, 3A, 4, 6, PAR 1, 9, POR 1, POS 1, RBM 1, RSN 1, 2, RIB 1, 2, RCO 1, 3, 7, RSK 1, 3, 7, 8, SBW 6A, 6R, 6I, 6B, SCH1, 2, 3, 4, 5, 7, SCI 1, 2, 4A, 6A, 6B, SKI 1, 3, 7, SNA 1, 2, 3, 7, 8, SPD 1, 3, 4, 5, 7, 8, SPE 1, 3, 4, 7, SPO1, 3, 7, 8, SQU1T, 6T, SSK 1, 3, 7, 8, STA 1, 3, 4, 5, 7, STN 1, SWA 1, 3, 4, SWO 1, TAR 1, 2, 3, 4, 5, 7, 8, TOR 1, TRE 1, 2, 7, TRU 3, 4, WAR 1, 2, 3, 7, 8, WWA 2, 3, 4, 5B, 7, YEM 1, 8, 9

4. Mitigation Projects

NOTE: This multi-year project (MIT2014-02) was consulted on in 2014/15 and is included here for completeness.

4.1 Protected species bycatch newsletter

Project code: MIT2014-01

Start Date: 1 July 2014

Completion Date: 30 June 2016

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

Project Objective

To produce a newsletter to communicate protected species-related information to trawl and longline fishermen.

Rationale

Reducing the impacts of commercial fishing on protected species relies on individual fishermen actively applying best practice mitigation methods to their fishing activity. Applying and developing mitigation methods in specific circumstances requires an understanding of the protected species that may be impacted, and the nature with which they interact with fishing activity. A range of relevant information exists, often the result of research projects, and the newsletter will serve as a vehicle for communication to fishermen, fishing companies, and other interested parties. An evaluation of previous examples of this work by Pierre (2012) indicates that this format shows promise in reaching a broad sector of the fishing community and wider stake holders, and provides recommendations for further development.

Outputs

A bimonthly newsletter covering best practice mitigation methods, current relevant events, updates on novel methods or new mitigation trials and information on protected species and the nature of their interaction with commercial fishing. The newsletter must build on the recommendations in the evaluation of MIT2012-05 currently under way and due to be reported before June 2014.

Previous CSP projects include MIT2012-05 and MIT2011-05.

References:

Pierre., J. 2012. MIT2011-05 Protected Species Bycatch Newsletter Report to the CSP TWG 28 May 2012. Available for download at: http://www.doc.govt.nz/upload/documents/conservation/marine-and-coastal/marine-conservation-services/mit-2011-05-ocean-guardian-evaluation-report.pdf

Indicative Research Cost: $20,000

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

Fish Stocks: BAR 1, 7, BCO 4, BIG 1, BNS1, 2, 3, 7, BUT5, 7, BWS 1, ELE3, 5, 7, EMA 1, 3, 7, FLA1, 2, 3, 7, GMU1, GSH 1, 3, 4, 7, 8, 9, GSP 1, 7, GUR 1, 2, 3, 7, 8, HAK 1, 4, 7, HOK 1, HPB 1, 2, 3, 4, 7, 8, JDO 1, 2, 3, 7, JMA 1, 3, 7, KIN 1, 7, 8, LEA 1, 2, 3, LIN 1, 2, 3, 4, 5, 6, 7, MAK 1, MOK 1, 3, 5, MOO 1, ORH 1, 2A, 2B, 3A, 3B, OEO 1, 3A, 4, 6, PAR 1, 9, POR 1, POS 1, RBM 1, RSN 1, 2, RIB 1, 2, RCO 1, 3, 7, RSK 1, 3, 7, 8, SBW 6A, 6R, 6I, 6B, SCH1, 2, 3, 4, 5, 7, SCI 1, 2, 4A, 6A, 6B, SKI 1, 3, 7, SNA 1, 2, 3, 7, 8, SPD 1, 3, 4, 5, 7, 8, SPE 1, 3, 4, 7, SPO1, 3, 7, 8, SQU1T, 6T, SSK 1, 3, 7, 8, STA 1, 3, 4,, 5, 7, STN 1, SWA 1, 3, 4, SWO 1, TAR 1, 2, 3, 4, 5, 7, 8, TOR 1, TRE 1, 2, 7, TRU 3, 4, WAR 1, 2, 3, 7, 8, WWA 2, 3, 4, 5B, 7, YEM 1, 8, 9.

4.2 Seabird bycatch reduction (small vessel longline fisheries)

Project code: MIT2015-01

Start Date: 1 July 2015

Completion Date: 30 June 2017

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

Project Objectives

1. To provide one or more liaison officers to the inshore bottom longline and small vessel surface longline fishing fleets, with a focus on northern North Island, to assist those fleets reduce their seabird bycatch.
2. To coordinate the seabird liaison officer roles with wider efforts targeted at seabird bycatch reduction in relevant fisheries to achieve the greatest reduction in bycatch possible.

Rationale

To effectively reduce the risk of interactions with seabirds it is important for vessels to take the latest developments in mitigation technology and be able to adapt them to their specific operations. Translating the latest scientific research and fishing regulations into operational parameters is not always a straight forward process. To reduce that risk at a species level it is necessary for there to be consistency of application of mitigation across all fleets interacting with the species. Seabird liaison officers have formed a vital interface between skippers, government and researchers. Other projects and processes are also underway, which aim to reduce seabird bycatch, including the work of collaborative groups involving industry, Government and eNGOs, and process driven by the Ministry for Primary Industries. Coordinating liaison officers with these other processes to maximise reduction results is important.

Liaison officers were trialled in the snapper longline fleet around the Hauraki Gulf in 2013/14 and its initial positive results led to an expanded project being jointly resourced between DOC and MPI in 2014/15. This project expanded to a wider area and over a broader range of seasons, in particular to a larger portion of the Snapper longline fleet whilst also moving into the bluenose/hapuku fleet to develop vessel specific Seabird Management Plans (SMPs) along with liaison with the domestic surface longline fleet. Based the outcomes of two years of this work the ongoing need for the liaison role has been demonstrated to allow review, refinement and expansion of SMPs or equivalent on inshore vessels interacting with seabird species.

Implementation approach

Liaison officers:

An adequate working understanding of seabird biology, taxonomy and behaviour assist in understanding the risk posed in each area and season. By employing liaison officers who have operational experience in fishing fleets along with an understanding of best practice mitigation and seabird characteristics it is possible to spread information over the fishing fleet in a collaborative and practical manner. These officers will also be equipped with fact sheets/ resources and mitigation materials to assist in the dissemination of this knowledge.

The approach of this project will be to employ one or more liaison officers to travel to key ports before, during and immediately after high risk months in order to share information on seabird behaviour and mitigation options. Officers should actively encourage development of vessel

specific mitigation practices and where appropriate vessel management plans. Liaison officers will operate closely with Observer Services to ensure mutual gains with part of the role including sea time on vessels to help understand individual vessels' operations and therefore tailor the most appropriate mitigation solutions. The officers should also operate as a conduit for communication between fishers and government by directing fishers concerns or questions to the right people.

Coordination:

A coordination officer will be appointed to actively liaise with all interested parties and coordinate the work of the liaison officers with other projects and processes relevant to the target fisheries. The officer will be tasked with identifying and prioritising actions that will makes the highest contribution to reducing seabird bycatch in the target fisheries.

Outputs

1. Regular communication and meetings, as appropriate, with relevant agencies, industry bodies and other parties to coordinate bycatch reduction activities and report progress.
2. Monthly short form reports back to relevant advisory groups detailing progress and any developments which have come from the fleet
3. Annual written report detailing interactions with fishers and steps take to enhance mitigation.

Note: A 2 year term is proposed for this project

Indicative Research Cost: $150,000 per annum (excludes potential extension to recreational/charter sector)

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

Fish Stocks: BIG1, STN1, SWO1, SNA1, BNS1 HPB1

4.3 Small vessel seabird mitigation project

Project code: MIT2015-02

Start Date: 1 July 2015

Completion Date: 30 June 2017

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

Project Objectives

1. To test the efficacy of mitigation strategies or devices identified by the work of the seabird liaison officers operating in the small vessel bottom longline fleets.
2. To support efficacy testing of the improved tori line designs produced as an output of project MIT2014-02.

Rationale

The small vessel surface longline fishery poses substantial risk to most high and very high risk seabirds (see Table 7 of the CSP seabird plan 2015) despite current mitigation requirements and use. Implementation of proven mitigation strategies is known to be variable both within and between these fleets. Seabird Liaison officers have been deployed in the northern inshore bottom longline fleets for the past two years, also moving into the surface longline fleet during 2014/15, and further work is proposed in project MIT2015-01. In order to provide robust advice on best practice to fishers it is important that new or adapted mitigation options are backed up with adequate testing of efficacy. Recent work has included testing of new weighting options, setting practices and novel devices such as the hook pod (including CSP projects MIT 2011-03, MIT 2012-01 and MIT2013-02). Research is underway to develop improved tori line designs (CSP project MIT2014-02).

Research Approach

Quantitative testing will be undertaken of the mitigation strategies or devices identified by seabird liaison officers. Devices will be assessed using non-lethal metrics, to describe the deterrence of seabirds from high risk areas around the vessel. Performance will be assessed in a range of weather conditions and varying fishing operations. Measures identified by the seabird liaison officers will be considered by a technical working group including industry participants and relevant experts to recommend practices that have not been adequately proven. Appropriate testing metrics will be developed for subsequent at-sea testing, which may be in conjunction with observer deployment, liaison officer placement or utilisation of specialist researchers.

In year 1 this project will include the efficacy of improved tori line design(s) developed under project MIT2014-02 will be undertaken in comparison to current tori line designs.

Note: A 2 Year Term is proposed for this work, $150,000 in the first year and $100,000 in the second

Indicative Research Cost: $150,000 in 2015/16

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

Fish Stocks: BIG1, STN1, SWO1, SNA1, 2, BNS1, 2, HPB1, 2

Appendix 1: Cost Allocation Tables

A: CSP 2015/16 Projects

Code	Project	Research	Admin	Total	CR Item	Industry %	Industry	Crown
Interaction projects								
INT2015-01	Observing commercial fisheries	$1,063,143	$114,772	$1,177,914	8	100	$1,177,914	$-
INT2013-02	Identification of seabirds captured in New Zealand fisheries	$80,000	$8,636	$88,636	4	100	$88,636	$-
INT2015-02	Identification of marine mammals, turtles and protected fish captured in New Zealand fisheries	$15,000	$1,619	$16,619	4	100	$16,619	$-
INT2015-03	Identification and storage of cold-water coral bycatch specimens	$40,000	$4,318	$44,318	4	100	$44,318	$-
INT2015-04	Black petrel and flesh-footed shearwater foraging behaviour around fishing vessels	$40,000	$4,318	$44,318	4	100	$44,318	$-
Population projects								
POP2015-01	Black petrel: Aotea/Great Barrier Island & Hauturu/Little Barrier Island population project	$100,000	$10,796	$110,796	3	50	$55,398	$55,398
POP2015-02	Flesh-footed shearwater: Various locations population project	$80,000	$8,636	$88,636	3	50	$44,318	$44,318
POP2015-03	Seabird population research: Auckland Islands 2015-16	$155,000	$16,733	$171,733	3	50	$85,867	$85,867
POP2015-04	Northern Buller's albatross: review taxonomy	$20,000	$2,159	$22,159	3	50	$11,080	$11,080
POP2015-05	New Zealand Sea Lion: Auckland Islands Population Project	$250,000	$26,989	$276,989	2	90	$249,290	$27,699
POP2015-06	Marine reptiles - review of interactions and populations	$20,000	$2,159	$22,159	3	50	$11,080	$11,080
POP2015-07	Supporting genetic analysis of protected fish species	$30,000	$3,239	$33,239	3	50	$16,619	$16,619

Code	Project	Research	Admin	Total	CR Item	Industry %	Industry	Crown
Mitigation projects								
MIT2014-01	Protected species bycatch newsletter	$20,000	$2,159	$22,159	4	100	$22,159	$-
MIT2015-01	Seabird bycatch reduction (small vessel longline fisheries)	$150,000	$16,193	$166,193	4	100	$166,193	$-
MIT2015-02	Small vessel seabird mitigation project	$150,000	$16,193	$166,193	4	100	$166,193	$-
TOTAL		**$2,213,143**	**$238,920**	**$2,452,063**			**$2,200,003**	**$252,060**

B:CSPObserverAllocation

Fishery	Stocks covered	Total days	MPI CR%	MPI Days	DOC CSP CR%	DOC CSP Days	Cost per day	Research Cost
Deepwater trawl fisheries:								
North Island Deepwater	ORH1,ORH2A,ORH2B,ORH3A,BYX2,CDL2	100	90	90	10	10	$450	$4,500
Chatham Rise Deepwater	ORH3B,OEO3A,OEO4,BYX3	270	90	243	10	27	$450	$12,150
Sub-Antarctic Deepwater	ORH3B,OEO1,OEO6	60	90	54	10	6	$450	$2,700
West Coast NI Deepwater	ORH7A	55	90	49.5	10	5.5	$450	$2,475
Pelagic trawl fisheries:								
Mackerel Trawl	JMA7,EMA7	1290	85	1096.5	15	193.5	$450	$87,075
Middle Depth trawl fisheries:								
West Coast South Island	HOK1,HAK7,LIN7,SWA1	1440	85	1224	15	216	$450	$97,200
Chatham Rise Middle Depth	HOK1,HAK1,HAK4,LIN3,LIN4,SWA3,SWA4,JMA3,BAR1,BAR4	970	85	824.5	15	145.5	$450	$65,475
Sub-Antartic Middle depth (ex.SQU/SBW)	HOK1,SWA4,WWA5B,BAR5,JMA3	930	85	790.5	15	139.5	$450	$62,775
Southern Blue Whiting	SBW all	360	80	288	20	72	$450	$32,400
Squid Trawl	SQU1T,SQU6T	1360	80	1088	20	272	$450	$122,400
Cook Strait hoki	HOK1	50	85	42.5	15	7.5	$450	$3,375
West Coast SI hoki	HOK1	50	85	42.5	15	7.5	$450	$3,375
Scampi	SCI(ALL)	155	80	124	20	31	$450	$13,950
Deepwater bottom longline fisheries:								
Bottom longline	LIN3,LIN4,LIN5,LIN6,LIN7	175	85	148.75	15	26.25	$450	$11,813

Continued over leaf

B:CSPObserverAllocation(Continued)

Fishery	Stocks covered	Total days	MPICR%	MPI Days	DOCCSPCR%	DOC CSP Days	Cost per day	Research Cost
Surface longline fisheries:								
Charter Tuna	STN1	260	85	221	15	39	$450	$17,550
Domestic tuna longline-ECSTN	STN1	180	85	153	15	27	$585	$15,795
Domestic tuna longline-WCSTN	STN1	120	85	102	15	18	$585	$10,530
Domestic tuna longline-ECBIG/SWO	BIG1,SWO1	225	85	191.25	15	33.75	$585	$19,744
Domestic tuna longline-WCBIG/SWO	BIG1,SWO1	45	85	38.25	15	6.75	$585	$3,949
Purse Seine fisheries:								
Domestic SKJ	SKJ1	70	85	59.5	15	10.5	$585	$6,143
Super-seiner SKJ	SKJ1	30	85	25.5	15	4.5	$585	$2,633
Inshore Fisheries								
Setnet WCNI(E*)–TBC, coverage will be MPI Crown funded		300	-	300	-	-		
BNS/SNA Bottom longline-AKE	SNA1,BNS1,HPB1,LIN1	205	50	102.5	50	102.5	$635	$65,088
Setnet ECSI-Otago	SCH3,SPO3,ELE3,MOK3	310	50	155	50	155	$635	$98,425
Setnet SCSI-Southland	SCH5,SPO3,ELE5,SPD5	320	50	160	50	160	$635	$101,600
Inshore trawl WCNI	FLA1,JDO1,SCH1,TRE7,SNA8,KAH8,TAR1,GUR1	400	50	200	50	200	$635	$127,000
Danish seine SNA1	SNA1	100	85	85	15	15	$635	$9,525
Inshore trawl ECSI	BAR1,RCO3,TAR3	200	50	100	50	100	$635	$63,500
Total		**10030**		**7998.75**		**2031.25**		**$1,063,143**

EC=EastCoast WC=WestCoast ECSI=EastCoastSouthIsland WCSI=WestCoastSouthIsland