Conservation Services Programme
Project MIT2015-01:
Seabird bycatch reduction (small vessel longline fisheries)

Liaison Coordinator

Final Report

J. P. Pierre

October 2016

JPEC Ltd

Abstract

With activities based from ports around the country and their focus being on the business of catching fish, fishers may find it difficult to stay abreast of developments in the field of bycatch mitigation, as well as changes in government policies and management approaches that overarch the fisheries they are active in. Liaison officers provide a mechanism to address this. In 2013/14, liaison officers were deployed in the snapper (*Pagrus auratus*) bottom longline fleet in Fishery Management Area 1. The success of that programme led to its continuation in 2014/15. This project (MIT2015-01) builds on previous liaison officer work with another two-year term. Its objectives are:

1. To provide one or more liaison officers to the inshore bottom longline and small vessel surface longline fishing fleets, with a focus on the northern North Island, to assist those fleets in reducing 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.

The liaison team for 2015/16 comprised two liaison officers and a coordinator. The programme was established with documentation outlining roles and responsibilities, modes of interaction with government and stakeholders, and prioritised lists of vessels for engagement. Vessels included in the programme were surface and bottom longliners active in Fisheries Management Area 1 and targeting snapper (*Pagrus auratus*) (38 vessels) and bluenose (*Hyperoglyphe antarctica*) (17 vessels), and surface longline vessels operating off the east coast of the North Island and the west coast of the South Island (38 vessels). The activities of liaison officers were supported with information collection by government fisheries observers, who documented details of mitigation strategies in use on vessels.

In bottom longline fisheries, Seabird Management Plans were the vehicle for documenting strategies employed day to day on vessels to reduce seabird capture risk. These plans were introduced in 2014/15, and reviewed in 2015/16. In surface longline fisheries, Operational Plans had a similar function, and were developed in 2015/16 for the first time. The range of measures described in these plans varied significantly amongst vessels, illustrating opportunities to continue to encourage the implementation of improved bycatch mitigation strategies in future.

Amongst bottom longline vessels included in the liaison programme in 2015/16, liaison officers had up to four contacts with bluenose vessels and up to 12 contacts with snapper vessels. Up to six contacts were made by the liaison officer with surface longline vessel operators. Engagement with industry, government, research providers, environmental groups and other stakeholders has been valuable for the liaison programme in 2015/16. In particular, licensed fish receivers have made extremely important contributions to the programme and this is encouraged for future years.

In addition to fostering the involvement of licensed fish receivers in the liaison programme, recommendations for future years include providing a more closely located liaison resource for the west coast of the South Island, having seabird liaison officers and fisheries observers go to sea only in their respective capacities to ensure role clarity, prioritising a small group of higher risk vessels for dedicated liaison activities in 2016/17 such that their mitigation strategies demonstrably improve, and providing regular online updates for stakeholders interested in the activities of liaison team.

Contents

Introduction

To ensure that captures of marine protected species are minimised on an ongoing basis, fishers must maintain an up-to-date knowledge of bycatch avoidance and reduction measures. With their activities based from ports around the country and their focus being on the business of catching fish, fishers may find it difficult to stay abreast of developments in the field of bycatch mitigation, as well as changes in government policies and management approaches that overarch the fisheries they are active in. Therefore, the process of communicating developments relevant to reducing marine protected species bycatch with fishers is an ongoing one.

Since the early 2000s, liaison officers have been one part of the Government's approach to addressing this communication challenge (Kellian 2003; Hibell 2005; Johnson 2005). Liaison officers provide ongoing in-person contact with fishers that is intended to address questions, resolve issues, foster a more collaborative approach to the implementation of bycatch mitigation measures, share knowledge on bycatch mitigation and protected species issues, and help improve the overall performance of mitigation strategies across target fleets. Liaison officers are included in action plans intended to help meet government management objectives for at-risk seabirds (e.g., the Action Plan for the Black Petrel Working Group, the black petrel and flesh-footed shearwater Action Plan (MPI and DOC 2014)). Further, the bycatch risk management plans liaison officers work with fishers to develop are one proposed performance indicator for the National Plan of Action – Seabirds (MPI 2013).

In 2013/14, liaison officers were deployed in the snapper (*Pagrus auratus*) bottom longline fleet in Fishery Management Area 1 (FMA1) with a focus on seabird bycatch reduction. The success of this programme led to its continuation in 2014/15 (Goad and Williamson 2015). With the programme bedded in for two years, another two-year term was planned as Conservation Services Programme (CSP) project MIT2015-01. The objectives of this CSP project are:

1. To provide one or more liaison officers to the inshore bottom longline and small vessel surface longline fishing fleets, with a focus on the northern North Island, to assist those fleets in reducing 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.

The first year of this two-year project has concluded. Fisheries that were the focus of liaison and coordination activities in 2015/16 included the snapper and bluenose (*Hyperoglyphe antarctica*) bottom longline fisheries and surface longline fisheries operating in FMA 1, and surface longliners operating out of East Coast North Island ports and on the West Coast of the South Island. As in 2014/15, liaison officers were focused on seabird bycatch mitigation. In particular, their work addressed seabirds identified as being at high and very high risk of unsustainable population-level bycatch impacts due to New Zealand commercial fisheries (Richard and Abraham 2013, 2015). In the northern fisheries, black petrels (*Procellaria parkinsoni*) and flesh-footed shearwaters (*Puffinus carneipes*) were of particular importance in this regard. In other areas, species of particular interest included southern and northern Buller's (*Thalassarche bulleri*), Gibson's and Antipodean albatross (*Diomedea antipodensis gibsoni, D. a. antipodensis*), and white-capped albatross (*Thalassarche steadi*) and Westland petrel (*Procellaria westlandica*). However, it is recognised that bycatch mitigation strategies designed to address the captures of these high-risk species will also benefit other seabird species vulnerable to capture in longline gear.

This report focuses on the second of the two MIT2015-01 project objectives, that is, the coordination of bycatch-related activities amongst liaison officers and initiatives outside the liaison programme. It describes the approach to delivering liaison services in the past year, engagement of those involved in the fishing and bycatch reduction environments, summary findings of vessel contacts, challenges encountered, and recommendations for the next year of the programme. Detailed vessel by vessel findings are addressed in liaison officer reports submitted to CSP.

Methods

Project approach

The project commenced in mid-November 2015. At its outset, reports produced by liaison officers in previous terms were collated and reviewed (Hibell 2003; Johnson 2005; Goad and Williamson 2015), together with additional information on seabird bycatch-related activities underway or recently undertaken in the fisheries of interest. Recommendations for the year's work were compiled, and incorporated as appropriate into the 2015/16 work programme. Ministry for Primary Industries (MPI) fishery managers were also contacted to ensure that liaison activities supported their management objectives and requirements. The vessels that were to be included in the programme were confirmed with Department of Conservation (DOC) and MPI, and also with licensed fish receivers and key industry representatives (e.g., vessel managers).

A critical part of this project was engagement with all stakeholders involved or interested in seabird management and bycatch reduction. At the outset of the project, stakeholders were identified as comprising seven main groups: DOC, MPI, councils, industry (including, for example, fishing companies and licensed fish receivers), non-governmental organisations (representing industry and environmental interests), research providers and iwi. The approach to engagement with different stakeholders was tailored to their interests and the level of involvement they wanted with the programme, as established through contact by phone, email or an in-person visit at the start of the programme. Attendance of the coordinator at other meetings at which stakeholders were present provided numerous informal points of contact throughout the liaison programme. Throughout the project term, information was also supplied to stakeholders on request (with requests received directly or at times via a third party, such as other industry participants or the Observer Services Unit at MPI), and as events of interest occurred.

The scope of the roles and responsibilities of the two liaison officers and the liaison coordinator were confirmed at the start of the project. Broadly, the coordinator role was to focus at the strategic and management levels whereas the liaison roles were designed to focus on vessel-based activities (Appendix 1). At the outset of the liaison programme for 2015/16, at-sea information collection for the programme was to be conducted under the auspices of the Ministry for Primary Industries' Observer Services Unit (OSU) fisheries observer programme. To support the interaction between the liaison team and OSU, Terms of Reference (TOR) were developed to recognise respective roles and responsibilities. The TOR also detailed the protocol for information exchange between OSU and the liaison team. The liaison officers for this project term were also trained observers, and so could go to sea in their capacity as observers and collect information relevant to the liaison programme. As constraints on observer capacity including minimum-length deployments developed, health and safety systems were implemented through CSP to support liaison officers going to sea in that capacity alone (i.e. outside OSU's programme). This allowed at-sea trips that were shorter and only supported liaison activities, rather than the duration of time that OSU required to deliver on observer work more broadly (e.g. including fish catch sampling). Further, one of the liaison officers ceased conducting observer work and instead transitioned to a crewing role in the inshore bottom longline fishery.

To maintain communication between the liaison team and OSU, the liaison coordinator updated a rolling operational plan for the first half of the programme. This identified where liaison activities had been underway, and would be focused in the upcoming weeks. This rolling plan was then superseded by weekly catch-ups conducted with key OSU staff. OSU staff were also requested to update a spreadsheet shared by the liaison team, capturing when they had contact with vessel operators in the process of placing observers and summarising the key points of those conversations. These updates were made intermittently. Liaison staff maintained a spreadsheet of their contacts with vessel operators and stakeholders relevant to the operations of target fisheries. Both groups included a short summary of key points from conversations. This was intended to ensure all involved were aware of the communications that had occurred.

To promote clarity amongst all stakeholders on responses to seabird captures in the fisheries included in the liaison programme, a Capture Event Response Protocol was developed. This described what would happen, who would be involved, and who would be responsible for the various actions, should a seabird capture event of a certain magnitude occur. This protocol is attached at Appendix 2. Its triggers were designed to be precautionary, that is, to flag more capture events than would ultimately be determined to be significant, and thereby provide maximum opportunity to avoid future additional captures. This protocol was part of the briefing notes given to government fisheries observers deployed in fisheries of interest. In addition, observers' weekly reports were forwarded to the liaison coordinator when seabird captures occurred. Triggers were updated during the course of the project (see Results).

Beyond these overarching components of the project methods, the liaison programme took a fishery-specific approach to meeting its objectives, as described in the next sections.

Bottom longline fisheries

Amongst bottom longline vessels targeting snapper (38 vessels) and bluenose (17 vessels) in FMA1, the priority for liaison activities was assigned on a 0 – 4 scale. Priority was assigned based on perceptions about the risks vessels represented to high-risk seabirds. The liaison officers' perception of risk was based on the location of fishing, operational characteristics (e.g. gear configuration, where known) and other information collected in previous years relating to vessel-based seabird bycatch mitigation strategies (e.g. content of vessel-specific Seabird Management Plans and attitudes of skippers and crew to seabird bycatch). Vessels identified as 0 priority were not active in the fleet currently but considered likely to return at some point in the future. Priorities were reviewed based on new information approximately every three months. Vessels ranked at priority levels 3 or 4 were targeted for in-person visits by the liaison officers, whereas those ranked 1-2 were to be contacted more opportunistically as the programme progressed. Sea time was also sought on vessels ranked as priority 3 or 4 rather than lesser rankings. To facilitate their approaches to vessels, liaison officers identified some materials they considered would be useful to the skippers and crews of vessels they were visiting, such as holographic tape and orange plastic noodle material used to construct tori line streamers.

In the focal bottom longline fisheries, vessel-based liaison efforts were reflected in the development or updating of Seabird Management Plans (SMPs) (Appendix 3). These Plans were put in place on most bottom longline vessels active in FMA1 in the previous year of the liaison programme. Their intent was to document practices employed day to day that are intended to manage seabird bycatch risk, or address the level of that risk. Liaison officers collected sufficient information in the course of their duties such that SMPs could be updated if these no longer reflected the operational practices currently used aboard vessels. Updated SMPs were agreed with vessel operators and then committed to record.

Government fisheries observers were also tasked with collecting information relevant to seabird bycatch risk and specifically SMPs. Observers were briefed and debriefed by the liaison coordinator prior to and following their deployments. This briefing covered tasking related to the liaison programme, as well as bigger picture issues behind the establishment of that programme. Observers were also given a briefing and data collection document from the liaison programme, a copy of the SMPs for vessels they were to spend time on, and a set of key messages to support their discussions with vessel operators, managers, skippers and crew. In essence, key messages were designed to address what the liaison team, DOC and MPI considered might be frequently-asked questions from fishers (Appendix 4). When the liaison programme commenced in 2015, the presence of at-risk seabirds in FMA1 meant that an immediate start to the work programme was desirable. Therefore, only minor alterations were made to the approach to information collection used in 2014/15 for bottom longline fisheries (Goad and Williamson 2015). The coordinator was then available on-call throughout observer deployments to address questions from observers as they arose. Observers also passed on questions from vessel operators to the coordinator, where they were unable or felt unprepared to answer these themselves. The coordinator would pass an answer back through the OSU Fisheries Observer Officer to the observer, directly to the observer via phone or email, or contact the skipper or vessel operator again via phone or email. Following observer deployments, OSU staff forwarded observer information that was relevant to the liaison programme to the coordinator.

Liaison officers then used information collected by observers as an independent review of the operational practices documented in SMPs. Where information observers recorded did not match the SMPs, the liaison coordinator contacted observers to confirm details and the liaison officers contacted vessel operators to discuss this. Information confirmed as in need of update was followed up by the liaison officer who revised the SMP with the vessel operator.

In addition to liaison officers being in contact with fishers directly, the liaison coordinator had significant contact with fishers throughout the project term. This included talking with fishers about government policy, observer coverage, the seabird risk assessment, bycatch mitigation methods, recent mitigation developments, and a myriad of other issues. Some fishers were spoken to just once, whereas contact with others occurred on an ongoing basis through the season. Fishing company representatives and licensed fish receivers were other especially important points of contact for the coordinator.

Surface longline fisheries

The surface lining vessels included in the programme were considered of equal priority from the start of work. The number of vessels included was 38 by the end of the project for 2015/16. Again, to facilitate their approaches to vessels, the liaison officer interacting with surface liners distributed materials that he considered would be useful to the skippers and crews of vessels, including tori lines, tori line construction materials, and bolt-cutters (intended to be used for removing hooks from seabirds).

Liaison officers initiated contact with selected surface longline vessels in the 2014/15 year of the programme. The information collected during those preliminary contacts was reflected in a short report prepared for each vessel. For 2015/16, MPI fishery managers responsible for the surface longline fishery sought a more structured and repeatable approach and an Operational Plan (OP) template was developed to address this need (Appendix 5). The liaison officer made contact with vessel operators to collect information necessary to complete OPs. Licensed fish receivers and vessel management were especially important points of contact for the coordinator.

Similar to in the focal bottom longline fisheries, government fisheries observers were tasked with collecting information relevant to seabird bycatch risk and to support liaison officer completion of OPs. When possible, observers were briefed by the liaison coordinator prior to their deployment. This briefing covered tasking related to the liaison programme, as well as the broader context of the issues behind the establishment of the programme. Observers were also given a briefing and data collection document from the liaison programme (Appendix 6), as well as a set of key messages specific to the surface longline fishery, to support their discussions with vessel operators, skippers and crew (Appendix 7). As for bottom longline fisheries, the coordinator was then available on-call throughout observer deployments to address observers' questions. Observers also passed on questions from vessel operators to the coordinator, and the coordinator would pass an answer back through the OSU team, the observer or contact the skipper or vessel operator directly.

Other fisheries

The FMA 1 snapper and bluenose bottom longline fisheries and the FMA1 and 2 and West Coast South Island surface longline fisheries were the focus of the liaison programme in 2015/16. However, the liaison coordinator also maintained an overview of capture events relating to very high and high risk seabird species in other inshore fisheries (e.g. FMA1 inshore trawl). During the project term, the coordinator at times provided information to government officials, observers, fishery managers, and fishers on seabird-related happenings and bycatch mitigation strategies in these other fisheries.

Results

Bottom longline vessels

Management of seabird capture risks

Vessel contacts made by liaison officers amongst FMA1 bottom longliners targeting bluenose and snapper are shown in Tables 1 and 2 respectively. Liaison officers had up to 4 contacts with bluenose vessels and up to 12 contacts with snapper vessels. Contacts were largely made in person or on the phone. Some contact also occurred by email or over vessels' radios. One liaison officer worked as a crewman on two vessels, and consequently had daily input into their seabird bycatch risk management during his time aboard.

SMPs were updated in 2015/16 for 10 vessels targeting bluenose and 16 vessels targeting snapper (Tables 1, 2). Where practices documented in SMPs changed between 2014/15 and 2015/16, changes include measures that will reduce capture risk (e.g., increased line-weighting or more extensive use of a tori line) and also measures that are expected to increase capture risk (e.g., reducing line-weighting). Of SMPs for bluenose reviewed in 2015/16, 50% changed between 2014/15 and 2015/16. For snapper vessels, this figure was 70%.

Table 1. Summary of activities focused on longline vessels targeting bluenose (*Hyperoglyphe antarctica*) in FMA1, including contacts made by liaison officers ((LO) by phone, email, vessel radio, in-person, and at sea), coverage of vessels by government fisheries observers and Seabird Management Plan (SMP) status including changes to SMPs between 2014/15 and 2015/16. (NC = no change to SMPs between years).

Vessel	Total LO contacts	Phone/email/ radio contacts	In-person contacts	Govt observer	Liaison sea-time	SMP 2014/15	SMP 2015/16	Changes to SMP
B01	1	1	0	N	N	Y	N/A	Not fishing
B02	2	0	3	N	N	Y	Y	Slight increase in line-weighting
B03	0	0	0	N	N	Y	N	
B04	0	0	0	N	N	Y	N	
B06	4	3	1	N	N	Y	Y	NC
B07	2	0	2	N	N	Y	Y	NC
B08	3	2	1	N	N	Y	Y	NC
B11								Not active in FMA1
B12	1	0	1	N	N	Y	Y	NC
B13	1	0	1	N	N	Y	Y	1 additional hauling measure (sink hooks on line-break)
B14	1	0	1	N	N	Y	Y	Increased line weighting, increased use of tori line
B15	1	0	1	N	N	N	N	Not active in FMA1
B16								Not fishing
B17	1	1	0	N	N	Y	N	
B18	3	1	2	Y	N	Y	Y	Increased weighting, more reactive mitigation measures listed, one haul mitigation measure added, increased used of tori line
B19	4	2	2	N	N	N	Y	New SMP
B20	4	2	2	N	N	Y	Y	NC

Table 2. Summary of activities focused on longline vessels targeting snapper (*Pagrus auratus*) in FMA1, including contacts made by liaison officers ((LO) by phone, email, vessel radio, in-person, and at sea), coverage of vessels by government fisheries observers and Seabird Management Plan (SMP) status including changes to SMPs between 2014/15 and 2015/16. (NC = no change to SMPs between years).

Vessel	Total LO contacts	Phone/email/ radio contacts	In-person contacts	Govt observer	Liaison sea-time	SMP 2014/15	SMP 2015/16	Changes to SMP
S02	2	1	1	N	N	Y	Y	NC
S03	10	7	3	N	Y	Y	Y	Reduced line-weighting, one new haul measure added
S05	4	2	2	Y	N	Y	N	
S06	6	5	1	Y	N	Y	N	
S07	1	0	1	N	N	N	N	
S09	8	5	2	N	N	Y	N	
S11	0	0	0	N	N	Y	N	
S12	2	0	2	Y	Y	Y	N	
S13	7	5	2	N	N	Y	N	Not fishing
S14	7	5	2	N	N	Y	N	No longer fishing
S15	5	2	3	N	N	Y	Y	Change in vessel ownership; change in weighting approach but broadly similar weighting regime; fewer reactive measures and a less inclusive haul measure
S16	2	1	1	N	N	Y	N	
S18	2	1	1	N	N	N	Y	New SMP
S19	5	0	1	N	Y	Y	Y	NC
S22								Not active in FMA1
S24	1	0	1	N	N	Y	Y	NC
S26	2	1	1	N	N	Y	Y	NC
S27	1	0	1	N	N	N	N	Not fishing
S28	0	0	0	Y	N	Y	N	
S29	2	0	2	N	N	Y	N	
S30	10	0	10	N	Y	N	N	No longer longlining
S31	7	2	5	Y	N	Y	N	
S32	2	0	2	N	N	Y	N	No longer fishing
S33	7	3	4	N	N	N	Y	New SMP
S34	2	2	0	Y	N	Y	N	
S36	5	4	1	Y	N	Y	Y	Increased line-weighting, less use of day setting, more use of tori line, 3 more reactive measures, 1 haul measure added
S38	4	1	3	Y	N	Y	Y	Increased line-weighting, 3 fewer reactive mitigation measures in place
S39	3	0	3	Y	N	Y	Y	Reduced line-weighting, one reactive measure added (adding weight)
S40	7	4	3	Y	N	Y	N	
S41								Not fishing
S42	2	0	2	Y	N	Y	N	
S43	3	1	2	Y	N	Y	N	
S44	7	5	2	Y	N	Y	Y	Increased spacing of weights and floats, one less reactive measure
S45	2	1	1	Y	N	Y	N	

S46	12	10	2	Y	Y	Y	Y	Reduction in tori line use (day and when deemed necessary), 1 additional haul measure; generally tighter description of practices
S47	7	5	2	Y	Y	Y	Y	1 weighting regime added for operations in deeper water
S48	6	1	5	Y	N	Y	Y	Increased line-weighting, not prepared to use tori line at night
S49	2	0	2	Y	N	N	Y	New SMP this year

Operational strategies relevant to managing seabird capture risk and documented in SMPs were diverse. For example, vessel operators recorded their practice as using tori lines for all day sets, when deemed necessary, or that they "commit to using a tori line, of an appropriate design to the vessel, for all setting activity where the conditions allow." For line-weighting, practices also differed widely amongst vessels. For example, weight and float placement strategies included:

- 0.7 kg weights every 24 m without floats at a setting speed of 3 knots,
- 1 – 1.5 kg weights every 120 m (30 hooks) or 60 m (15 hooks), with 130 mm hard floats on 1.8 – 4 m long droppers, at a setting speed of 5 knots, and,
- 3.3 kg lead weights every 150 m (with one float if fishing over rough ground) or every 75 m with no floats, at a setting speed of 8 knots.

Reactive mitigation measures documented in SMPs included adding more weight to the line when a seabird capture was observed, suspending setting until birds leave the area where baits enter the water, reducing setting speed to promote line-sinking closer to the vessel (thereby improving tori line coverage of sinking hooks). Willingness to stop setting altogether is also documented in SMPs, when measures therein are not considered to have resolved capture risk.

From November 2015 - September 2016, there were no seabird capture events reported to the coordinator that triggered the Capture Event Response Protocol in the FMA1 bottom longline fishery.

Observer feedback

In FMA1, 204 observer days were achieved on longline vessels targeting snapper and bluenose in 2015/16 (M. Baird, pers. comm.). During the season, the liaison coordinator spoke with fishers reluctant to take observers and those who had questions about the role of observers and the liaison programme. Questions typically focused on the government's need for ongoing observer coverage when some vessels had been observed in the past, the spread of observer coverage across vessels in the fleet, the need for coverage given perceptions of low levels of seabird captures, the duration of coverage sought, and how the roles of observers and liaison officers interfaced. Broader issues raised by fishers included how the seabird risk assessment worked and linked to observer activities being undertaken or wider government policy, and concern about the proposed recreational fishing parks both in terms of lost fishing grounds and also because commercial fishers will move outside the park, thereby potentially creating increased risk for already high risk seabirds (due to the likelihood of these birds having greater exposure to commercial fishing effort). Issues of maritime safety were also raised by fishers in relation to carrying observers, and the liaison coordinator passed these on to MPI OSU staff to address.

In addition to the information that related specifically to SMPs and bycatch issues more broadly, feedback relevant to the liaison programme gathered from observers during debriefs following their at-sea deployments included that:

- Meeting fishers together in ports prior to the start of the liaison programme would be beneficial for clarifying roles and objectives for the upcoming season. This could be undertaken, for example, in conjunction with meetings of fishers' associations, and during periods when licensed fish receivers

were closed. At these meetings, providing a summary document describing the previous year's activities would be beneficial. Having OSU staff present would also be valuable to clarify observers' past and future activities in the same session.

- There is still significant room for improvement in terms of how some fishers view or value seabirds. Attitudes that were encountered ranged from anger, annoyance or apathy to strong interest and appreciation.
- Some fishers were not familiar with the legal requirement to report non-fish bycatch.
- Mentoring of less experienced and younger skippers would be beneficial to increase their knowledge and confidence in seabird risk management. Observers reflected that less experienced skippers were unsure of how to manage capture risks effectively, and that this lack of confidence often applied to other aspects of the fishing operation as well.
- Turnover amongst skippers and crew meant that the retention of knowledge on-board vessels was often short-lived. Turnover resulted from many factors including mismatches in personalities between skippers and crew, who work together very closely on smaller longline vessels. This means that liaison efforts must be ongoing and at times repetitive, to ensure that messaging is retained in practice despite turnover in on-board personnel.
- Liaison officers visiting with useful supplies for fishers was appreciated, e.g., tori line construction materials.

Observers were also informed by vessel operators that the pressure experienced in response to catching seabirds creates a strong incentive not to report captures.

Surface longline vessels

Management of seabird capture risks

Liaison officer contacts with surface longline vessels are summarised in Table 3. The liaison officer made up to six contacts with surface longline vessels, with contact made both on the phone and in person in ports and at meetings. Liaison efforts with surface longline vessels were also facilitated by the Deepwater Group (DWG) Seabird Liaison Officer. Vessel T33 was especially relevant in this regard, and involved working with the vessel operator and crew to improve the tori line and safely deploy line-weighting following the capture event reported below. That vessel is encompassed in DWG's bottom lining fleet, and switched to surface lining during the project term.

The creation of Operational Plans for surface longline vessels was a key output for the liaison officer in 2015/16. These Plans built on preliminary work done in 2014/15 that endeavoured to document vessel operator accounts of their vessel-based practices that related to seabird bycatch risk.

At the conclusion of the liaison work programme for 2015/16, Operational Plans were finalised for 18 vessels, and Plans were in draft form for another three vessels. For these vessels, measures identified by fishers as part of their approach to addressing seabird bycatch risk are summarised in Table 4. All Plans include tori line usage and night-setting. Weighting at the clip and on float ropes was also found to be relatively common. All operators used squid bait, with some reflecting that they changed bait used in accordance with target species or the perceived risk of seabird captures. Two other particularly common operational measures that were included in Operational Plans were the retrieval of hooks at a speed matched with that of the snood-pullers and hauling above gear (consequently snoods were not in surface depths for prolonged periods at hauling).

Table 3. Summary of activities focused on surface longline vessels operating in northern New Zealand and off the West Coast of the South Island, including contacts made by liaison officers ((LO) by phone, email, vessel radio, in-person, and at sea), and coverage of vessels by government fisheries observers. The liaison officer working with surface liners did not go to sea on surface liners in a liaison capacity. Instead, sea-time was completed in the observer role.

Vessel	Total LO contacts	Phone/email/ radio contacts	In-person contacts	Govt observer	Approached 2014/15	OP 2015/16
T1	4	2	2	Y	Y	N
T2	4	3	1	N	Y	N
T3	2	1	1	Y	Y	Y
T4	1	0	1	Y	N	Y
T5	2	1	1	Y	Y	Y
T6	2	1	1	N	N	Y
T7	0	0	0	N	N	N
T8	1	0	1	N	Y	Y
T9	0	0	0	N	N	N
T10	6	2	4	N	Y	Y
T11	0	0	0	N	N	N
T12	3	1	2	N	Y	Y
T13	2	1	1	N	Y	Y
T14	3	1	2	N	Y	Y
T15	0	0	0	N	Y	N
T16	0	0	0	N	Y	N
T17	1	0	1	N	N	N
T18	5	4	1	N	N	Y
T19	5	2	3	Y	N	N
T20	0	0	0	N	N	N
T21	1	0	1	Y	N	D
T22	4	2	2	Y	N	N
T23	1	0	1	Y	N	D
T24	2	1	1	N	N	Y
T25	4	1	3	N	N	N
T26	2	1	1	N	Y	Y
T27	1	1	0	Y	N	N
T28	6	2	4	Y	N	N
T29	3	2	1	Y	Y	Y
T30	0	0	0	Y	N	N
T31	1	0	1	Y	N	D
T32	5	3	2	Y	N	Y
T33	3	2	1	Y	N	Y
T34	0	0	0	Y	N	Y
T35	5	2	3	Y	N	N
T36	2	2	0	Y	N	Y
T37	0	0	0	Y	N	N
T38	1	0	1	N	N	Y

Observer feedback

Observers reported a range of approaches and attitudes to seabird issues from time spent on deployments amongst the surface longline vessels included in the liaison programme. While some skippers and crews reflected positive attitudes to seabirds, others viewed seabirds as problematic (in particular, if crew attention was required to manage seabird issues). Some observers reported that skippers were reluctant to discuss information comprising the content of Operational Plans. The occurrence of several significant bycatch events (see next section) and potential compliance breaches on surface longline vessels during this liaison term is expected to have affected interactions between the liaison officer, observers and fishers. For example, following the first cluster of significant bycatch events, some fishers' interest and awareness of seabird bycatch reduction measures increased. Observers were sometimes asked for information on bycatch reduction approaches (which the coordinator could provide back to the vessel operator or observer next port call). Fishers often conveyed to observers that they felt pressure on the management of other elements of this fishery as well as seabirds (e.g., sharks).

Observer information reflected a range of construction materials and designs amongst tori lines, and at times worked with crews to improve these to increase the efficacy of tori lines. Tangling of tori lines with fishing gear was a particular concern, both during normal conditions and particularly in rougher weather.

Observers reflected that seabird handling on some vessels could be improved. For example, birds were handled roughly or with undue force, and crew removed hooks from seabirds on occasion when hooks had been swallowed (rather than cutting the snood and leaving the hook lodged). As found in bottom longline fisheries, some fishers appeared unaware of the legal requirement to report seabird bycatch.

At times, delays in receiving observer information meant follow-up with observers was approached by email or on the phone when necessary.

Capture event response incidents

During the 2015/16 liaison programme, capture events reported from four surface lining vessels triggered the Capture Event Response Protocol (Appendix 2). All events were reported by government fisheries observers, including one event that was also reported by the vessel's licensed fish receiver. In addition, there was one observed trip on an inshore trawler that was handled by the coordinator (without follow-up from the liaison officers, given the trawl fishing method). Following the third event, DOC and MPI met to revise the capture triggers at which observers would report from sea (in addition to their normal weekly reports). The revised triggers are attached at Appendix 8.

Vessels that triggered the response protocol were:

- Surface longline vessel T3:
  Six albatrosses and petrels caught 30 November – 17 December 2015, off the East Coast of the North Island.
- Surface longline vessel T32:
  40 albatrosses captured between 18 – 24 April off the West Coast of the South Island.
  This vessel subsequently captured an additional 10 albatrosses and petrels during observed trips, with two and eight captures occurring between and 29 April – 2 May and 23 – 25 May respectively.
- Surface longline vessel T33:
  27 albatrosses and petrels captured between 30 April – 9 May off the West Coast of the South Island.
- Surface longline vessel T19:
  10 albatrosses and petrels captured from 8 – 30 April, off the West Coast of the South Island.
- Inshore trawl vessel A:
  15 flesh-footed shearwaters and petrels, including black petrel, caught in FMA1 14 April – 3 May.

Table 4. Summary of measures reported as in use on surface longline vessels, and intended to reduce seabird bycatch risk. This summary covers the 21 vessels for which Operational Plans were developed in 2015/16.

Measure	Number of vessels	Comments
Weighting on snood clips	13	Weighted swivel (generally 60 g) swivel on ≥90% of clips
	2	Weighted swivels on ≥50% and < 90% snood clips
	1	Weighted swivels at clip (38, 45 or 60g) (50% of snoods)
Weighting on float rope clips	11	Weighted swivel (generally 60 g) on some or all float rope clips
Weighting on the snood	1	Weighted swivel On approx. 20% of snoods 1
	2	Weighted swivels on ≥50% snoods
	1	40 or 60 g sliding weights 1 fathom from hook (50% of hooks)
Tori line	21	(Weather and safety were identified as conditions factored into whether tori lines were deployed on 2 vessels).
Bait types (e.g. squid, sanmar, etc)	1	Squid during times of higher risk
	19	Squid
	6	Sanmar
Bait thawed	21	
Dyed bait	3	Users reported implementing this measure sometimes, not every set.
Mitigation device used at the haul	1	Tow a float at times
	1	PVC tube to dangle hard float over snoods during retrieval
Discharge of offal		Out sea door
	10	- while moving through water
	1	- while hauling
	1	- while processing
	1	- immediately after processing
	1	On opposite side to hauling station
	3	Retained during haul if possible
	1	Retained until break in hauling
	1	Batch discarded
	1	Straight over side
Discharge of used bait	4	Retained at times
	1	Retained then batch discarded
	1	Retained until break in hauling
	7	Hold baits during haul
Line shooter	4	(including 1 in rough weather)
Other measures used that may reduce the risks of seabird capture	4	Cast baits or deploy snoods directly under tori line
	3	Cast bait close to stern with minimal splash
	1	Cast hooks into propeller wash
	21	Night setting
	1	No snoods near floats
	18	Slack deployment of snoods
	1	- during rough weather
	1	- outside wake
	1	- into propeller wash
	1	- at times
	10	No brake/low tension on drum, slack deployment of backbone
	14	Haul on top of gear raising snoods rapidly from fishing depth
	16	Management of vessel lighting
	19	Hooks retrieved immediately as haul speed matched with snood pullers/snoods not dragged
	3	Shoot during periods when birds are less active
	1	Minimal use of lightsticks (1-2 per basket)
	1	Setting on arrival at fishing grounds (reducing time for birds to be attracted to vessel before setting starts)
	1	Side-setting
	1	Move away from areas in which birds damage floating SWO
	1	“Isolate birds from fishing activity”

As described in the protocol, follow-up to these events included the coordinator making contact with those reporting captures, to collate all available information on the event itself and documenting the responses of those involved. For the capture events above, key resultant actions were as follows:

- Surface longline vessel T3:
  The coordinator spoke with the observer onboard the vessel and made contact with the vessel's licensed fish receiver to confirm details and seek any additional information. The licensed fish receiver followed up with the skipper and vessel owner, and a liaison officer contacted the skipper. A tori line was in use on this vessel and setting occurred at night. In response to the incident, the skipper stopped using sanmar bait when fishing in what he identified as high-risk areas for bird captures and moved south to continue fishing. He will also attend a Seabird Smart workshop when next available. The licensed fish receiver has ceased stocking sanmar bait, which is widely believed to increase the risk of petrel and shearwater captures.
- Surface longline vessel T32:
  This vessel set at night, and captures occurred in part over a period including full moon. A tori line was not used. The skipper had completed a Seabird Smart Workshop. Following the captures occurring, the licensed fish receiver alerted the coordinator to the incident. He also contacted the vessel owner and skipper to investigate. MPI Compliance officers attended the vessel in port. The liaison coordinator and licensed fish receiver maintained ongoing information exchange as details surrounding the captures emerged. The coordinator also contacted the government fisheries observer on the vessel. Following the vessel's next port call, the coordinator contacted the relief skipper who went out on the vessel next, to discuss mitigation approaches and sources of assistance should the need arise. The seabird liaison officer made a tori line to take to the vessel for its subsequent port call, when he went aboard the vessel in his capacity as a government fisheries observer, and remained onboard the vessel through the next moon cycle. When the vessel returned to sea with the liaison officer onboard as an observer, the ensuing eight captures prompted the vessel to relocate to the east coast of the North Island to continue fishing there. No further captures were recorded. Throughout this time, the licensed fish receiver and skipper maintained contact on an ongoing basis.
- Surface longline vessel T33:
  A seabird liaison coordinator and liaison officer worked with DWG to resolve issues on this vessel, which is also part of the ling longlining fleet that DWG oversees. Captures occurred despite the use of a tori line and night-setting. Snoods were weighted at the clip. Responses to captures included DWG's seabird liaison officer arranging for an experienced skipper to contact the vessel skipper to talk through gear operations. DWG's seabird liaison officer also made a new tori line for the vessel and worked with the crew on implementing line-weighting when the vessel returned to sea. The crew also tried setting gear alongside the vessel to provide a longer time interval for it to sink, prior to being exposed beyond the vessel stern. DWG's liaison officer has maintained contact with the vessel on an ongoing basis.
- Surface longline vessel T19:
  On this vessel, seabird captures occurred singly over time. The gear was set at night and a tori line was in use. The observer reported that there was discussion aboard the vessel regarding acquiring weighted gear. The liaison officer visited the vessel and the vessel operator and discussed their operation with a view to developing an Operational Plan for managing seabird risk.
- Inshore trawl vessel A:
  The liaison coordinator was in contact with the observer on-board this vessel to discuss the event and possible factors leading to captures. The observer considered that squid stuck in the net meshes was attracting birds to the net and they then became captured. There was no net cleaning occurring between shots. The vessel's relief skipper considered also that when the net was hauled using a stop-start approach leaving it slack in the water (as was the case during captures), the capture risk was greater than when the net was kept consistently taut during the haul. The vessel did not have a

management plan on-board. The skipper reported using common sense to manage seabird capture risk but no specific actions were identified. The coordinator contacted the vessel's licensed fish receiver, who subsequently made contact with the vessel skipper to discuss the event and possible exacerbating factors.

Stakeholder liaison

The liaison coordinator role included ongoing liaison with stakeholders in industry, government and non-government organisations. This occurred through attending and updating formal meetings of seabird- or fisheries-focused groups, for example, the Black Petrel Working Group, the Seabird Advisory Group, a Seabird Smart Workshop, and MPI's Highly Migratory Species (HMS) meetings. (One of the liaison officers also attended an HMS meeting). Beyond those meetings, ongoing engagement with stakeholders has been undertaken on an informal basis, including phone calls, emails and in-person visits. Amongst industry, vessel managers and licensed fish receivers were particular focal points (e.g., Moana New Zealand (formerly Aotearoa Fisheries), Leigh Fisheries, Bay Packers, Hawkes Bay Seafoods, Talley's Group Ltd, Solander Group and Sanford Ltd). Non-government industry groups have included Fisheries Inshore New Zealand (FINZ), DWG, and Seafood New Zealand. Southern Seabird Solutions, Forest and Bird and Birdlife International were the main non-government environmental groups connecting with the liaison programme.

Information sharing with vessel operators and industry stakeholders at the start of the liaison programme was at times frustrated by requirements for data confidentiality, in particular when vessels were owner-operated. However, this situation has progressed since programme initiation, such that MPI and FINZ now have a data sharing agreement, and FINZ is exploring developing their relationship with quota and permit holders in this regard.

Discussion

Liaison programme objectives

The liaison programme is focused on reducing seabird bycatch risks. This incites an approach of continuous improvement amongst vessel operators in terms of bycatch risk management strategies. Seabird Management Plans for bottom longliners and Operational Plans for surface longliners are a key part of that approach, in that these documents articulate actions taken by fishers every day in the course of normal fishing operations to manage the risk of seabird captures. Where SMPs changed between the 2014/15 and 2015/16 season, not all changes would be expected to reduce bycatch risks. For example, in some cases, line-weighting was reduced. The variation in tori line usage amongst operators also illustrates that there is scope for further development of mitigation strategies and also scope to transition these from reactive to proactive in operation. For example, best practice would stipulate the use of a tori line every set (safety permitting) (ACAP 2014a), rather than only on day sets or when deemed necessary.

For surface longliners, OPs are a new component of the 2015/16 liaison programme. These represented a significant improvement in terms of documenting practices that vessel operators reported using on vessels. At times, observers were unable to confirm the practices in the Operational Plans. However, Plans usefully start to reflect areas where practices could be changed to reduce seabird bycatch risks. Increasing the use of line-weighting (closer to hooks in particular) and better management of offal and used bait discharge would reduce bycatch risk on many vessels. While all operators reflected that they used tori lines, designs and construction materials could often be improved.

Liaison officer roles are focused on education, building awareness and information- and knowledge-sharing. Officers can encourage but not enforce operational improvement. Therefore, the back-up of others in government and industry is required to motivate and support change. This year, licensed fish receivers were a particularly important contributor in that regard. It is recommended that their involvement in the liaison programme is fostered and continues to grow. Likewise, as FINZ's remit is developed, a significant opportunity exists to draw on their ability to share information and exert positive pressure for progressing seabird bycatch issues within industry.

Monitoring by fisheries observers was also a key contributor to the liaison programme this year. Observers greatly increased the scope of information collection from sea, and provide a key feedback loop to liaison officers in terms of how fisheries operate through longer periods at sea. Increasing monitoring wherever possible to improve our understanding of bycatch risk and also the verification of SMP and OP approaches is strongly encouraged.

This year, the liaison team was based in Wellington, Tauranga and Whitianga. A geographic split in capacity worked well amongst the more northern fisheries, but created some issues with attending to fisheries further south given travel costs and logistics. While liaison officers were better placed to visit fishers (including at relatively short notice) in FMA1 fisheries, the more distant fisheries (in particular on the West Coast of the South Island) were more problematic. Therefore, a key recommendation from this year's work is to revisit the geographic distribution of liaison officers, to provide for the implementation of capacity closer to vessels accessing the West Coast South Island surface lining fishery.

A coordination base in Wellington worked especially well for liaison with government and some stakeholders, and for meeting observers for briefing and debriefing purposes as they passed through MPI. For other stakeholders (e.g. LFRs), travel for in-person visits and/or electronic contact was required.

Fisheries in scope for the liaison programme

In 2015/16, the scope of the liaison programme was bottom and surface longliners in FMA 1, and surface liners operating off the East Coast of the North Island and the West Coast of the South Island. These fisheries warrant coverage with liaison officers given their interactions with at-risk seabirds. However, these same seabird species are being caught by other vessels operating in the same areas that are not in-scope for liaison activities this year. Of particular interest in this regard are inshore trawlers in FMA1. The incident with inshore trawl vessel A highlighted that bycatch risks could be better understood and addressed with information gathering, knowledge sharing on bycatch reduction measures and ongoing contact by liaison staff. This fishery has not been extensively covered by fisheries observers in the past, and so seabird bycatch risks are not well understood. Similarly, considering expanding the geographic reach of the liaison programme to FMA9 in future is recommended, pending a review of the state of knowledge of vessel operations and seabird bycatch patterns in that area.

Recommendations

The coordinator's recommendations for the 2016/17 liaison programme are as follows:

- As appropriate to region, the liaison team should meet fishers in ports at the start of the season's work, to clarify roles and objectives and the interface of liaison officers and observers. A representative of MPI's OSU should also be in attendance with the liaison team. Meetings could be held at fisher's associations and during periods when licensed fish receivers are not operating (to maximise the likelihood of fisher attendance). Licensed fish receivers and permit holders should also be contacted by letter in advance of the liaison programme commencing, to inform them of its objectives, scope and points of contact.
- Have liaison officers spend time at sea purely in their liaison capacity, not as fisheries observers. The two roles are distinct and perceived overlap has created some confusion amongst fishers in 2015/16. In addition, liaison officers need to be available at short notice to respond to capture events.

- Wherever possible, increase the level of monitoring of focal fisheries (by observers or other mechanisms, e.g., cameras). Verification of information on fishing operations is critical to understanding bycatch risk and demonstrating the integrity of SMPs and OPs.
- Support FINZ's initiatives to implement information-sharing agreements with quota owners and permit holders, such that the liaison team can freely feed information back to those in industry with the ability to influence at-sea operations.
- Prioritise a certain number of vessel operators with whom the liaison officers will be particularly closely involved in 2016/17. These would be operators with a history of seabird bycatch issues, or operational practices that appear to be amongst the least effective in terms of managing bycatch (e.g., particularly light line-weighting in bottom longline fisheries, reluctance to use tori lines in bottom or surface longline fisheries). The goal of this involvement would be to produce a demonstrable improvement in seabird bycatch risk management on these vessels by the end of the liaison term. For example, vessel operators might commit to using a tori line on all sets or increasing their line sink rate by 20% (and liaison officers would facilitate this through spending time at sea on the vessel).
- Liaison officers should maintain some familiarity with turnover amongst skippers and crew during their interactions with vessel operators, and confirm that information on bycatch reduction strategies is being passed on to new personnel.
- Maintaining liaison coordination capacity in Wellington provides a convenient base for briefing and debriefing government fisheries observers before and after their deployments at sea. This could be usefully continued.
- At the start of the liaison programme, the coordinator should meet with MPI's OSU team (management and Fisheries Observer Officers) to confirm roles and responsibilities, the objectives of the liaison programme, and documentation for government fisheries observers going to sea in support of the programme. Then, weekly meetings with the OSU team should continue throughout the programme.
- Consider expanding the fisheries covered by the liaison programme to include FMA1 inshore trawl.
- Review the state of knowledge on seabird captures and vessel operations in FMA9, with a view to conducting future liaison efforts there.
- Provide for more visits by liaison officers to vessel operators during the programme, for example, by restructuring the geographic spread of the liaison team. In particular, having a liaison officer based closer to the vessels surface lining off the West Coast of the South Island is recommended.
- Continue to support liaison visits with materials of practical use to fishers for bycatch reduction, e.g. tori line materials and fact sheets.
- Maintain and grow the involvement of industry influencers, especially licensed fisher receivers and representative bodies (e.g. FINZ)
- Provide monthly updates on liaison work online (e.g., on the DOC website). This foundation of information can then be augmented by communicating with specific stakeholders on items of particular interest to them.

Acknowledgements

This report could not have been written without the work of liaison officers Dave Goad and Jamie Williamson. Overall, the seabird liaison work programme has been supported by many people. The author thanks vessel skippers and crews for their willingness to discuss seabird issues and operational practices with the liaison team. This information is critical and provides the core of the liaison programme. In addition, the contribution of government fisheries observers is greatly appreciated, through their detailed information collection and feedback on seabird issues as one part of their own busy work programme. Amongst industry, the author thanks fleet and vessel managers and licensed fish receivers for their openness and willingness to contribute to the programme, and efforts to progress its objectives. The contributions of FINZ and DWG are also much appreciated in that regard. The author thanks the many others who have contributed to the programme through sharing knowledge, information on their own work, and working with the liaison team where objectives aligned, including, but not limited to the Black Petrel Working Group, Southern Seabird Solutions and Seabird Advisory Group members. Finally, MPI's Observer Services Unit was essential to the success of the liaison programme and their contribution is gratefully acknowledged.

References

ACAP. 2014a. ACAP summary advice for reducing impact of demersal longlines on seabirds. Reviewed at the 8th meeting of the Advisory Committee, Punta del Este, Uruguay, 15 – 19 September 2014. Available at: www.acap.aq/en/resources/bycatch-mitigation/mitigation-advice/198-acap-review-of-mitigation-measures-and-summary-advice-for-reducing-the-impact-of-demersal-longlines-on-seabirds/file

ACAP. 2014b. ACAP summary advice for reducing impact of pelagic longlines on seabirds. Reviewed at the 8th meeting of the Advisory Committee, Punta del Este, Uruguay, 15 – 19 September 2014. Available at: www.acap.aq/en/resources/bycatch-mitigation/mitigation-advice/200-acap-review-of-mitigation-measures-and-summary-advice-for-reducing-the-impact-of-pelagic-longlines-on-seabirds/file

Goad, D. and Williamson, J. 2015. Improving and documenting seabird bycatch mitigation practices in the North Eastern New Zealand longline fishery. Report prepared by Vita Maris for the New Zealand Department of Conservation, Wellington.

Hibell, P. 2005. New Zealand tuna fishery advisory officer report: 1 April 2003 – 30 June 2004. Conservation Services Programme, Department of Conservation, Wellington.

Johnson, G. 2005. Northern snapper longline fishery advisory officer report: 1 April 2003 – 30 June 2005. Conservation Services Programme, Department of Conservation, Wellington.

Kellian, D. 2004. Inshore demersal ling longline advisory officer report: 1 May 2003 – 31 October 2003. Conservation Services Programme, Department of Conservation, Wellington.

Ministry for Primary Industries and Department of Conservation. 2014. Black Petrel (*Procellaria parkinsoni*) and Flesh-footed Shearwater (*Puffinus carneipes*) Action Plan. December 15th, 2014. Ministry for Primary Industries and Department of Conservation, Wellington.

Ministry for Primary Industries. 2013. National Plan of Action – 2013 to reduce the incidental catch of seabirds in New Zealand fisheries. Ministry for Primary Industries, Wellington.

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

Richard, Y. and Abraham, E. R. 2015. Assessment of the risk of commercial fisheries to New Zealand seabirds, 2006–07 to 2012–13. New Zealand Aquatic Environment and Biodiversity Report No. 162.

Appendix 1: Liaison team role descriptions

Coordinator

Seabird conservation initiatives are undertaken by a diversity of individuals and organisations in New Zealand. These initiatives are also of significant broader stakeholder interest, both in New Zealand and internationally. However, effective coordination amongst practitioners and organisations working on seabird issues is often lacking, including when objectives overlap. This has led to inefficiencies in terms of effort expended, and lost opportunities for maximising seabird bycatch reduction outcomes.

The Coordinator role will address this problem. Through ongoing engagement with stakeholders, the Coordinator will maintain a strategic overview of seabird-related activities relevant to the target longline fisheries. The role will also provide an opportunity to influence the development of stakeholder strategies and activities, thereby increasing complementarity and reducing the overlap of different organisations' work.

The Coordinator's role will include the identification and prioritisation of actions that deliver bycatch reduction outcomes. The Coordinator will work with the Liaison Officers, who will lead the implementation of priority actions with fishers on the water.

Specifically, the Coordinator will:

- Engage with stakeholders on an ongoing basis, to maintain a comprehensive strategic overview of their objectives and activities relating to the target fisheries and relevant seabird species. Engagement is expected to include:
    - visits, phone calls, and email communications
    - government agencies (e.g., regional and head offices of DOC and MPI), eNGOs, FINZ, research providers, seafood company management, fisheries observers, etc.
- Identify opportunities for harmonising seabird-related activities in the target fisheries
- Identify and prioritise actions to maximise seabird bycatch reduction outcomes in the target fisheries
- Oversee work plans for Liaison Officers that use their time most efficiently to progress the implementation of identified priority actions. Opportunities to address the objectives of stakeholders in the liaison work programme will also be captured as much as possible.
- Conduct work-planning with liaison officers
- Attend and provide updates to collaborative working groups and other relevant fora
- Provide monthly reporting to Government, and summary reporting to industry
- Briefing, debriefing and supporting observers deployed in the fishery, including conveying the bigger picture context for liaison activities and relevant operational information. This will ensure observers are effective and provide best value.

Liaison Officers

Liaison officers will be responsible for engaging and working with fishers to improve and develop mitigation practices. This will assist fishers in reducing their seabird bycatch. The coordinator role will allow them to concentrate on operational efficiency. Liaison Officers will primarily communicate with skippers, vessel managers and the Coordinator, and concentrate on gaining a good understanding of the fleet and how best to reduce interactions with seabirds.

Liaison officers will implement the work plan including:

- Lead liaison officer to organise workload.
- Conduct port visits to engage the fleet and update and revise SMPs.
- Sea-time through observer programme.
- Additional sea-time on an *ad hoc* basis – responding to captures, developing and trialling mitigation.
- Responding to capture events.

- Assisting skippers with mitigation development and sharing and developing ideas.
- Attending meetings as and when necessary.
- Sourcing, making and distributing mitigation material.
- Real time reporting into an online spreadsheet detailing all contacts made and summary of outcomes.

Appendix 2: Capture Event Response Protocol

Seabird Capture Event Response Protocol

This protocol will be used when 2 or more very high or high risk seabirds are captured in 2 fishing days or less.

Purpose:

This Protocol establishes a series of steps that will be taken following captures of seabirds in northern bottom and surface longline fisheries, and surface longline fisheries operating on the West Coast of the South Island. These fisheries are involved in the Seabird Liaison Programme, run by DOC's Conservation Services Programme with the support of MPI.

In the past, inconsistent responses and unclear channels of communication have constrained the effective management of these events. The Protocol has been developed to:

- streamline responses to significant seabird bycatch events and ensure that all stakeholders are appropriately involved and informed when an event occurs, and,
- identify issues that can be addressed such that the risk of future captures is reduced.

The significance of a seabird capture event is influenced by many factors including the level of risk that commercial fishing represents to the species caught. For example, captures of very high risk species (e.g. black petrel) are more likely to be considered significant than captures of seabird species identified as low risk. Almost certainly, this protocol will highlight some events that are not ultimately deemed significant. However, it is designed to be precautionary to ensure that no significant issues remain undetected.

Who will use this Protocol:

The Seabird Liaison Coordinator (contracted by DOC) is responsible for overseeing the implementation of this Protocol. She will work across those identified in it.

Questions about this Protocol:

Feedback and questions on this Protocol can be directed to Johanna Pierre, Seabird Liaison Coordinator (johanna@jpec.co.nz; 021 908 227).

The Protocol:

****This protocol will be used when 2 or more very high or high risk seabirds are captured in 2 fishing days or less.****

1. Detection of captures:

Government fisheries observers will detect seabird captures during their deployments. As part of their pre-deployment briefing, Observers are instructed to contact MPI's Observer Services Unit (OSU) as soon as possible (given access to communications) following every capture of a very high or high risk seabird (Table 1). OSU and the Seabird Liaison Coordinator (SLC) are sharing information on seabird interactions with focal fisheries on an ongoing basis. This includes investigating the circumstances around every seabird capture.

In addition to this ongoing communication, OSU will specifically notify the SLC as soon as possible following the reported capture of 2 very high or high risk seabirds in 2 fishing days or less on any vessel. OSU will also notify the DOC CSP team and the relevant MPI fishery manager of the captures.

Fisher reports may alert industry bodies (e.g. vessel manager, company, LFRs) and others to seabird capture events. In such cases, those notified are requested to alert the SLC to the event. Circumstances surrounding all captures will be investigated by the SLC and where the 2 in 2 trigger is met, follow-up will occur as below.

Table 1. Very high and high risk seabirds included in this Protocol.

Very high risk seabirds	High risk seabirds
Black petrel	Chatham albatross
Flesh-footed shearwater	Antipodean albatross
Salvin's albatross	Westland petrel
Gibson's albatross	Campbell black-browed albatross
Southern Buller's albatross	
Northern Buller's albatross	
White-capped albatross	

2. Characterising captures:

The focus of this characterisation is to identify and help resolve issues in order to reduce the risk of future seabird captures.

Where captures are reported by a government fisheries observer, the SLC will work with the Observer and OSU to obtain all information relevant to the captures. This will include considering whether the vessel has followed its Seabird Management Plan, if one is in place.

If the vessel has returned to port, the SLC will attend a debrief with the Observer, to consolidate information relevant to the captures documented.

When captures are reported by fishers or LFRs, the SLC will work those involved to consolidate the information base on the captures, mitigation approaches, and any factors that may have contributed to the captures.

If the vessel is still at sea, a Seabird Liaison Officer (SLO) will contact the skipper by phone (if possible) to discuss the captures, factors that may be relevant to the captures, and the SMP (with respect to how it is working to manage captures).

Whether or not the skipper is not reachable at sea, the SLO will also make contact when the vessel is next in port (or reachable by phone).

3. Minimising additional captures:

If the vessel is still fishing, information on fishing practices that may reduce further seabird captures will be relayed to the Observer by the SLC, facilitated by OSU if appropriate. The Observer will discuss mitigation options with the skipper, including how these might fit with the vessel's operations. Where appropriate, uptake of additional measures is encouraged. However, it is recognised that the skipper is not required to use measures beyond those already regulated. The Observer will document any feedback from the skipper, and relay that to the SLC and OSU.

Similarly, when the SLO makes contact with the skipper (on the phone or in port, as above), he will discuss options with the skipper, for additional mitigation measures that may reduce future captures. The SLO will report any feedback from the skipper back to the SLC.

4. Communication about the event:

After a capture trigger is breached, the SLC will circulate an email update of information on the capture event to those involved. This is to ensure everyone has the same fact base describing the capture events. MPI (fisheries managers, Fisheries Officers and OSU), DOC CSP, SLOs, and relevant industry representatives are to be included in this communication. Recipients will be requested to maintain the confidentiality of these circulations, pending the development of a fact sheet by the SLC after the capture event has concluded (see below).

The SLO will make a follow-up call or visit to the vessel at most 5 days after first contacting them regarding the capture event. This call will be to review events since the capture trigger was breached, the additional bycatch reduction measures that were discussed, and assess any changes that may be appropriate to make to the vessel's SMP (or ongoing practice, if an SMP is not in place). The SLO will report findings back to the SLC.

When a capture event has concluded (defined as a vessel returning to port or 5 fishing days passing with no seabird captures and follow-up actions are completed), a stakeholder briefing will be circulated by the SLC. This will be in the form of a fact sheet about the event, and will be prepared with appropriate confidentiality measures in place (e.g. not mentioning the vessel(s) involved by name). It will describe the incident, identify all measures taken to address issues associated with the captures documented, any learnings from the event, and recommendations for future management of such events. In the first instance, the SLC will be the point of contact for queries arising from the circulation of this briefing.

5. Reporting on all capture events:

Capture events will also be reported on as part of the liaison team's normal reporting, that is, monthly progress reporting to DOC and MPI. In addition, the final report on the liaison work programme will include a summary of all events that breached the 2 in 2 trigger. These will be reviewed with the goal of identifying commonalities and to assess how this Protocol performed. Recommendations for any future liaison programme will also be included.

Appendix 3: Seabird Management Plan for bottom longline vessels

Minimising seabird interactions,

Seabird Management Plan

Bottom Longline Fishing

FV XX

Rationale – Working to minimise seabird bycatch to ensure healthy seabird populations and a sustainable fishery.

Fisheries Management Area One (FMA1) is home to a wide range of seabird species. The populations of many of these species are small and as such their sustainability is at particular risk to any mortality, including fishing bycatch. By fishing in this area we recognise that there is a risk of interacting with seabirds and that ***even a few odd captures, when added up over the fleet, can have big impacts.***

By documenting our current mitigation practice in a vessel specific seabird management plan (SMP) we will have an auditable document detailing the commitments we have made to deploying mitigation in a consistent and structured manner. This will also allow the relevant Government and non-Government organisations to understand the mitigation measures we use and to work with us, over time, to develop practical improvements to the effectiveness of our mitigation. By treating each fishing operation individually there is the potential to tailor the seabird mitigation that is best suited to our vessel. Through the seabird liaison officers and our seabird management plan we see the value of sharing mitigation ideas between skippers to help develop the best possible solutions across the fleet.

We recognise that the success of our mitigation strategies is best achieved through the awareness of both captain and crew. This SMP is designed to reflect that through our awareness and proactive actions we are able to minimise the potential for incidental seabird captures.

Vessel Details

Vessel Name

Call Sign

Registration Number

Home port

Fishing Permit Holder

Skipper

Crew

Date reviewed

Mitigation

This section details the mitigation equipment and practices that we employ on FV XX to reduce seabird interactions.

Setting

A combination of line weighting, sink rate and vessel speed contribute to the availability of hooks to birds. The following line setups are employed.

Setting speed	Weight size and type	Weight spacing	Float usage
8 knots	3.3 kg lead	75 m	nil
8 knots	3.3 kg lead	150 m	1 every 150 m

(Floats only used when fishing foul ground)

The same approach to mitigation is applied all year round

Tori line details

We commit to using a tori line, of an appropriate design to the vessel, for all setting activity where the conditions allow.

Reactive mitigation

More weight can be used if a faster sink rate is required. i.e. A perceived risk of bird capture is observed.

If birds do overcome the tori line and gain access to the bait entry point, a weight will be immediately deployed and clipping on suspended until the birds have left the danger zone.

If all measures above have been employed and are visibly not working i.e. birds are continually overcoming the tori line and getting to the bait entry point, then the vessel will stop setting**.**

No bait pieces, whole fish or offal will be discarded for at least one hour before setting

We will reduce lighting to the minimum needed for safe setting through the use of shades and separate lighting

If a bird is observed caught on the surface we will immediately deploy a 2kg+ weight onto the mainline to prevent further captures.

Precautionary approach

The vessel will always use a tori line and weighting above that required.

Hauling

We will hold offal / old baits in a fish bin during the entire haul and discard on completion of the haul.

If we have a break in hauling we will pay out some line to ensure no baited hooks are near the surface.

Ongoing developments

We always try to avoid bird capture.

We minimise the risk of capture by using the best current mitigation that is known and try to think of better ways to isolate our interaction with any seabirds.

Write down any new ideas here:

Guide to Releasing Live Seabirds

On our vessel the crew have been trained by the skipper to release seabirds:

1. Without putting themselves at risk, and;
2. Maximising the chances of the bird surviving (see SSS card).

For the safety of the crew and the bird gloves, long sleeves and protective eyewear are worn when handling live birds.

Reporting Captures to Reduce Uncertainty.

Currently fisher – reported capture rates are much lower than observer reported capture rates, and so are not considered reliable. By reporting all captures in detail, whether live or dead, fishers can contribute to reducing the uncertainty around capture rates and help paint a more realistic picture of the effect fishing has on seabirds.

A capture is defined by MPI and DOC as when a bird has become fixed, entangled or trapped, so that it is prevented from moving freely or freeing itself.

All captures of birds whether live or dead should be recorded under the capture of protected species box in the Lining Trip Catch Effort Return, form and a more detailed description recorded on a Non-Fish / Protected Species Catch Return.

On completion of the haul all captures must be immediately notified to the "Designated Person" (Section 6 Safe Ship Manual) currently Mr XX.

Information Sharing

We agree to share seabird related information with other vessel operators in the area. This could include large or changes in bird numbers in an area, conditions that lead to higher risks of bird interactions, mitigation techniques found to be particularly effective in certain conditions etc.

Training

All crew / visitor inductions include seabird mitigation practices. Note as to whether skippers (and crew) have attended seabird smart workshops.

Verification / Audit / Accountability

This vessel management plan is freely available to interested parties and we are happy to discuss any aspects of our approach to minimising seabird interactions.

When carrying an observer we will ensure they are made aware of this seabird management plan and have the opportunity to confirm that it is representative of our fishing operations. We will also communicate our intentions to the observer.

Contact Details

For any questions on aspects of mitigation or seabirds you can contact the following:

Dave Goad 0273643098 goad.dave@gmail.com (Liaison Role) or

Jamie Williamson 0277755451 jamiebirdman@gmail.com (Liaison Role)

Johanna Pierre 021 908227 johanna@jpec.co.nz (Liaison Coordinator)

Kris Ramm (DOC) 04 4961963 CSP@doc.govt.nz

Jenny Oliver (MPI) 04 8940696 jenny.oliver@mpi.govt.nz

Appendix 4: Key messages for bottom longline fishers

Key messages: Inshore bottom longline

This summer, Seabird Liaison Officers (SLOs) are working with small-vessel longline fisheries in FMA1, and with surface longliners fishing on the West Coast of the South Island. This is the third year that SLOs have worked in northern longline fisheries.

The role of the SLOs focuses on working with fishers to reduce the risk that small-vessel longline fisheries present to NZ's seabirds. This is a two-way process, requiring SLOs and fishers to share their knowledge and build the best practical strategy for each vessel to reduce seabird capture risks.

Seabirds of particular interest in northern bottom longline fisheries are black petrels and flesh-footed shearwaters. This is because a risk assessment shows these seabirds are being captured in NZ commercial fisheries at levels higher than their populations can sustain. Recreational fisheries also capture these species.

The risk assessment used to evaluate the status of these seabirds is one of the key sources of information supporting the National Plan of Action - Seabirds (NPOA). It is based on a large body of information including commercial fishing effort, reported seabird captures, and seabird life histories. It is a mathematical model and it is not perfect. However, it is the best risk assessment we have, given currently available information. Further, it clearly shows where we might have problems – in terms of bycatch rates, information gaps, and inadequate management actions. It also guides the prioritisation of efforts to ensure the long term viability of populations.

The more information there is, the less the uncertainty there will be associated with actual levels of seabird captures in small-vessel longline fleets. As a result, the seabird risk assessment will be able to better reflect reality. Supporting the acquisition of more information (e.g. by hosting fisheries observers) is in fishers' interests. More information is the most effective way to increase the accuracy of the risk assessment, and therefore improving our understanding of reality.

MPI and DOC have commitments both internationally and under our own NPOA - Seabirds to make steps forward in terms of seabird bycatch reduction. The NPOA addresses seabird interactions with both commercial and non-commercial fisheries.

The NPOA includes many objectives. Objectives that are particularly relevant to the work of the SLOs and commercial fishers include the following:

- All New Zealand fishers implement current best practice mitigation measures relevant to their fishery and aim through continuous improvement to reduce and where practicable eliminate the incidental mortality of seabirds.
- The level of mortality of New Zealand seabirds in NZ commercial fisheries are reduced so that species currently categorised as at very high or high risk from fishing move to a lower category of risk.

Black petrels and flesh-footed shearwaters fall into the very high risk categories. Salvin's, southern and northern Buller's, Gibson's, and white-capped albatross are also assessed as at very high risk.

There are many initiatives underway that aim to improve the status of at-risk seabirds and therefore help meet the NPOA's objectives. Initiatives are led by government and also by other groups (e.g. Southern Seabird Solutions). These include Seabird Smart training workshops (which cover seabird-friendly fishing practices), a black petrel action plan, and a pledge by members of the Black Petrel Working Group. In addition, some licensed fish receivers are encouraging their fishers to participate in seabird-related activities, such as Seabird Smart training workshops.

In addition to SLOs, other projects are underway that should contribute to the reduction of seabird bycatch risks in small-vessel longline fisheries. These include the development and testing of tori line designs that are effective and practical for small vessels.

The seabird mitigation that is included in the current regulations is driven by international developments on what measures are effective for reducing seabird captures and is regularly reviewed. However, often international work focuses on large vessel fisheries. Our challenge is to implement effective mitigation that meets international requirements on smaller fishing vessels.

Best practice bycatch mitigation for longline fisheries includes night-setting, line-weighting and using a good tori line. All of these measures require refinement for practical use on each vessel. However, the bottom line is that these measures have been proven to reduce seabird deaths in many fisheries globally.

Other mitigation measures can reduce bycatch risks further, e.g. at the haul. Examples include retaining old baits, and using devices that keep birds out of the hauling bay. When birds are caught and still alive, maximising their survival through gentle handling and careful release is also important.
Seabird Management Plans (SMPs) are an effective way for fishers to demonstrate their commitment to seabird-friendly fishing. This includes communicating how and when fishers will use extra measures, beyond those required by legislation, to minimise captures. This summer, SLOs will continue their work with fishers on evaluating and improving SMPs.
Every seabird capture matters. Birds like black petrels breed slowly. Therefore, each bird killed takes some time to replace. Black petrels lay only one egg at a time and do not all breed every year. They don't breed until they are about 7 years old on average. The breeding population of black petrels is estimated to be in the low thousands - somewhere between around 1,500 and 3,300 birds.
Electronic monitoring is a method used internationally to document fisheries activities. It can be especially useful when vessels are small and have unpredictable fishing schedules. The deployment of EM on 20 trawl vessels in SNA 1 is planned this summer as the first season in a three year programme. There is interest in building on preliminary trials of EM in longline fisheries to monitor seabird bycatch, including the work recently conducted in to assess the detection of captured black petrels (tested using flax models). The Black Petrel Working Group Pledge includes a commitment to assisting with the deployment of electronic monitoring.
Government fisheries observer coverage is planned at 205 observer days in SNA1 and BNS1 between October 2015 and March 2016. Seabird interactions are the focus of this coverage. Specifically, the coverage is intended to: • improve estimates of the capture rates of at-risk seabirds (especially black petrels and flesh-footed shearwaters) • improve knowledge of factors that might affect the survival of seabirds released alive, and, • support evaluation of the efficacy of mitigation in place. Government fisheries observers will also review the implementation of SMPs.
Amongst stakeholders, there is significant interest in small-vessel longline fisheries and how these interact with seabirds. A coordinator has been contracted by DOC to help streamline stakeholder activities relevant to the SLO work programme, and ensure the best bang-for-buck is achieved in real terms – i.e. bycatch reduction outcomes. The coordinator is also available to address any queries from fishers on seabird or other DOC and MPI-related work (call Johanna on 021 908 227; johanna@jpec.co.nz).

Appendix 5: Operational Plan for surface longline vessels

Seabird Liaison Programme

Operational Plan to Reduce Seabird Bycatch Risks: Surface Longline Fishing

Vessel Details

Vessel Name	_____
Call Sign	_____
Registration Number	_____
Home port	_____
Fishing Permit Holder	_____
Skipper	_____
Crew	_____
Date contacted	_____
Contact method	_____

The operator of this vessel is / is not prepared for this Plan to be freely available to interested parties.

Purpose of this Plan

Seabird captures happen from time to time in surface longline fisheries. For some seabird populations, even occasional deaths in fishing gear can have significant impacts, when captures are considered at a fleet-wide scale. Regulated bycatch reduction measures exist to reduce the risks of seabird captures, and the implementation of those measures is expected by MPI. The main purpose of this plan is to record the other – voluntary – measures used on vessels to reduce seabird bycatch risk. This plan is not a compliance document. It is a place to show how seabird capture risks are proactively managed on your vessel. Over time, Seabird Liaison Officers will revisit this plan and discuss with you if it is still up to date.

Regulated measures for seabird bycatch reduction

The mandatory seabird bycatch reduction measures that apply to the surface longline fishery are described in Fisheries (Seabird Mitigation Measures – Surface Longlines) Circular 2014/213. A copy of these measures is available at: http://tinyurl.com/h5jja78.

In addition, all seabird captures must be reported using the capture of protected species box on the Lining Trip Catch Effort Return, and the Non-Fish / Protected Species Catch Return.

Measures used to manage seabird capture risk

This vessel uses the measures identified in the table below:

What?	**In use? (tick)**	**When, where or how?**
Weighting		
Tori line		
Bait types (e.g. squid, sanmar, etc)		
Bait thawed or frozen		
Dyed bait		
Mitigation device used at the haul		
Discharge of offal		
Discharge of used bait		
Line shooter		
Other mitigation measures used?		

When fishing, the risk of seabird captures changes over time. The reactive management of seabird bycatch risks on this vessel includes the following approaches:

When there are no seabirds around the vessel during setting and hauling, we:

Setting:

Hauling:

When seabirds arrive around the vessel during a set or haul, we:

Setting:

Hauling:

Other things we do that reduce the risk of seabird captures (and are not recorded elsewhere in this Plan) include:

Overview of gear setup

Gear setup can affect seabird capture risk. Setup varies to some degree from set to set. However in general, the gear setups used on this vessel are described below.

Target fish species	
Typical setting start time	: am / pm
Typical haul start time	: am / pm
Vessel setting speed (knots)	
Height of backbone above water at the stern (m)	
Backbone diameter (mm)	
Weighting used?	
Snood spacing (m)	
Snood length including clip and hook (cm)	
Hook type and size	
Number of hooks per basket	
Number of hooks per set	
Line length (m)	

Target fish species	
Typical setting start time	: am / pm
Typical setting end time	: am / pm
Height of backbone above water at the stern (m)	
Backbone material	
Backbone diameter (mm)	
Weighting used	
Snood spacing (m)	
Snood diameter (mm)	
Snood material	
Snood length including clip and hook (cm)	
Hook type and size	
Estimated length of a basket (distance between surface floats) (m)	
Number of hooks per basket	
Number of baskets per set	
Line length (m)	

Additional comments about gear setup(s):

Seabird handling and training

The skipper and crew on this vessel have / have not attended training on seabird handling and release, and bycatch reduction practices.

The following tools are kept on-board to handle and release live-caught seabirds safely and effectively:

Next steps

For this vessel, the following measures or strategies are of interest for reducing seabird bycatch in the next year:

Contact

For any questions on aspects of this plan, mitigation, and seabirds you can contact:

Dave Goad (Seabird Liaison Officer): 0273643098, goad.dave@gmail.com

Jamie Williamson (Seabird Liaison Officer): 0277755451, jamiebirdman@gmail.com

Johanna Pierre (Seabird Liaison Coordinator): 021908227, johanna@jpec.co.nz

Dominic Vallieres (MPI): 04 819 4654, dominic.vallieres@mpi.govt.nz

Kris Ramm (DOC): 04 4961963, CSP@doc.govt.nz

Appendix 6: Seabird liaison programme: Surface longline observer support

Documenting Seabird Interactions and Mitigation Practices

Background

Surface longline fisheries capture some seabird species for which fishing mortalities due to NZ commercial fisheries are likely to be unsustainable. Species of particular interest in this regard are black petrels, flesh-footed shearwaters, and Salvin's, Gibson's, Antipodean, and northern and southern Buller's albatross.

Interactions of these seabirds with surface longline fisheries are affected by the seasonality of both seabird distribution and fisheries. For example, black petrels and flesh-footed shearwaters are only present in New Zealand waters over summer when they breed. During that time, they may interact with bigeye and swordfish fisheries. Albatross will only encounter the southern bluefin tuna fishery on the West Coast when that fishery is active from late autumn through winter.

Petrels and shearwaters that interact with surface longline fisheries can dive to considerable depths. Further, albatross can also be very active foragers around vessels. Together with many other factors, these characteristics contribute to the risk of bycatch events.

This season, government fisheries observers deployed on surface longline vessels will be recording information about seabird captures as well as strategies used to avoid them. As part of a MPI and DOC initiative, Seabird Liaison Officers have also been deployed to work in small-vessel surface and bottom longline fisheries to raise awareness of seabird issues and support the uptake of effective seabird bycatch reduction measures in these fisheries. Government fisheries observers provide critical support to this liaison work, by helping document fishing practices at sea, and considering the risk that operational practices present to seabirds.

This document describes the information that we would like you to collect to support the liaison programme. It is not a compliance document. Rather, the goal is to identify operational practices on the vessel that relate to the risk of seabird captures. This includes how the gear is set and what "normal fishing practices" are. In addition, we would like you to record anything the fishers are doing that might reduce seabird capture risk (including anything about their operation that they think reduces capture risk). For example, is the gear set a certain way to reduce seabird capture risk? Do practices change if there are many seabirds around the vessel at setting or hauling? In short, what are the voluntary measures that the vessel skipper and crew use to avoid catching seabirds?

If there is anything that you have questions about, would like more information on, or if you are unclear about something in this document, please contact the Seabird Liaison Programme Coordinator Johanna Pierre on 021 908 227 or johanna@jpec.co.nz. If the skipper or crew have questions, they should also feel free to contact Johanna, or one of the Seabird Liaison Officers (Dave Goad: 027 364 3098; Jamie Williamson: 027 360 6020).

Thank you for your help.

Operational Plan to Reduce Seabird Bycatch Risks: Surface Longline Fishing

At the end of this document (Appendix 1), you will find a template for an operational plan to reduce seabird bycatch risks in surface longline fishing. That document is intended to record how surface longline vessel operators manage seabird bycatch risk. You do NOT need to complete this document. It will be completed by Seabird Liaison Officers (SLOs) working with fishers, during follow-up visits with the vessel after completion of your observed trip(s). However, the information you collect during your trip is critical for helping SLOs create a draft of this document, that they will then discuss with fishers. Overall, the operational plan is intended to create a record of practices that can be reviewed and updated annually, to reflect changes in fishing operations that affect seabird capture risks over time. Feel free to advise skippers that your trip will be followed by contact from a SLO. MPI has also advised them of this process, and the development of operational plans relating to seabirds, through its "Pelagic Update" newsletter.

The information we would like you to collect to help us with this operational plan follows on the next pages. There are also additional questions that will draw out helpful information to improve wider understanding (e.g. by MPI and stakeholders) of the risk to seabirds that surface longline operations present. Note your answers in the spaces provided and again, please contact Johanna if you or the skipper and crew have any questions (021 908 227; johanna@jpec.co.nz). Feel free to complete the form as you go through your trip – it will take a few sets and hauls to get a feel for what the crew are doing and how what they say matches with what they actually do day to day.

Information Gathering for the Surface Long Line Fleet

Please cover the following questions informally as part of your general discussions with skippers and crew.

What are the attitudes of the skippers and crew, in relation to seabird issues in their fishery?
For example, are they interested in seabirds, do they consider seabird bycatch to be a problem amongst their fishery, do they think that the attention on seabirds is unnecessary, are they concerned about bird captures, etc.

Ask the skipper/crew what they do on the vessel to avoid catching seabirds.

Why do they use these methods (cost, ease of use, convenience, etc)?

Are there times when they think the risk of captures increases?

During setting and hauling, do skippers and crew monitor seabirds (and their behaviour) around the vessel?

When there are no birds around during setting and/or hauling, do skippers/crew take any measures to reduce capture risks?

Setting:

Hauling:

If birds arrive during setting and/or hauling, do the skipper/crew change their practices at all?

Setting:

Hauling:

What about during night-setting, when birds cannot be seen? Do they ever hear birds around? What, if anything, do skippers/crew do to reduce capture risks?

What do skippers/crew think stops themselves and/or others implementing the current legal requirements for seabird bycatch mitigation? (Note that this questionnaire is NOT a compliance exercise – instead, we are focused on finding solutions to specific problems where there is a lack of implementation).

Can they suggest any modifications to the current measures that would address these barriers to implementation?

In terms of the current government approach to managing seabird bycatch in surface longline fisheries – what is the government doing that doesn't make sense to them? Is the government doing anything that does seem on the right track to resolve seabird issues?

Does the skipper have any interest in being involved with trials of new seabird bycatch reduction measures?

Please take the following photos and videos

All mitigation equipment – close up and in use when possible
Hooks – with and without bait
Snoods
Floats
Weights (including swivels on clips)
Deck layout
Any floating lines
A short video of the wake and gear and tori line at the set - especially when there are birds around if day-setting
A short video of the hauling station whilst hauling - especially when there are birds around

Gear Details

Fill in the following gear parameters. Note some will require several values, and if this is the case note the range and the typical or 'estimated average' value.

Complete one table below for each target species, if the setup changes between targets.

Please also draw a detailed diagram of the gear setup used for each target species, where gear setup changes between targets. (*This may be part of your normal observations for MPI. If so, there is no need to repeat here*). Aim for sufficient detail in the diagram to allow the gear to be reconstructed based on your drawing.

Target fish species	
Height of backbone above water at the stern (m)	
Vessel setting speed (knots)	
Backbone diameter (mm)	
Snood spacing (m)	
Snood diameter (mm)	
Snood length including clip and hook (cm)	
Hook type and size	
Float rope length (m)	
Estimated length of a basket (distance between surface floats) (m)	
Number of hooks per basket	
Number of baskets per set	
Line length (m)	
Min distance behind vessel backbone enters water (m)	
Max distance behind vessel backbone enters water (m)	
Estimated width of visible propeller wash (m)	
Estimated distance astern propeller wash visible (m)	

Setting

Describe the setting operation – number of hooks per set, setting and hauling time of day, set duration, how the crew work together, whether you observed any problems at setting (e.g. gear issues) during the trip and how the crew managed these. (If the vessel targets several species in different ways then note how the above differ for different targets.)

List bait types and describe when each are used and why, and thaw status. The vessel might use one type of bait for the start of the set or trip and then a different bait or mix of baits. Document any rationale for their bait choices – ask when/why they use certain baits.

Hauling

How long did hauling take typically? How did the crew work together? Did you observe any gear issues (e.g. tangles) and how did the crew resolve these?

Did you see any seabirds captured alive, and removed from fishing gear by crew? Did they seem comfortable handling seabirds safely? Did they handle birds gently to maximise their chance of survival?

Appendix 7: Key messages for surface longline fishers

Key messages: Inshore surface longline

This summer, Seabird Liaison Officers (SLOs) are working with small-vessel longline fisheries in FMA1, and with surface longliners fishing on the West Coast of the South Island. This is the third year that SLOs have worked in northern longline fisheries. The expansion of the programme to the West Coast of the South Island is due to the overlap of at-risk seabirds and longline fisheries in that location.

The role of the SLOs focuses on working with fishers to reduce the risk that small-vessel longline fisheries present to NZ's seabirds. This is a two-way process, requiring SLOs and fishers to share their knowledge and build the best practical strategy for each vessel to reduce seabird capture risks.

Seabirds of particular interest in northern longline fisheries are black petrels and flesh-footed shearwaters. This is because a risk assessment shows these seabirds are being captured in NZ commercial fisheries at levels higher than their populations can sustain. Recreational fisheries also capture these species. More broadly, the populations of seabirds such as southern and northern Buller's, Gibson's, and white-capped albatross are also assessed as at very high risk of unsustainable fisheries bycatch. Black petrels, and these albatross species, are caught in surface longline fisheries.

The risk assessment used to evaluate the status of NZ seabirds is one of the key sources of information supporting the National Plan of Action - Seabirds (NPOA). It is based on a large body of information including commercial fishing effort, reported seabird captures, and seabird life histories. It is a mathematical model and it is not perfect. However, it is the best risk assessment we have, given currently available information. Further, it clearly shows where we might have problems – in terms of bycatch rates, information gaps, and management actions. It also guides the prioritisation of management and research efforts to ensure the long term viability of populations.

The more information there is, the less the uncertainty there will be associated with actual levels of seabird captures in small-vessel longline fleets. As a result, the seabird risk assessment will be able to better reflect reality. Supporting the acquisition of more information (e.g. by hosting fisheries observers) is in fishers' interests. More information is the most effective way to increase the accuracy of the risk assessment, thereby improving our understanding of reality. If fishers don't believe the risk assessment, their best course of action in response is to take an observer.

MPI and DOC have commitments both internationally and under our own NPOA - Seabirds to make steps forward in terms of seabird bycatch reduction. The NPOA addresses seabird interactions with commercial and non-commercial fisheries.

The NPOA includes many objectives. Objectives that are particularly relevant to the work of the SLOs and commercial fishers include the following:

- All New Zealand fishers implement current best practice mitigation measures relevant to their fishery and aim through continuous improvement to reduce and where practicable eliminate the incidental mortality of seabirds.
- The level of mortality of New Zealand seabirds in NZ commercial fisheries are reduced so that species currently categorised as at very high or high risk from fishing move to a lower category of risk.

Black petrels and flesh-footed shearwaters fall into the very high risk categories. Salvin's, southern and northern Buller's, Gibson's, and white-capped albatross are also assessed as at very high risk.

There are many initiatives underway that aim to improve the status of at-risk seabirds and therefore help meet the NPOA's objectives. Initiatives are led by government and also by other groups (e.g. Southern Seabird Solutions). These include Seabird Smart training workshops (which cover seabird-friendly fishing practices), a black petrel action plan, and a pledge by members of the Black Petrel Working Group. In addition, some licensed fish receivers are encouraging their fishers to participate in seabird-related activities, such as Seabird Smart training workshops.

The seabird mitigation that is included in the current regulations is driven by international developments on what measures are effective for reducing seabird captures and is regularly reviewed. However, often international work focuses on large vessel fisheries. Our challenge is to implement effective mitigation that meets international requirements on smaller fishing vessels.

Where fishers feel unable to implement the mandatory mitigation measures required in surface longline fisheries, the liaison team wants to identify barriers to the adoption of these measures. Solutions that will address barriers to adoption are important. We are keen to hear from fishers regarding what would help them meet the legal requirements for seabird bycatch mitigation measures.

Best practice bycatch mitigation for longline fisheries includes night-setting, line-weighting and using a good tori line. All of these measures require refinement for practical use on each vessel. However, the bottom line is that these measures have been proven to reduce seabird deaths in many fisheries globally.
Other mitigation measures can reduce bycatch risks further, e.g. at the haul. Examples include retaining old baits, and devices that keep birds out of the hauling bay. When birds are caught and still alive, maximising their survival through gentle handling and careful release is important.
This season, Seabird Liaison Officers will be working with surface longline fishers to record any practices used when fishing that reduce the risk of seabird captures. This includes voluntary measures (i.e. beyond regulated requirements). This is an opportunity for fishers to demonstrate their "seabird smarts" – the practical things they do each day on the water to reduce seabird captures. Fishery managers at MPI are very interested in voluntary measures undertaken by fishers to reduce seabird capture risk.
Where there is not enough data to estimate seabird bycatch rates (and therefore to assess fishery performance against the NPOA's goals, above), other tools may be used. Such tools can include management or operational plans used to manage seabird capture risks.
Every seabird capture matters. Birds like black petrels and all albatross breed slowly. Therefore, each bird killed takes some time to replace. For example, black petrels lay only one egg at a time and do not all breed every year. They don't breed until they are about 7 years old on average. The breeding population of black petrels is estimated to be in the low thousands - somewhere between around 1,500 and 3,300 birds.
In addition to Seabird Liaison Officers, other projects are underway that should contribute to the reduction of seabird bycatch risks in small-vessel longline fisheries. These include the development and testing of tori line designs that are effective and practical for small vessels.
Government fisheries observers will be deployed on fishing vessels fishing for bigeye, swordfish, and southern bluefin tuna in the 2015/16 year. In the domestic fishery, observer coverage amounting to a total of 570 days is planned. (An additional 260 days is planned for coverage of charter vessels targeting southern bluefin tuna). Monitoring protected species interactions (including seabirds) is one of the priorities of this coverage.
Amongst stakeholders, there is significant interest in small-vessel longline fisheries and how these interact with seabirds. A coordinator has been contracted by DOC to help streamline stakeholder activities relevant to the Seabird Liaison Officer work programme, and ensure the best bang-for-buck is achieved in real terms – i.e. bycatch reduction outcomes. The coordinator is also available to address any queries from fishers on seabird or other DOC and MPI-related work (call Johanna on 021 908 227; johanna@jpec.co.nz).

Appendix 8: Updated trigger points for fisheries observers to report

Inshore/HMS Non-Fish Bycatch Triggerpoints

	Species	Status	Captures per 24 hours	Captures in any 7 day period	Specific actions
Birds	Large seabirds: albatrosses, giant petrels	Dead	3	10 or more (dead or alive)	Photograph and retain all dead birds. If the vessel you are on is too small to retain all birds contact your FOO.
	Small seabirds: petrels, shearwaters, prions, shags	Dead	5	10 or more (dead or alive)	
	Any seabird	Dead or alive	8	20 or more	
	Black Petrel	Dead or alive	1	1	
	Yellow-eyed penguin	Dead or alive	1	1	
Mammals	Hector's or Maui's dolphin	Dead or alive	1	1	Photograph and retain whole animal
	Dolphin	Dead or alive	1	1	Photograph, sex, measure and take tissue sample
	Sea lion	Dead or alive	1	1	
	Fur Seal	Dead or alive	2	5	
Sharks	Great white shark	Dead or alive	1	1	Photograph, sex measure and take tissue sample
	Basking shark	Dead or alive	1	1	

Triggerpoint
Actions:

Contact the observer office within 24 hours of reaching a trigger point. This may require using the vessels email system or sat phone (this should have been covered during the initial meeting). Written communication is preferred. If you do not hear back from the observer office within 24 hours attempt to make contact via another means. If you cannot get a message out please send one as soon as you get into cellphone range. All discards must be marked in some way (cable tie, CSP tag) to avoid capture being re-reported.