Agreement on the Conservation of Albatrosses and Petrels

Seventh Meeting of the Seabird Bycatch Working Group

La Serena, Chile, 2 - 4 May 2016

New Zealand's implementation of its NPOA Seabirds

Nathan Walker, Tiffany Bock, Dominic Vallieres, Janice Molloy, Johanna Pierre

SUMMARY

This paper summarises New Zealand's implementation of its National Plan of Action to reduce the incidental catch of seabirds in New Zealand fisheries.

Along with the development of targets and actions across the three major fisheries groupings, species specific action plans for the most at-risk seabird species are being developed.

Regions and fisheries have been identified that pose considerable risk to the most at-risk seabirds (as estimated by a quantitative seabird risk assessment). In these areas several management actions have been progressed. The first is undertaking Seabird Smart Training of skippers and crew; attendance at these workshops have been supported by fishing companies. Secondly, in these areas/fisheries, vessel specific seabird management plans are being developed by skippers in conjunction with liaison offices that have been employed for this purpose. Outreach to the recreational fishing sector is also being undertaken in northern New Zealand, where the highest recreational fishing effort occurs.

Research activities are also continuing into: the demographics of at-risk seabirds, mitigation trials and refinements, extrapolations of bycatch levels, refinement of extrapolation and risk assessment methods and further iterations of the quantitative seabird risk assessment.

Implementación del PAN-Aves por parte de Nueva Zelanda

RESUMEN

El presente documento resume la implementación del Plan de Acción Nacional por parte de Nueva Zelanda a fin de reducir la captura incidental de aves marinas en las pesquerías neozelandesas.

Además de objetivos y acciones en los tres grupos de pesquerías más importantes, se están elaborando planes de acción específicos para las especies de aves marinas que corren mayor riesgo.

Se han identificado regiones y pesquerías que representan un riesgo considerable para las aves marinas que corren mayor riesgo (según las estimaciones de una evaluación cuantitativa de riesgos para las aves marinas). En esas zonas, se han llevado a cabo varias tareas de ordenación. En primer lugar, se les ofreció a los capitanes y las tripulaciones participar de talleres de capacitación para el manejo inteligente de las aves marinas, y las empresas pesqueras fomentaron la asistencia a dichos talleres. En segundo lugar, en esas zonas/pesquerías, hay planes de ordenación de aves marinas a la medida de cada barco que están siendo elaborados por capitanes y directores de enlace que han sido contratados para tal fin. A su vez, se están implementando planes de concientización en el sector de pesca deportiva en el norte de Nueva Zelanda, donde se realiza el mayor esfuerzo de pesca deportiva.

Por último, también se están llevando a cabo actividades de investigación acerca de los siguientes temas: estadísticas demográficas de aves marinas en riesgo, perfeccionamiento y pruebas de medidas de mitigación, extrapolaciones de niveles de captura secundaria, perfeccionamiento de extrapolaciones y métodos de evaluación de riesgos, y nuevas iteraciones de la evaluación cuantitativa de los riesgos para las aves marinas.

Mise en œuvre du PAN-Oiseaux de mer de Nouvelle-Zélande

RÉSUMÉ

Ce document résume la mise en œuvre du Plan d'action national pour réduire les captures accessoires d'oiseaux marins dans les pêcheries de Nouvelle-Zélande.

En sus de l'élaboration de nouveaux objectifs et d'actions dans les trois regroupements principaux de pêcheries, des plans d'action spécialement conçus pour les espèces les plus menacées sont en cours de développement.

Des régions et pêcheries à haut risque pour les espèces d'oiseaux marins les plus menacées ont été identifiées (à partir d'une évaluation quantitative de risque pour les oiseaux marins). Plusieurs mesures de gestion ont été mises en œuvre dans ces zones. La première action a été la formation Seabird Smart Training pour les capitaines et leur équipage ; la participation à ces ateliers a été promue par les sociétés de pêche. Deuxièmement, dans ces zones/pêcheries, des plans de gestion des oiseaux marins destinés aux navires sont en cours de développement par les capitaines en conjonction avec les bureaux de liaison créés à cette fin. La sensibilisation du secteur de la pêche de loisir est également en cours dans le nord de la Nouvelle-Zélande, où la pêche récréative est la plus intense.

Des activités de recherche continuent également : démographie d'oiseaux marins menacés, essais et perfectionnement de l'atténuation, extrapolation des niveaux de captures accessoires, perfectionnement des méthodes d'extrapolation et d'évaluation des risques et autres itérations de l'évaluation quantitative des risques pour les oiseaux marins.

1. IMPLEMENTATION OF NEW ZEALAND'S NATIONAL PLAN OF ACTION TO REDUCE THE INCIDENTAL CATCH OF SEABIRDS IN NEW ZEALAND FISHERIES (2013)

a. 1.1. Seabird Advisory Group

The Seabird Advisory Group (SAG) was formed to monitor and assist with the implementation of the NPOA-Seabirds 2013 and to contribute to the review of the NPOA. It was first convened in May 2014 and consists of a varied membership of Ministry for Primary Industries (MPI), Department of Conservation (DOC), and Ministry of Foreign Affairs and Trade (MFAT) officials, and representatives from iwi (Maori interests), commercial fishing and recreational fishing, and non-governmental organisations.

The SAG aims to meet three times per year and produce an annual report (see Annex 1 for the 2014/15 Annual report). The SAG is chaired independently by Bill Mansfield.

b. 1.2. Fishery specific Annual Operating Plans and Review Reports

Seabird related targets and management actions have been included in the Annual Operational Plans of the three major fishery groupings in New Zealand. The progress against targets and planned actions are reviewed in Annual Review Reports on a fishery grouping basis. The most recent available versions of these documents are provided in the Annexes listed below:

- Annex 2 – Deepwater Fisheries Annual Operational Plan
- Annex 3 – Deepwater Fisheries Annual Review Report
- Annex 4 – Highly Migratory Species Fisheries Annual Operational Plan
- Annex 5 - Highly Migratory Species Fisheries Annual Review Report
- Annex 6 – Inshore Fisheries Annual Operational Plan

c. 1.3. Focus area – black petrel

Due to an initiative driven by the Southern Seabirds Solutions Trust, a wide range of organisations including fishing companies and associations, local and central government, iwi and conservation groups signed a pledge in Leigh on the 30th October 2014 to publicise their commitment to work together to help black petrels and other seabirds thrive alongside fishing in the FMA 1 area (North Cape to East Cape).

There are three interconnected work streams associated with the pledge: commercial fishing, recreational fishing, and a planned initiative with mana whenua (Ngati Wai, Ngati Rehua and Ngati Manuhiri).

A Working Group (known as the Black Petrel Working Group) meets regularly to review progress and plan further actions.

This initiative is driving actions in various areas:

- Commercial Fisher Education – Southern Seabirds Solutions are undertaking workshops to educate fishers about seabirds and mitigation tools, and this is supported by fishing companies who are requiring their skippers to attend these workshops.
- Recreational Fisher Education – Forest & Bird/Birdlife have employed a liaison officer to engage and educate recreational fishers about seabirds and mitigation options.
- Liaision officers – DOC and MPI have employed liaison officers and a mitigation co-ordinator to aid commercial fishers to develop seabird management plans (SMPs) for their vessel
- Trial of electronic monitoring to detect seabird captures – DOC and Southern Seabirds Solutions supported a trial of electronic monitoring to test the detectability of seabird captures; the trial used woven flax proxy seabirds and has reported promising results (see SBWG7 Inf 18).

d. 1.3. Focus area – South Island inshore trawlers

As the inshore trawl fisheries around the South Island have been identified by New Zealand's seabird risk assessment as source of potential fatalities of several albatross species, the Southern Inshore Management Company has a liaison officer, John Cleal, engaging with vessel owners and skippers and assisting them with the development of seabird management plans (SMPs) for their vessel.

e. 1.4. Focus area – recreational fishing

Recreational fishing is one of the most popular sporting activities in New Zealand, listing second for men, ninth for women and within the top ten by all ethnicities surveyed (Sport NZ 2014). There are over 640,000 active anglers in New Zealand, including a 'hardy core' of between 40,000 and 50,000 people who are 'really keen' (NIWA 2013). There is evidence that recreational anglers catch seabirds and, while birds are most often released alive, the sheer number of anglers on the water means the impact on some populations may be significant (Abraham et al. 2010).

In 2015, the Southern Seabirds Solutions Trust engaged with recreational fishing clubs, organisations, charter operators, TV personalities, media and frontline government agency staff to build support for a seabird smart recreational fishing culture. As a result, the Southern Seabirds Solutions Trust materials and messages have been distributed to thousands of anglers via fishing competition packs, boating and community events, boat ramps, magazines, TV and online networks. Throughout this process the Southern Seabirds Solutions Trust has gained significant in-kind support from community members, charter skippers, the NZ Sports Fishing Association/Legasea, retailers and fishing media. The Southern Seabirds Solutions Trust designed a 'Petrelhead - lookin' out for seabirds' brand and trialled this on t-shirts and stickers at community events. See www.petrelhead@ezymerch.co.nz . The Southern Seabirds Solutions Trusts' 'Building a Culture of Seabird Smart recreational Fishing in NZ' is funded by the Department of Conservation Community Fund. The Southern Seabirds Solutions Trusts' Recreational Fishing Programme is supported by the Ministry for Primary Industries.

MPI is funding a five year webcam/boat ramp recreational fishing survey programme being conducted by NIWA (project MAF2014/04) in the north of the North Island, with the boat ramp survey being conducted from 01 October 2015 through 30 September 2016. This survey has been modified to include specific questions about the bycatch of seabirds (including seabird identification, method of capture and injury/life status).

f. 1.5. Research

MPI and DOC are continuing to progress research into New Zealand seabirds, mitigation methods and risk assessments. Projects currently underway include:

- Seabird bycatch estimations
- Seabird risk assessment methodology review
- Seabird risk assessment (two iterations)
- Black petrel distribution modelling (a key input into the risk assessment)
- Various population studies (including black petrel, white capped albatross etc)
- Southern hemisphere seabird risk assessment
- Longline and trawl mitigation trials (including hook pods, underwater baitsetter, tori lines etc)
- Cryptic mortality research

ANNEX 1 – SEABIRD ADVISORY GROUP – ANNUAL UPDATE REPORT JULY 2015

Seabird Advisory Group

Annual Update Report

Introduction

The Terms of Reference (TOR) for the establishment of the Seabird Advisory Group (SAG) are defined by Annex IV of the National Plan of Action – 2013 to reduce the incidental capture of seabirds in New Zealand fisheries (NPOA). The purpose of the SAG, as defined in the TOR, is to "monitor and assist the implementation of the NPOA and contribute to the review of the plan that, in accordance with its provisions, is scheduled to commence after its fourth year of operation".

The group convened for the first time on the 16th of May 2014, bringing together representatives from relevant Government agencies, the commercial fishing industry, Iwi and environmental non-Government organisations. After the initial meeting, the SAG was pleased to be able to include a member from the recreational sector to enhance the representativeness of the group. In addition, a series of subject matter experts have been invited to attend relevant SAG meetings.

The group has met on four occasions and has confirmed that meetings will be held three times per year, unless otherwise required. It was agreed that meeting dates would align with relevant Government planning cycles to allow the most effective use of input from the SAG.

The group has confirmed that an annual update report from the SAG, as required under the TOR, will be released in July each year.

NPOA Objectives

The SAG is committed to the continued monitoring of performance against the objectives of the NPOA. These objectives provide the overarching guidance for the SAG when considering all matters raised in this forum.

The SAG noted that MPI and DOC have developed targets and performance indicators for each of the NPOA objectives, and considers that this provides a useful planning framework for implementing the NPOA.

Five Year Plans

As mentioned above, the SAG oversaw, and provided key input into, the development of a document which sets out targets and performance indicators designed to facilitate achieving each of the five year objectives of the NPOA (attached in Appendix 1). The SAG notes that these five year targets were developed with the intention that they will, where appropriate, be incorporated into five year fisheries plans, when these are revised. Until then, the targets will be considered an adjunct to existing fisheries plans.

The targets and performance indicators provide a framework by which progress will be measured over the lifetime of the NPOA and deliver guidance for the development of actions in the appropriate annual operational plans (AOPs). Where meeting the targets will require the gathering of additional information, appropriate actions have also been recommended.

A specific area of focus for the SAG has been establishing a pragmatic and responsible approach to the application of capture rate reduction targets. These targets are required, under the 'practical' five year objectives of the NPOA, to be included in the relevant government planning documents. However, the lack of empirical data to support setting targets in many fisheries led to the SAG convening a working group to discuss and make recommendations on how to deliver on this aspect of the NPOA.

The 'capture rate reduction targets working group' has developed a draft, stepwise process for firstly assessing those fisheries for which quantitative targets are appropriate, and then for setting the targets themselves. A series of draft recommendations were also provided to guide fisheries managers in considering alternative 'proxy' targets aimed at driving continuous improvement in those fisheries where meaningful quantitative targets could not be set and/or monitored.

[These outputs were presented by the chair of the working group to the SAG on the 16th of July 2015. SAG thanked the working group for their work, and recommended that fisheries managers use this stepwise process as a guide in the development of targets within their respective AOPs.]

Annual Operational Plans (AOP)

The SAG has overseen the inclusion of seabird related actions into two cycles of Ministry for Primary Industries (MPI) AOPs. MPI Fisheries management teams generated actions which were prioritised based on; the objectives of the NPOA, the five year targets and performance indicators, outputs from the seabird risk assessment model and action points from previous SAG meetings. These AOP actions were presented at SAG meetings in advance of the standard AOP timeframes to allow members to provide input and comment prior to the plans being finalised (in June). These documents reflect a positive start towards achieving the objectives of the NPOA. The interaction between the SAG and fisheries managers in relation to drafting AOP actions has been a productive process, providing fisheries managers with input on the direction and prioritisation of AOP actions.

Assessment of performance against AOP actions was monitored by the SAG through regular update sessions at SAG meetings. This ensured that measures were being appropriately implemented to allow the AOP actions to be achieved. In addition, the SAG has provided recommendations on how to more effectively streamline and coordinate this process, both internally within MPI, as well as across government agencies.

Summary

This year has seen the formation and establishment of the Seabird Advisory Group. Since the initial meeting in May 2014 the group has set robust foundations for effectively performing its purpose, as set out by the TOR in Annex IV of the NPOA. The SAG has operated within the stipulated modus operandi, with the collaborative nature of the group allowing the perspectives of all sectors to be considered in an efficient and inclusive manner. This has also

provided for differences in opinion to be effectively noted and/or resolved. Necessary information from all parties has been made freely available in a timely manner and all members have engaged with a sense of common purpose.

In the first two years of the NPOA, SAG notes that the Government's planning focus has been on developing five year targets and performance indicators, improving the seabird risk assessment model, aligning MPI and DOC research and management planning with the NPOA objectives, preparing a species specific action plan, and defining how capture rate reduction targets will be set. These initiatives will help define future work priorities and improve the efficiency of cross Government activities. In terms of NPOA implementation within fisheries, the key focus has been on continuing with the development and implementation of best practice mitigation and providing fisher education for both commercial and recreational fishers. SAG notes that international advocacy initiatives have continued through Regional Fisheries Management Organisation engagement and anticipates that opportunities for bilateral engagement with key countries will be explored.

SAG remains focussed on the delivery of the NPOA and will continue to provide the necessary oversight and guidance to ensure its objectives are achieved within the given timeframes.

ANNEX 2 – EXCERPT FROM THE DRAFT DEEPWATER FISHERIES 2016/17 ANNUAL OPERATIONAL PLAN

6	**Protected Species Frameworks -** NPOA Seabirds: Work to achieve the five year practical, biological, research and development, and international objectives within deepwater fisheries
	The NPOA Seabirds was approved in 2013 and sets out the long term, and five year objectives, relating to managing fisheries interactions with seabirds. The NPOA is underpinned by a Level 2 Risk Assessment which has identified the seabird species considered to be most at risk of being adversely affected by commercial fishing in New Zealand. The risk assessment also identifies which fisheries pose the most risk to seabird species.[1] This management action outlines the priority NPOA seabird work areas for deepwater fisheries in 2016/17 -guided by the Level 2 Risk Assessment outputs. Further detail on the objectives of the NPOA and how the Deepwater Fisheries Team will support the achievement of those objectives may be found in Part 2B.
	Key Actions for 16/17: • Work across the Fisheries Management Directorate, and with key stakeholders, to monitor seabird performance measures • Report annual performance in relation to the agreed measures, to inform ongoing progress towards meeting the objectives in the NPOA-Seabirds • Continue to implement and refine best practice mitigation measures across the deepwater fleet (with a focus on ling bottom longline), to minimise interactions with seabirds and support achievement of the practical objectives in the NPOA-Seabirds • Assist with the development and implementation of species and fisheries-specific action plans for seabird species considered to be at 'very high' or 'high' risk from fishing, to work towards achieving the biological risk objective in the NPOA-Seabirds • Continue to work with DWG to develop information and additional mitigation measures specific to 'very high' and 'high' risk seabird species to support achievement of the biological risk and research and development objectives in the NPOA-Seabirds • More information on the services associated with delivery of this management action are provided on pages 20-22 of this AOP

Further context for the implementation of the NPOA Seabirds by Deepwater Fisheries Management

The National Plan of Action – 2013, to reduce the incidental catch of seabirds in New Zealand Fisheries (NPOA), includes five-year objectives under high level subsidiary objectives. These address four key areas:

i) a practical objective focused on continuous improvement to reduce and where practicable, eliminate the incidental mortality of seabirds;

ii) a biological risk objective focused on ensuring seabird populations remain at or attain a favourable conservation status;

[1] The NPOA Seabirds, together with the Level 2 Risk Assessment can be accessed here

iii) a research and development objective focused on researching mitigation and observation methods, and seabird biology, demography and ecology; and

iv) an international objective focused on the implementation of best practice mitigation in other fishing fleets that overlap with New Zealand breeding seabirds.

The NPOA employs a risk assessment framework in which a quantitative Level 2 Risk Assessment (the risk assessment) is used to identify seabird species considered to be at most risk from New Zealand fisheries. These higher risk species can then be prioritised for management action.

The risk assessment compares annual potential fatalities (APFs) (linked to observed captures, estimated seabird distributions, and multipliers for factors like cryptic (unobservable) mortalities) to potential biological removals (PBR - the maximum number of seabirds, not including natural mortalities, that may be removed from a stock while allowing that stock to reach or maintain its optimum sustainable population).

A seabird species is considered to be at very high risk from fishing, if the ratio of the estimated mean APF to the mean PBR is higher than 1. A species is considered to be at high risk from fishing if the ratio of APFs to the PBR is above 0.3. Deepwater fisheries contribute more than 10% of the risk to four 'very high' and three 'high' risk seabird species, detailed below.

Risk Rating: Very high risk

1. Salvin's albatross

Deepwater fisheries contribute a total of 45% of the APF of Salvin's albatross (1,575 out of a total 3,520 – compared to the PBR of 1,010), with most of the contribution from middle depth, hoki, and scampi trawl, and small vessel ling bottom longline fisheries. The main uncertainty in the modelled risk is the number of captures in inshore trawl fisheries, the cryptic mortality multiplier, and the estimate of adult survival.

2. Southern Buller's albatross

Deepwater fisheries contribute a total of 61% of the APF of Southern Buller's albatross (751 out of a total of 1,236 – compared to the PBR of 447), with most of the contribution from hoki and squid trawl fisheries. A Level 3 risk assessment is under way which should provide more detailed information on sources of uncertainty, the dynamics of the population and risk from fishing. A DOC research project is reviewing taxonomy of the Northern Buller's albatross. This project may resolve issues associated with accurate identification of Southern and Northern Buller's albatrosses.

3. Flesh-footed shearwater

Deepwater fisheries contribute a total of 17% of the APF of Flesh-footed shearwater (127 out of a total of 726 – compared to the PBR of 521), with most of the deepwater contribution from the scampi trawl fishery.

4. New Zealand White-capped albatross

Deepwater fisheries contribute a total of 45% of the APF of White-capped albatross (1,990 out of a total of 4,407 – compared to the PBR of 4,040), with most of the deepwater contribution from the middle depth and squid trawl fisheries.

Risk Rating: High risk

1. Chatham Island albatross

Deepwater fisheries contribute a total of 83% of the APF of Chatham Island albatross (107 out of a total of 129 – compared to the PBR of 139), with most of the deepwater contribution from the small vessel ling bottom longline fishery.

2. Westland petrel

Deepwater fisheries contribute a total of 28% of the APF of Westland petrel (23 out of a total of 83 – compared to the PBR of 158), with most of the deepwater contribution from the hoki trawl fishery.

3. Campbell black-browed albatross

Deepwater fisheries contribute a total of 23% of the APF of Campbell black-browed albatross (49 out of a total of 210 – compared to a PBR of 677), with most of the deepwater contribution coming from the trawl fisheries.

Deepwater Capture Rate Reduction Targets

			Meaningful test				
Fishery	**Baseline**	**CV**	**Obs. captures**	**Estimated captures**	**Capture rate**	**Meaningful target?**	**Suggested target/proxy**
SBW trawl	>10%	0.0004-0.27		3-20	0.011/tow	No	Continue to monitor and report, target is no significant increase (based on 3-yr rolling averages)
SQU trawl	>10%	0.039-0.134	>100	>300	0.140/tow	Yes	Statistically significant decrease in rate (based on 3-yr rolling average)
JMA trawl	>10%	0.037-0.421	5-26	10-34	0.01/tow	No	Continue to monitor and report, target is no significant increase (based on 3-yr rolling averages)
SCI trawl	<10%						Observer coverage has been >10% twice in the most recent 4 years. A calculation of the overall observer coverage indicates that 8.4% of tows have been observed in the last five years, this is not considered sufficient to provide a robust baseline. Proxy target is to have VMPs in place on all vessels, ELO visit all scampi vessels, and a target of 15% observer coverage be set.
Deepwater trawl	>10%	0.392-0.407	2	16-24	0.006/tow	No	Continue to monitor and report, target is no significant increase (based on 3-yr rolling averages)
Middle depths trawl	>10%	0.065-0.187	>100	>200	0.023/tow	Yes	Statistically significant decrease in rate (based on 3-yr rolling averages)
Large vessel BLL	>10% 09/10-11/12	0.32-0.451					Continue to monitor and report, target is no significant increase (based on 3-yr rolling averages)
Small vessel LIN BLL	<10%						Work with industry to implement vessel-specific seabird management plans including the use of best practice mitigation across this fleet. Liaison officers will also provide seabird training sessions to crew. And a target of 15% of effort observed will be set.

Determination of statistically significant reductions in capture rate

The service provider responsible for the enumeration of seabird captures has calculated what a 'statistically significant' decrease in capture rate would look like compared to a baseline of the most recent three years with at least 10% observer coverage and a CV of less than 0.30 for those fisheries highlighted in yellow above.

Fishery	Baseline capture rate	'Target' rate	Reduction amount
Squid	13.97	**11.99**	14%
Middle depth trawl	2.66	**2.27**	15%

Deepwater Management approach

In Deepwater fisheries, seabird interactions are managed by:

- mandatory use of seabird scaring devices[2]
- implementation of best practice seabird mitigation measures through vessel-specific Vessel Management Plans (VMPs)[3]
- an annual crew training programme
- ongoing exploration of new mitigation methods, and
- MPI observers monitoring vessel adherence to VMPs

Throughout 2016/17, actions in deepwater fisheries to support the NPOA Seabirds, will be focused on continuing to improve and implement the VMP process, including the expansion of operating procedures (generic fleetwide approach regarding best practice, including regulations) and training sessions for crew on bottom longline vessels. These measures will contribute to a reduction over time in the capture rate of seabirds from fishing activity, and meet the practical and biological objectives of the NPOA.

The biological objective of the NPOA is to reduce the level of mortality of seabirds so that species currently categorised as being at 'very high' or 'high risk' from fishing move to a lower category of risk. Alongside the development and distribution of species and area specific information sheets for fisheries, the Level 2 risk assessment model will be used to determine what reduction in captures would be required for each of the 'very high' and 'high' risk seabird species to move to a lower risk category. In the interim, industry-led fishery and seabird-species training courses and educational material will be disseminated to fishers focused on those particular seabird species.

Table 6 sets out the objectives and specific services planned for deepwater fisheries management. Many of the services will contribute to the achievement of more than one objective.

Table 6. Services planned for Deepwater Fisheries Management during 2016/17 in relation to implementing the NPOA Seabirds

[2] Regulations require trawlers over 28m overall length to deploy a seabird scaring device and bottom longliners to deploy streamer (tori) lines. See here for links to these regulations.
[3] Information on VMPs is available on the DWG website here

Five- Year Objectives :

Practical objectives

a) All New Zealand commercial fishing vessels are shown to be implementing current best practice mitigation measures relevant to their area and fishery

b) Recreational and customary non-commercial fishers understand the risks their fishing activities pose to seabirds, relevant organisations support and promote the use of best practice mitigation measures and it is the cultural norm in New Zealand to use such measures, and

c) Capture rates are reducing in all New Zealand fisheries in accordance with reduction targets in the relevant planning documents for those fisheries (3 year rolling average)

Biological risk objective

a) The level of mortality of seabirds in New Zealand commercial fisheries is reduced so that species currently categorised as at 'very high' or 'high risk' from fishing move to a lower category of risk

Planned Deepwater services for 2016/17

- Work with the Deepwater Environmental Liaison Officer to continually improve the VMP process and apply it across the wider deepwater fleet
- Continue to monitor adherence to VMPs, as well as review VMPs and education programmes to ensure all measures are as effective as possible. Our goal is:
  - **I.** 100% of observed trips have audited VMP
  - **II.** 95% of observers debriefed by FM Deepwater team
  - **III.** 90% of trips have no issues requiring follow-up
- Work across the FM Directorate and with key stakeholders to monitor the targets already developed and report on appropriate seabird performance measures including capture rate reduction targets
- Increase observer coverage to further monitor seabird interactions in the ling bottom longline fishery to reduce uncertainty in the risk assessment.
- Implement actions from the Black Petrel and Flesh-footed Shearwater Action Plan in the scampi fishery including:
  - **I.** Ongoing auditing and monitoring of adherence to VMPs
  - **II.** Monitoring of effectiveness of current mitigation measures detailed in VMPs
- Assist with the development and implementation of species and fisheries-specific action plans for seabird species considered to be at 'very high' or 'high risk' from fishing as follows:
  - **I.** Salvin's, Northern and Southern Buller's, and White-capped albatross plan
  - **II.** Chatham Island, Campbell black-browed albatross and Westland petrel plan

	• Improve awareness among vessel operators of times and areas where the risk of seabird interactions is increased.
Research and development objectives	
a) Where existing mitigation measures are impractical or of limited effectiveness in reducing the mortality of seabirds, new or improved mitigation measures have been sought and where identified are under development for all priority fisheries or fishing methods	• Contract a research project to characterise seabird captures in the deepwater fleet to identify any factors contributing to captures that may be mitigated • Investigate and implement any additional practicable and effective measures to minimise the risk of net captures based on outcomes of research
b) New observation and monitoring methods, especially in relation to poorly observed fisheries, are researched, developed and implemented; and	• Continue to engage in DOC and MPI research planning and review processes
c) Programmes of research to improve understanding of, and ability to mitigate, seabird incidental mortality for at risk species are underway and key projects for very high risk species have been completed	

ANNEX 3 – EXCERPT FROM THE DEEPWATER FISHERIES 2014/15 ANNUAL REVIEW REPORT

6 **Protected Species Frameworks -** NPOA Seabirds: Work to achieve the five year practical, biological, research and development, and international objectives within deepwater fisheries

The NPOA Seabirds was approved in 2013 and sets out the long term and five year objectives relating to managing fisheries interactions with seabirds.

The NPOA is underpinned by MPI's Risk Assessment approach to seabirds, which has identified the seabird species most at risk of being adversely affected by commercial fishing in New Zealand. The risk assessment also identified which fisheries compose the highest proportion of that risk.

This Management Action focuses on identifying and addressing the priority risk areas for deepwater fisheries. Actions aim to address, for example, where a deepwater fishery has been identified as contributing the majority of a risk score for a particular seabird, or where there is a high level of uncertainty regarding the level of risk generated from a particular deepwater fishery.

Further management actions related to monitoring adherence to non-regulatory management measures (principally Vessel Management Plans) aimed at reducing the risk of seabird interactions with the deepwater fleet are addressed through Management Action 10.

Key Actions for 14/15:

- Work across the Fisheries Management Directorate, and with key stakeholders to develop and report against appropriate seabird performance measures that inform progress towards meeting the objectives in the NPOA-Seabirds
- Develop and assist with implementation of species and fisheries specific action plans for seabird species with a risk score of >0.1 in the updated seabird risk assessment
- Increase awareness among vessel operators of the seasonal timing and location of specific seabird captures issues among the deepwater fleet. For example; Support DWG in development of a factsheet focussed on risk factors that contribute to and mitigation tools that reduce incidental captures of Salvin's and Buller's albatross
- Increase observer coverage to monitor seabird interactions in the bottom long-line fishery to reduce uncertainty in the risk assessment. Enable the Deepwater Environmental Liaison Officer (ELO) to work with vessel operators in the BLL fishery to increase awareness of available seabird mitigation tools
- Work with DOC to progress project to improve design of bird bafflers and encourage uptake across the deepwater fleet
- Work with stakeholders to minimise risk of net captures
- Provide the NPOA Stakeholder Advisory Group with additional detail on the VMP process
- Work with the DWG ELO to develop the VMP process and apply it across more sectors within the deepwater fleet – including scampi and BLL

Action linked to Management Objective 2.5

During the 2014/15 financial year, the following actions relating to the NPOA-seabirds were completed:

- Capture rate reduction targets were developed and agreed for selected deepwater fisheries and will be included in the 2016/17 Annual Operational Plan
- An action plan was drafted for Salvin's, Northern and Southern Buller's, and White-capped albatrosses but has not yet been finalised.
- DW mollymawk fact sheet developed (available here)
- The bird baffler design project progressed through the design and construction phases. Deployment on a vessel, and field testing, is scheduled to take place during 2015/16
- A research project was planned and tendered for 2015/16 to examine seabird captures and identify potential factors that contribute to net captures
- A VMP design for the scampi fleet was developed and then completed for each

vessel. The DWG ELO visited each vessel in the scampi fleet and delivered training to the crew.

- An interim Code of Practice was drafted and sent to the largest autoline and non-autoline bottom longline vessels. A new BLL Operational Procedure will be drafted during 2015/16. VMPs will not be developed for each vessel as all aspects of the operation of BLL vessels of relevance to seabirds is covered by legislation.
- The DWG ELO visited some of the BLL fleet to gather information and will aim to visit the remainder of the fleet during 2015/16

Part 3C: General environmental reporting and adherence to non-regulatory management measures

This part of the ARR summarises the overall impacts of deepwater fishing on the marine environment, and reports adherence to non-regulatory environmental mitigation measures for the 2014/15 fishing year. Species-specific environmental interactions are reported in Appendix I.

C.1 Environmental reporting

New Zealand's deepwater fisheries are known to interact with the marine environment including protected species, the benthic habitat, and other bycatch species. In order to achieve Management Objective 2.5, DWG and the Ministry work together to monitor adherence to non-regulatory management measures and environmental interactions.

Non-regulatory measures include vessel-specific management plans for mitigating incidental seabird captures (VMPs), Marine Mammal Operational Procedures (MMOP), and notification requirements for certain numbers of seabird or mammal captures (trigger points).

Vessel operators are required by law to report all captures of protected species to the Ministry on Non-fish/Protected Species Catch Returns. For reasons of increased reliability however, analyses of protected species interactions and adherence to non-regulatory measures is based on information collected on fishing trips carrying a Ministry observer.

Observers from each observed fishing trip are debriefed by MPI to determine the vessel's adherence to all non-regulatory measures. In any instance where issues were reported by observers, further follow up action is taken by DWG (discussed below).

The table below summarises the number of observed trips on trawl vessels >28m (and scampi trawlers <28m) completed during the 2012/13 to 2014/15 fishing years and the results of the audit of vessel adherence.

Table 13: Summary of MPI Observer audits of adherence to non-regulatory measures

Fishing year	Observed trawl trips	Reviews by DWG	Trips with no issues raised	Trips requiring follow up
2012/13	191	152	120	32
2013/14	183	162	128	34
2014/15	162	160	132	28

C.2 Seabirds

Total seabird captures in deepwater fisheries are estimated using statistical models that are informed by data on observed captures, fishing effort location data and seabird species distribution data. Estimated captures provide an estimate of the total number of captures that would be observed if all effort was observed. They do not take into account any seabird mortalities that may take place due to interactions with fishing gear but are not observed (cryptic mortalities). Cryptic mortalities are considered in the level 2 seabird risk assessment which informs the management of seabirds in New Zealand.

Information regarding observed captures of seabirds is available throughout each fishing year, whereas modelled total capture estimates take some time to process. Information presented here represents the best available information at time of publication.

Table 14 reports all observed seabird captures by species from tows targeting Tier 1 deepwater species for the 2014/15 fishing year.[4]

Table 14: Observed seabird captures for the 2013/14 and 2014/15 fishing years from the core deepwater fleet and any vessels targeting Tier 1 species ('Other' includes decomposed or unknown life status)

	2013/14				2014/15			
Seabird species	**Alive**	**Dead**	**Other**	**Total**	**Alive**	**Dead**	**Other**	**Total**
Albatrosses (Unidentified)	2	12	1	15	6	1	1	8
Black (Parkinson's) petrel	3			3	1	2		3
Black-bellied storm petrel				0	1			1
Black-browed albatross (Unidentified)	1			1	1			1
Buller's albatross	8	23	1	32	5	19		24
Buller's and Pacific albatross	1	6		7	3			3
Cape petrels	3			3	3	1		4
Chatham Island albatross	1	2		3		1		1
Common diving petrel	2	1		3	8	1		9
Fairy prion	3	1		4	5			5
Flesh-footed shearwater	11	2		13	1			1
Giant petrels (Unidentified)	2			2	6			6
Great albatrosses	1	1		1		1		1
Grey petrel	4	5		9	12	4		16
Grey-headed albatrosses	1			1				0
Light-mantled sooty albatross				0	2	1		3
Mid-sized Petrels & Shearwaters	1		1	2	6			6
Northern giant petrel	2			2				0
Petrel (Unidentified)	39	7		46	45	6		51
Petrels, Prions and Shearwaters	4	1		5	1			1
Prions (Unidentified)	11	1		12	5			5
Procellaria petrels	9	6		15	7	6		13
Pterodroma petrels				0		1		1
Royal albatrosses				0		1		1
Salvin's albatross	12	33		45	22	23		45
Shearwaters	3	3		6	4	2		6
Short-tailed shearwater				0		1		1
Shy albatross		2		2	1	1		2
Smaller albatrosses	3	2	2	7	3	3	1	7
Sooty shearwater	50	75		125	77	60		137
Southern royal albatross	1			1				0
Storm petrels		2		2	6	2		8
Wandering albatross (Unidentified)	2			2	1			1
Westland petrel	4	6		10	1	4		5
White-capped albatross	25	50	1	76	40	32	2	74
White-chinned petrel	41	73	1	115	110	136		246
White-faced storm petrel	1			1	2			2
White-headed petrel		1		1				0
Total	**251**	**315**	**7**	**573**	**387**	**310**	**4**	**701**

[4] This table uses raw data from MPI Observers; species identifications have not yet been verified and are subject to change after specimens are necropsied.

Table 15 shows industry reported seabird captures from the 2013/14 and 2014/15 fishing year. Tables 16 and 17 show the observed and model estimated total captures from all trawl fisheries, and by deepwater vessels targeting species in the National Deepwater Plan for the 2013/14 fishing year (includes some effort from vessels <28m).[5]

Table 18 shows the observed captures and capture rate for ling longline fisheries for the 2008/09 to 2014/15 fishing years. This is the only Tier 1 deepwater species fished using bottom longline.

Seabird interactions by fishery are reported in Appendix I.

Table 15: In-zone industry-reported seabird interactions from the 2013/14 and 2014/15 fishing years from the core deepwater fleet and any vessels targeting Tier 1 deepwater species (includes bottom longlining)[6]

	2013/14			2014/15		
	Alive	Dead	Total	Alive	Dead	Total
Large seabirds	82	244	326	116	230	346
Small seabirds	192	290	482	320	396	716
Total	274	534	808	284	524	1,062

Table 16: Observed seabird captures and modelled estimates of total captures* in all New Zealand trawl fisheries by vessels >28m[7] **from 2008/09 to 2013/14**

		Observed				Estimated		
	Tows	Tows observed	% of tows observed	Observed captures	Capture rate	Estimated total captures	95% confidence interval	Estimated capture rate
2008/09	29,978	7,407	24.7	373	5.04	1,332	1,187 – 1,493	4.44
2009/10	29,506	7,677	26.0	235	3.06	890	787 – 1,001	3.02
2010/11	27,393	6,213	22.7	326	5.25	1,220	1,088 – 1,360	4.45
2011/12	25,593	8,265	32.3	228	2.76	708	631 – 793	2.77
2012/13	23,972	11,817	49.3	705	5.97	1,084	1,024 – 1,149	4.52
2013/14	25,660	11,220	43.7	461	4.11	808	753 - 867	3.15

* Does not include estimates of cryptic mortality

[5] All data in this ARR has been compiled with the knowledge of a discrepancy in data for protected species in the Centralised Observer Database (COD). As part of MPI's ongoing review and testing of data accuracy, MPI has identified that about 2% of observed protected species captures between 2002 and 2015 were not recorded in COD. Steps are being taken to rectify this but it will take some time to update the database and any dependent estimates of protected species captures and risk. Accordingly, please interpret all estimates of protected species captures or risk in this document as likely to have a (probably small) negative bias. Updated estimates will be developed and reported as soon as possible.

[6] From Non-fish and Protected Species Bycatch forms.

[7] From https://data.dragonfly.co.nz

Table 17: 2013/14 Observed seabird captures and modelled estimates of total captures for New Zealand deepwater and middle-depth fisheries (includes effort by vessels <28m)

		Observed			Estimated	
	Tows	Tows observed	% of tows observed	Observed captures	Estimated total captures	95% confidence interval
Hoki	12,946	3,973	30.7	163	410	365 – 463
Hake	797	584	73.3	7	10	7 -15
Ling (trawl)	1,130	118	10.4	12	57	39 – 81
Squid (trawl)	2,051	1,787	87.1	203	236	223 – 252
Southern blue whiting	808	807	99.9	19	19	19 – 20
Jack mackerel	2,449	2,189	89.4	8	10	8 – 13
Scampi	4,421	254	5.7	26	194	159 – 236
Deepwater (ORH/OEO/CDL)	3,606	435	12.1	2	23	13 - 36
Tier 2 mid-depth*	6,408	1,398	21.8	54	318	244 – 414
Total	**34,616**	**11,545**	**33.4**	**494**	**1,277**	

* Includes all target fishing for Tier 2 species

Table 18: Observed and estimated seabird captures from ling bottom longline fisheries (includes all ling stocks and vessels <28m)

		Observed				Estimated	
	Hooks	Hooks observed	% of hooks observed	Observed captures	Capture rate	Estimated total Captures	95% confidence interval
2008/09	17,587,714	3,706,550	21.1	9	0.002	497	324 – 807
2009/10	18,395,093	1,717,425	9.3	10	0.006	541	363 – 849
2010/11	18,303,212	1,453,540	7.9	27	0.019	696	463 – 1,146
2011/12	17,015,393	1,701,100	10.0	8	0.005	472	322 – 696
2012/13	12,973,070	226,550	1.7	0	0.000	490	333 - 729
2013/14	21,655,008	1,979,516	9.1	36	0.018	798	539 - 1,233
2014/15	19,367,334	553,340	2.9	13	0.002		

More detailed information for captures and estimated captures of individual bird species may be found on the protected species website https://data.dragonfly.co.nz.

Vessel Management Plans (VMPs)

The following section summarises information provided through observer audits of vessel performance in relation to measures within VMPs. Measures within VMPs that vessels are audited against include the use of bird mitigation devices, the removal of fish 'stickers' from the net before shooting, avoiding shooting gear near congregations of marine mammals, and employing offal management techniques. Offal management is intended to reduce the amount of 'food' in the water for seabirds and marine mammals while fishing gear may pose a risk to those animals.

VMP-related issues that required follow-up by DWG were identified on 25 trips and were classed as being in one of four general categories (Table 19):

I. **Administrative** – Relating to misunderstandings about requirements i.e. the need for observers to be shown live seabirds prior to release

II. **Seabird trigger reporting** – relating to the reporting of trigger points

III. **Seabird scaring devices** – relating to the need to employ an additional seabird mitigation device when experiencing seabird captures, or when mitigation devices need to be replaced or repaired.

IV. **Offal management issues** – see below

Table 19: Breakdown of reviews with VMP-related issues during 2012/13 to 2014/15 fishing years

Type of issue	2012/13	2013/14	2014/15
Administrative	2	2	2
Seabird trigger not reported	2	2	2
Seabird scaring devices	8	6	8
Offal management issues	19	21	13
Total	31	31	25

Offal management issues

The management of offal is a contributing factor to both seabird and marine mammal captures and therefore issues with offal management on board vessels could be considered to be relevant to both VMPs and the MMOP. During the 2014/15 fishing year there were 13 trips that required follow up in relation to offal management issues. Issues are divided into four broad categories: general offal management, net cleaning or leaving the net in the water longer that desirable, floor wash, and primary offal management breakdown procedures. Table 20 provides information on the number of trips that required follow up for each category.

Table 20: Breakdown of offal management-related reviews for VMP/MMOP issues during 2012/13 to 2014/15 fishing years

Type of issue	2012/13	2013/14	2014/15
General offal management	15	14	7
Net cleaning / time in water	2	1	3
Floor wash	1	3	2
Breakdown procedures	1	3	1

Seabird bycatch trigger point notifications

All trawl vessels over 28 metres are required to notify DWG any time they capture more than a given number of seabirds within a defined time period. These are known as trigger point notifications. There were 11 trigger point activations for seabird captures in the 2014/15 fishing year. Trigger point specifics and activations are summarised in Table 21 below.

Table 21: Number of trigger point activations for seabirds in 2012/13 to 2014/15 fishing years from trawl vessels >28 m (overall length) or targeting scampi

	Trigger points				
Species	Captures in any 24 hr period	Captures in any 7 day period	2012/13	2013/14	2014/15
Seabirds - large	3 or more	10 or more of any species	7	3	0
Seabirds - small	5 or more		18	5	11

ANNEX 4 – EXCERPT FROM THE HIGHLY MIGRATORY SPECIES FISHERIES 2016-17 ANNUAL OPERATIONAL PLAN

Key focus area 2	*Manage interactions of HMS fisheries with seabirds*

Contributes to management objective 4: Minimise wastage and promote humane treatment;

Contributes to management objective 6: Maintain a sustainable fishery for HMS within environmental standards;

Contributes to management objective 7: Implement an ecosystem approach to fisheries management, taking into account associated and dependent species

Management Tasks

The National Plan of Action to Reduce the Incidental Catch of Seabirds in New Zealand Fisheries (NPOA-Seabirds) sets out a long term objective, supporting high-level subsidiary objectives, and objectives to be met within the first five years. Annual operational plans, including this one for HMS fisheries, incorporate more specific tasks to meet the objectives contained in the NPOA-Seabirds, including its long-term objective:

> *New Zealand seabirds thrive without pressure from fishing related mortalities, New Zealand fishers avoid or mitigate against seabird captures and New Zealand fisheries are globally recognised as seabird friendly.*

The NPOA-Seabirds is based on a **risk assessment** approach to identifying and managing seabird interactions. This focus on limiting captures of high-risk seabird species (those for which populations may not be able to sustain current incidental captures) is complemented by other objectives aimed at **reducing captures overall**; putting in place best practice measures in commercial and non-commercial fisheries; and working internationally to ensure all risks are addressed.

The risk assessment compares annual potential fatalities (based on observed captures, known seabird distributions, and multipliers for factors like unobserved mortalities) to potential biological removals (the maximum number of animals, not including natural mortalities, that may be removed from a stock while allowing that stock to reach or maintain its optimum sustainable population).

Capture Rate Reduction: One of the five-year objectives of the NPOA-Seabirds is that capture rates are reducing in all New Zealand fisheries. A sub-group of the Seabird Advisory Group was tasked with developing a set of principles that could be used when determining the potential for capture rates to be used in individual fisheries. This group recommended that fisheries be defined using the same groupings as those found in the risk assessment. In the case of HMS those groupings are the large surface longline, small

surface longline, and swordfish surface longline fisheries. The group also recommended that capture rates be quantitative when possible but that alternative proxies could be developed in cases where current conditions did not allow for a meaningful numeric target.

In the three HMS fisheries, only the large surface longline fishery has sufficient observer coverage and data for capture rates to be used as a measure of successful management over time. In the small surface longline and swordfish surface longline fisheries, the following proxy measures are proposed:

- Tori line, line weighing, and night-setting use rates on observed sets (compliance rates to be calculated based on observer data quarterly and annually in order to track improvement over time).
- Seabird Liaison Officer questionnaire responses about mitigation (to be coordinated by the Seabird Liaison Officers).
- Number of vessels with Seabird Management Plans (SMP) in place (to be coordinated by the Seabird Liaison Officers). There are currently zero vessels with SMPs in place. MPI and the Seabird Liaison Officer Programme aim to have 10 vessels with complete SMPs in place by the end of the 2016-2017 year.
- Levels of self-reporting of bycatch will be measured using the percentage of trips (observed and unobserved) where non-fish bycatch forms have been filed.

In several of these cases, past data collection has been insufficient, and so an important part of the team's seabird work in 2016-2017 will be ensuring that this data is collected properly. Monitoring this data will allow HMS managers to track management results overtime.

Many of the proxies listed above are aimed at assessing behaviour in the fleet as an alternative to a numerically based capture rate. Improved behaviour and by-in from operators should translate into improved practices and therefore fewer incidents of avoidable bycatch and these indicators should allow us to track progress towards this goal.

Species-Specific Action Plans: In addition to tracking general capture rate reduction (or proxy targets), the NPOA-Seabirds necessitates the creation of species-specific action plans for high risk species. In the HMS fisheries, Gibson's and Antipodean albatrosses have been identified as high risk species, and species-specific action plans have been drafted in 2015-2016 outlining a plan to achieve the NPOA-Seabirds goals of moving high risk species into a less-threatened risk category by 2018.

Best practice: The NPOA-Seabirds focuses on ensuring commercial fishing vessels are implementing best practice mitigation measures relevant to their area and fishery. A gap analysis of New Zealand legislative requirements and practice in relation to what is

considered "best practice" was performed in 2015-2016. This gap analysis shows several areas where mandated requirements and/or actual practice differ from what is considered best practice, including:

- Improved compliance with existing measures, particularly tori lines; and
- Improved use of line weighting.
- Improved use of mitigation methods during the haul

The proposed approach for ensuring vessels are operating to best practice is as follows:

- Analyse existing mitigation measures (in conjunction with DOC and fishers) to assess whether they are impractical and/or of limited effectiveness or have specific operational issues that may need to be overcome;
- Seabird liaison officers will work with fishers to develop seabird management plans or similar for similar vessels. The seabird management plans should take account of specific operational factors that may affect uptake of specific mitigation tools.
- Work with industry on a proposed comprehensive review of existing codes of practice operating in HMS fleets, and adopt an overarching set of risk reduction and management procedures that can be tailored to individual areas/fisheries as required.

It is also proposed to assess new/emerging mitigation measures for their suitability in HMS fisheries, including from an operational stand-point (in conjunction with DOC and fishers). A watching brief will be maintained on the operational effectiveness of the under-water bait setter (a device for setting hooks below a level at which they pose a risk to seabirds). The device is being trialled by a New Zealand fisher and if it proves effective in New Zealand operating conditions, more work may be required to facilitate its use (which would be outside of general mitigation rules if being used as a substitute for other mitigation). We will continue to work with DOC on studies relating to small vessel tori line development (MIT2014-02), seabird bycatch reduction (MIT2015-01), and small vessel seabird mitigation (MIT2015-02). A modified hook pod (based on recommendations from the skipper in the last New Zealand trial) is being trialled by MPI, DOC, and Birdlife International.

International actions: Many seabird species found in New Zealand waters also travel widely across the Pacific and beyond, and international advocacy is an important component to successful management of seabird interactions. Out-of-zone impacts can include both fisheries impacts and wider changes such as availability of prey species. In particular, the range of wandering albatrosses, which are caught in domestic longline fisheries, overlaps with a wide range of fisheries outside the New Zealand zone.

Specific international actions include:

- Undertake and communicate a seabird risk assessment covering all ACAP species

throughout the Southern Hemisphere, including presenting results to CCSBT and WCPFC. Data collection and analyses are planned in a phased approach with the entire Southern hemisphere by October 2016

- Continue to seek improvements to data capture and sharing on bycatch species across RFMOs
- Advocate for the adoption of proposal to extend existing WCPFC mitigation measure requirements from 30°S to 25°S. Consider bilateral talks with Distant Water Fishing Nations (DWFNs) and Pacific Island Countries (PICs) in lead up to meetings in order to overcome obstacles.
- When possible, support fisheries managers in the Pacific Islands to create sound governance arrangements in relation to minimising seabird interaction and mortality.
- Seek to align information collected on seabird conservation measures with Australia, Chile, and other nations NZ does joint patrols with.
- Consider requesting observer status at IATTC, with the intention of raising awareness of potential risks to NZ seabirds within IATTC fisheries.
- Use existing cooperation Memorandum of Understanding (MOU) between MFAT and MPI to help Small Island Developing States develop NPOA-Seabirds.

Associated services

- Fisheries management: provision of relevant data through RFMOs; and liaise on other seabird tasks
- Science: lead research projects and provide advice as required on other tasks
- Compliance: monitor compliance with existing requirements and regularly report findings to fisheries managers
- Observer services: deliver planned observer coverage
- Data management: manage data submission process for CCSBT ecologically related species (ERS) data, WCPFC data, and data for capture rate proxies.
- Stakeholders: manage fishing activities to minimise interactions with seabirds; provide input and advice to improve mitigation measures where possible; participate in fisher workshops; support efforts to improve representativeness of observer coverage; lead code of practice review and adopt SMPs for vessels.

Key Performance Indicators

- Participate in meetings of Seabird Advisory Group and MPI/DOC joint seabird planning group
- Draft document laying out the details of proxy measures (data and targets)
- Implement Species-Specific Action Plan for Gibson's and Antipodean albatrosses
- Complete Southern Hemisphere Seabird Risk Assessment
- Bring proposals to CCSBT and WCPFC
- Assist Pacific Islands to develop their own NPOA-Seabirds based on IPOA-Seabirds

ANNEX 5 – EXCERPT FROM THE HIGHLY MIGRATORY SPECIES FISHERIES 2015-16 ANNUAL REVIEW REPORT

KFA 4: Manage interaction of HMS fisheries with seabirds

Domestically, MPI hoped to improve compliance with existing measures, increase use of line weighting, analyse existing mitigation techniques, and revise regulations to better meet "best practice." In 2015-2016, seabird issues were prioritised at stakeholder meetings and Fish Plan Advisory Group meetings. MPI also held several Seabird Advisory Group (SAG) meetings and established the Joint MPI-DOC Seabird Project Planning Group which first met in December 2015.

The HMS team will establish capture rate reduction targets and proxy targets for the three HMS fisheries:

- Large Vessel Surface Long Line
- Small Vessel Surface Long Line
- Small Vessel Swordfish Surface Long Line

Capture rate reduction targets are intended to provide a gauge against which the Practical Objective of the NPOA-Seabirds objective of continuous improvement in New Zealand fisheries can be measured. As observer coverage levels are not high enough in the small vessel or small vessel swordfish surface long line fisheries to set capture rate reduction targets, four proxy measures have been proposed, and are as follows:

- Tori line, line weighing, and night setting use rates on observed sets (compliance rates to be calculated based on observer data quarterly and annually in order to track improvement over time).

- Seabird Liaison Officer questionnaire responses about mitigation (to be coordinated by the Seabird Liaison Officers).

- Number of vessels with Seabird Management Plans (SMP) in place (to be coordinated by the Seabird Liaison Officers).

- Levels of self-reporting will be measured using the percentage of trips (observed and unobserved) where a non-fish bycatch form has been filed.

Data for these proxies is incomplete looking backward, but initial proxy targets will be laid out in the 2016-2017 AOP while initial data collection takes place as part of this plan. At the time of this report, there are zero vessels with SMPs in place, and we have the following limited data on self-reporting. In the 2012/2013 fishing year, 46 of 521 fishing trips were linked to at least one non-fish bycatch form (approximately 8%). In 2013/2014, 32 of 456 trips were linked to at least one non-fish bycatch form (approximately 7%). That rate doubled the next year, with 60 of 411 trips having a form (approximately 15%). Future numbers and analysis should help us understand trends in self-reporting.

In line with the NPOA-Seabirds, the HMS team also wrote Species-Specific Action Plans for the two highest risk seabird populations in HMS fisheries, Gibson's and Antipodean Albatrosses. These actions will be included in the 2016-2017 AOP as an Appendix and considered when establishing key performance indicators for the Seabird KFA.

Finally, the Seabird Liaison Officer worked with MPI and fishers to develop seabird management plans for individual fishing vessels. In addition to working with fishers to boost the efficacy of seabird bycatch reduction strategies in place on vessels, a new prototype hook pod is being trialled and new tori line designs and materials tested. Quantitative and qualitative data was gathered, especially relating to rumoured/unreported seabird captures, incentives and disincentives to report seabird captures, and the perceptions of fishers of seabird mitigation rules and the current state of seabirds.

Internationally, MPI Science led and contributed to seabird risk assessment covering the entirety of the Southern Hemisphere. Seabird mitigation-related proposals were brought to both the CCSBT and the WCPFC. The CCSBT revised seabird rules under a new measure relating to ecologically related species. The requirements confirm that vessels from countries that are CCSBT members are bound by the mitigation and reporting rules of the relevant tuna RFMO, depending on where the vessel is fishing. New Zealand was also able to push through changes that will allow data to be collected on individual mitigation methods being used as part of observed trips. The New Zealand delegation to the WCPFC additionally proposed an amendment to the seabird mitigation rules of the WCPFC to extend the rules from 30° South to 25° South. Although the proposal had the support of our Pacific neighbours, it was unsuccessful at the Commission meeting.

ANNEX 5 – EXCERPT FROM THE INSHORE FISHERIES 2015-16 ANNUAL REVIEW REPORT

Five year Objective: 75 i) a: All NZ commercial fishing vessels are shown to be implementing current best practice mitigation measures relevant to their fishery	
Management Actions	Description and Rationale
▪ Continue supporting the roll out of SMPs in South Island inshore trawl ▪ Check adherence to SMPs in FMA1 SNA and BNS bottom long line. ▪ Undertake technical review of mitigation options and develop 'current best practice' options for inshore bottom long line and trawl. ▪ Incorporate new developments in best practice measures into inshore SMPs. ▪ Review liaison officer pilot in FMA1 ▪ If liaison officers are found to be effective, MPI will contribute, with DOC, to employ officers in FMA1 for the 2015/16 summer period and consider expansion to include any BLL vessels operating in FMA2. ▪ Support the delivery of initial and or follow up 'Seabird Smart' training for commercial skippers and crew around New Zealand.	By 2018, Vessel Management Plans (VMPs), Seabird Management Plans (SMPs) or a Code of Practice (COPs) will be developed for all NZ vessels that operate in fisheries that risk catching seabirds (See NPOA targets and performance measures document). During the 2013/14 and 2014/15 summer periods, MPI/DOC seabird liaison officers facilitated the development of SMPs for all bottom longline vessels in the FMA1 snapper and bluenose fisheries. The Inshore Fisheries Management Company, with assistance from MPI, has made a delivering SMPs on trawl vessels between 14 – 28m in the South Island. During 2015/16, MPI will continue to support the Inshore Fisheries Management Company's SMP roll out in the South Island. During 2015/16 MPI and DOC will review SMPs produced by the FMA1 seabird liaison officer pilot and review their effectiveness as a tool for ensuring fishers use mitigation. This will be done through planning and undertaking checks using observers, MPI Compliance at sea patrols and port side checks by Fisheries Officers. In addition the FMA 1 liaison officers will report on their perception of adherence to SMPs, which will be derived from discussions with fishers. At the completion of 2015/16 seabird liaison officer project, MPI and DOC will also review the liaison officer model to ensure it is effective in delivering improvement in mitigation use. Information from observers, fisheries officers, company fleet managers and other sources will be taken into account. In keeping with the NPOA principles of continuous improvement, the next stage in SMP development will be to review mitigation options and develop 'current best practice' measures. MPI will organise and facilitate an inshore bottom long line and trawl technical workshop to review existing information on mitigation design and effectiveness, and subsequently develop a portfolio of 'best practice mitigation' options. These mitigation options will be reviewed on an ongoing basis and take into account any significant advancements. Ongoing inshore commercial fisher education and support will be provided through Southern Seabird Solutions Trust (SSST) training workshops and the MPI/DOC seabird liaison officers. SSST seabird training workshops have been held in a range of ports since 2011 and currently around 98% of bottom longline fishers in FMA1 have attended. While training has also been delivered in some of South Island ports, a number of fishers are yet to be trained, particularly those based in Nelson, Bluff, and Westport. During 2014/15, with the support of MPI, the SSST training programme was

	reviewed and updated. Key areas of improvement include ensuring fishers understand the importance of meeting the NPOA objectives, increasing understanding of the risk that different seabirds face from fisheries and placing more emphasis on mitigation options. The workshops have also been tailored to be specifically relevant to the port/region that it is delivered in. In 2015 MPI will support SSST to hold two further workshops in FMA 1 and to work with licensed fish receivers to encourage/require their fish suppliers and skippers to attend training. MPI will also support SSST to deliver training in South Island locations.
Five year Objective: 75 i) b: recreational and customary non-commercial fishers understand the risks their fishing activities pose to seabirds, relevant organisations support and promote the use of best practice mitigation measures and it is the cultural norm in NZ to use such measures	
Management Actions	Description and Rationale
▪ Continue to support education and outreach programmes ▪ Explore the feasibility of using planned recreational surveys to gather information on the risk recreational fishing poses for seabirds	Several seabird public education and awareness campaigns are underway in FMA1. DOC is funding SSST to deliver a two-year programme of work to educate recreational fishers in FMA1. In addition SSST is commencing a partnership with Ngati Rehua, Ngati Manuhiri and Ngati Wai, to foster seabird smart fishing amongst their customary and recreational fishers. MPI and DOC will continue to support these initiatives by disseminating information to recreational fishing audiences through their front line staff. All of the work to date has been centred on the Hauraki Gulf. This region was prioritised on the basis that the most intensive fishing occurs here, and because of the presence of several at risk seabird species. There are significant information gaps in relation to the magnitude of the issue nationally, likely hotspots and species composition. MPI will use planned recreational surveys to build a better understanding of the seabird issue.
Five year Objective: 75 i): capture rates are reducing in all New Zealand fisheries in accordance with reduction targets in the relevant planning documents for those fisheries	
Management Actions	Description and Rationale
▪ Set annual capture rate reductions per fishery using the annual potential fatality (APF) reductions needed to achieve the NPOA biological objective. ▪ Implement seabird capture rate reduction targets for fisheries that do not	The majority of inshore fisheries will be achieving significant capture rate reductions over the next four years in order to achieve the biological risk objective of the NPOA-Seabirds. In summary: ▪ inshore trawl fisheries will be achieving risk reductions for black petrels, flesh-footed shearwaters, Salvin's albatross, white-capped albatross and southern Buller's albatross; ▪ the flatfish trawl fishery will be achieving risk reductions for Salvin's albatross, white-capped albatross, southern Bullers albatross and Westland petrel ▪ bluenose, snapper and other small bottom longline fisheries will be achieving risk reductions for black petrels, Westland petrels and flesh-

capture high and very high risk seabirds, but which are likely to capture seabirds (i.e. set net fisheries outside FMA1).	footed shearwaters; ▪ The set net fishery in FMA1 will be achieving risk reductions for black petrels. The only inshore fishing methods that do not overlap with high or very high-risk species are set nets, primarily outside of FMA 1. Given the levels of observer coverage in these fisheries robust estimates of capture rates are unknown. As such, setting a meaningful reduction target is in these fisheries will be a challenging exercise. MPI will collaboratively develop a seabird mitigation code of practice for set net fisheries which will be promoted in conjunction with industry organisations.
Five year biological risk objective: 75 ii): The level of mortality of NZ 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	
Management Actions	Description and Rationale
▪ Continue implementing the Black Petrel and Flesh-footed Shearwater Action Plan. ▪ Work with the HMS and Deepwater teams to develop Action Plans for the other high and very high-risk seabird species.	The fisheries actions described in this AOP are prioritised to reduce the biological risk facing high and very high-risk seabirds. Actions described for FMA1 and 2 are drawn from the Black Petrel and Flesh-footed Shearwater Action Plan. By November 2015, Action Plans will have been prepared for the remaining high and very high risk seabirds, and the inshore team will be contributing to this process.
Five year Objective: 75 iii) a): where exiting mitigation measures are impractical or of limited effectiveness in reducing the mortality of NZ seabirds, new or improved measures have been sought and where identified are under development for all priority fisheries or fishing methods	
Research Actions	Description and Rationale
▪ Work in collaboration with DOC and other organisations involved in inshore mitigation research to support development and/or testing of mitigation options.	Several inshore fisheries still have a limited set of mitigation options available to them, and/or the effectiveness of measures is not well understood. DOC has completed a number of development and testing programmes in recent years and will continue to lead in this regard. MPI will work collaboratively with DOC, and where needed support the research programme.
Five year Objective: 75 iii) b): New observation and monitoring methods, especially in relation to poorly observed fisheries, are researched, developed and implemented	

Research Actions	Description and Rationale
▪ Work pro-actively with the SNA1 Commercial Stakeholder Group and FINZ to progress electronic monitoring as a means to improve protected species estimations.	At sea data is needed that is robust enough to detect changes in incidentally mortalities of seabirds over time. Placing observers on small inshore vessels continues to be problematic and has limited the extent and representativeness of coverage in some inshore fisheries. In the period between 2007 and 2014, government undertook several sea trials to assess the feasibility of using electronic monitoring to detect captures of protected species. DOC, MPI, Trident Systems and SSST are following up on this earlier work and currently testing the ability of the latest camera technology to detect seabird captures. The aim of the trial is assess whether EM is an effective tool for monitoring seabird captures. If successful the trial will allow the prioritisation of seabird captures as a monitoring objective within any future EM programme. This will help increase the information available to feed into the seabird risk assessment and associated processes. The results of the EM trial are expected to be available in mid-late 2015.
Five year Objective: 75 iii) c): Programmes of research to improve our understanding of and ability to mitigate seabird incidental mortality for at risk species underway and key projects for very high risk species have been completed	
Research Actions	Description and Rationale
▪ Investigate correlations between seabird captures and environmental variables in inshore fisheries.	In support of DOC research projects in relation to foraging behaviour around vessels MPI will analyse existing observer data to identify possible correlations between seabird captures and environmental factors such as night versus day setting, moon phase and other variables.
Five year international objectives: In areas beyond the waters under NZ jurisdiction, relevant RFMOs, and governments (also relevant industry organisations, fishing companies, and fishers) understand the potential risk posed to NZ seabirds from fishing activities for which they have responsibility and are taking actions to reduce that risk where it is likely to be high.	
Management Action	Description and Rationale
▪ Engage with the Inter American Tropical Tuna Commission (IATTC), and use New Zealand's bilateral relationships with South and Central American countries to raise awareness of risks to NZ seabirds.	Black petrels spend a significant part of their lives outside the NZ EEZ. After breeding, adults migrate to the EEZs of Mexico, Ecuador, and northern Peru. Fledging black petrels also migrate to central America and spend their pre breeding lives there. A range of fishing fleets operate in this region. While the extent of black petrel mortalities are not known, the use of mitigation measures by vessels in the region is likely to be low. MPI will investigate how best to engage with the Inter American Tropical Tuna Commission (IATTC) as a non-party, to highlight the status of black

	petrel. MPI will draw ACAP member's attention to the likely strong overlap in foraging ranges and fisheries risk between waved albatross and black petrels, and request the secretariat to provide an update of progress against the fisheries actions in the Waved Albatross Action Plan for the next Advisory Committee meeting. With the support of MFAT, hold bilateral (or tri-lateral) discussions with the Ecuadorian and Peruvian governments to establish data exchange protocols, share mitigation knowledge, and develop joint research programmes. If possible set up an ongoing information and technology sharing arrangement with the relevant government departments. As part of the discussions, explore the option of supporting the development of a NPOA-Seabirds in these two countries, and supporting in country education and advocacy programmes.