Feedback on the draft Conservation Services Programme Annual Plan 2023/24

Yellow-eyed Penguin Trust
11 May 2023

INT2023-02 Species identification of camera-detected protected species captures in New Zealand fisheries

Term: 1 year

Guiding Objective: CSP Objective A; National Plan of Action – Seabirds; National Plan of Action – Sharks; New Zealand sea lion and Hector's and Māui dolphin Threat Management Plans.

Project Objectives:

1. To determine, through examination of camera footage clips, the taxon and, where possible, sex, age-class and provenance of protected species captured in New Zealand fisheries (for live captures or dead specimens discarded at sea).
2. Project the anticipated scale of work once cameras are fully deployed.

The accurate determination of the taxon of protected species captured in New Zealand fisheries is vital for examining the potential threat to population viability posed by incidental fisheries captures. With the roll-out of cameras on inshore commercial vessels, experts will be needed to assess records of protected species interactions and identify species to the lowest possible taxonomic level.

Project Outputs:

Produce technical report(s) that details a summary of the capture identification results and projected workload for protected species identification following the full deployment of cameras on boats.

Information gained through this project will link to Fisheries New Zealand databases and will inform ongoing bycatch estimation, risk assessment, research, and modelling of the effects of fisheries bycatch on protected species. This project acts as a pilot to assess incoming cameras information as well as project the anticipated scale of work once cameras are fully deployed. Work from this project will identify any barriers to smooth operations and inform how cameras-detected species ID is managed in the future. The project will also recommend any other areas for possible future analysis or investigation.

Indicative Cost: $60,000

YEPT comments on INT2023-02:

- YEPT is supportive of this project.
- Observer verification simultaneously with camera data (for at least a proportion of observed fishing events) would be the best way to ensure that bycatch species are correctly identified.

- This project is critical for ensuring that good quality accurate data is being collected for risk assessments of bycatch.
- This project is also necessary for working out how much time and effort is required for analysing bycatch data in the future.
- Supports the Hoiho strategy (Te Kaweka Takohaka mō te Hoiho) and Te Mahere Rima Tau – specifically action 6b ensure annual observer coverage or electronic monitoring of at least 50% on setnet vessels within hoiho habitat.

INT2023-06 Investigating the impact of fisheries on endangered hoiho diet, microbiome and disease susceptibility

This project was submitted by University of Otago.

Term: 2 years

Guiding Objectives: CSP Objectives D and E; National Plan of Action – Seabirds; CSP Seabirds Medium Term Research Plan

Project Objective:

The main research objective is to investigate the relationship between hoiho microbiome and susceptibility to illness and changing diet, as a result of bottom trawling fishing practices.

Project Outputs:

The expected outputs from this proposed project will include written technical reports, peer-reviewed scientific publications, graphics, and collected and analysed data outlining the status of northern and southern hoiho populations' diet, characterising their microbiome, and identifying viral illnesses present at breeding sites over the time period 2017 to the present day. This information, in combination with other studies into the feeding zones and health of hoiho, will deliver a clearer picture of the impact of fishing practices, such as bottom trawling, on the species. Importantly, any differences between northern and southern populations will be identified and highlighted. These reports and publications will be disseminated for review by interested parties, including the CSP.

Indicative Cost: $50,000 per annum

YEPT comments on INT2023-06:

- YEPT is supportive of this project.
- This project is critical for assessing the links between hoiho diet and microbiome, and therefore the birds susceptibility to disease which has increased in recent years.
- Hoiho are mostly benthic foragers and individuals exhibit consistent foraging patterns and behaviour through time, which makes them very vulnerable to benthic disturbance.
- Comparing hoiho foraging areas which have varying levels of trawl intensity and spatial coverage may help to elucidate the impact on hoiho from bottom trawl fisheries.
- This project supports the Hoiho strategy (Te Kaweka Takohaka mō te Hoiho) and Te Mahere Rima Tau – specifically actions 7e examining the spatial and temporal patterns in diet, and 2g characterising the disease status for southern and northern populations.

- As this project also covers the Southern population of hoiho it will help to fill a knowledge gap that needs urgent attention.
- Data from this project will also be valuable in a wider context (e.g. for species wide multi-threat risk assessments).
- There are opportunities for data collection during two other projects: POP2023-03 population and habitat utilisation at Campbell Island, and MIT2023-03 habitat utilisation and diet on Rakiura.

POP2023-03 Updated population estimate and marine habitat utilisation of yellow-eyed penguins/hoiho breeding on Campbell Island

Term: 2 years

Guiding Objectives: CSP Objectives C, D and E; National Plan of Action – Seabirds; CSP Seabirds Medium Term Research Plan

Project Objectives:

1. To obtain an up-to-date estimate of abundance for Campbell Island hoiho (which may include mark-recapture methods and nest searches for breeding pairs).
2. To monitor the health status of hoiho on Campbell Island.
3. To collect data on the marine habitat utilisation and diet of hoiho for data deficient breeding and non-breeding periods as well as for different life history stages (adults, juveniles).

Project Outputs:

1. A technical report (and associated data layers) detailing:
    a. A population estimate for Campbell Island hoiho including methodology; and
    b. The spatio-temporal distribution of Campbell Island hoiho.
2. Population data collected under this project are critical for assessing the species wide risk from bycatch in setnets and can inform species wide multi-threat risk assessments. Furthermore, foraging distribution data for the southern population are important as they can inform assessments of any direct or indirect effects of trawling on hoiho.

Indicative Cost: $100,000 per annum

YEPT comments on POP2023-03:

- YEPT is supportive of this project, and is happy to see that the primary objective has been tweaked to focus on obtaining a population estimate for the Southern population of hoiho (as these data are currently lacking).
- We are also pleased to see the secondary objectives of obtaining habitat use and diet data, and disease data which are also missing for Campbell Island.
- Population and foraging distribution data are important for assessing any potential direct or indirect effects of trawling. But more importantly population data are critical for assessing the species wide risk from bycatch in setnets (i.e. if hoiho are abundant in the

subantarctic, risk from setnet fisheries to the species may be considered less significant, but if hoiho are not abundant the risk to the species is greater).

- There is an opportunity to increase mark-recapture efforts for the Southern population of hoiho as well as monitor the health of birds. Data here are very poor compared to the Northern population.
- Population data for the Southern population are also very valuable in a wider context (e.g. for species wide multi-threat risk assessments).
- There are opportunities for cost sharing with INT-12 hoiho diet, microbiome and disease susceptibility, POP-9 Campbell Island seabird research and POP-1 Auckland Islands New Zealand sea lions.
- Supports the Hoiho strategy (Te Kaweka Takohaka mō te Hoiho) and Te Mahere Rima Tau – specifically actions 5c (provide knowledge about status and health of southern population), 6f (update SEFRA with new info), and 6h (assess the risk of bycatch from trawl fisheries).

MIT2023-03 Describing the marine habitat utilisation and diet of hoiho to analyse the effectiveness of mitigation tools at a major breeding colony on Rakiura/Stewart Island

Term: 1 year

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

Project Objective:

To study the habitat utilisation (GPS-dive loggers) and diet of hoiho (bird-borne cameras/molecular diet analysis) breeding at two sites during different breeding stages (guard, post-guard and pre-moult) to quantify the spatial overlap of hoiho with local fishing activities and fisheries target species (dietary overlap) and whether this can explain differences in breeding success between the two main breeding sites of the Neck area on Stewart Island/Rakiura. Importantly, this project will provide an opportunity to analyse the effectiveness of recently established voluntary set net closures adjacent to the Neck area.

Fisheries activities can pose direct and indirect threats to seabirds. Direct effects include incidental captures in fishing nets and benthic disturbance, whereas indirect effects include resource competition when fisheries and seabirds target the same prey, potentially affecting seabird breeding success. The wider Neck area on Stewart Island/Rakiura harbours ~20% of the current breeding population of the nationally endangered yellow-eyed penguin/hoiho on Rakiura making this an important breeding colony. Breeding areas on the Neck are concentrated at two main sites: Little Glory Bay, which lies on the Paterson Inlet side of the Neck and Steep Head, which lies on the seaward side. Based on previous tracking studies of hoiho breeding on islands in Paterson Inlet (POP2018-02, POP2020-05) it is assumed that hoiho breeding at Little Glory Bay will also forage in Paterson Inlet, whereas hoiho breeding at Steep Head are more likely to feed out at sea. Importantly, hoiho at Steep Head may face a higher risk from incidental capture in setnets compared to hoiho breeding at Little Glory Bay, Paterson Inlet and other sites (e.g., voluntary exclusion zones) where no set netting activity takes place. Furthermore, hoiho breeding at Steep Head have shown reduced breeding success in recent years compared to birds from Little Glory Bay, possibly due to less favourable foraging conditions.

Project Outputs:

A technical report and associated data layers showing:

a) the spatio-temporal distribution of hoiho from the Neck, Rakiura in relation to setnet fisheries with an assessment of potential direct or indirect effects on hoiho foraging; and

b) evaluating the potential effectiveness of the voluntary setnet exclusion zone adjacent to the Neck, Rakiura and information needed to review it if needed.

Indicative Cost: $40,000

YEPT comments on MIT2023-03:

- YEPT is supportive of this project.
- This project provides a valuable opportunity to analyse the effectiveness of the new voluntary exclusion zone established by fishers to minimise the potential adverse effects of commercial setnets to the east of the Neck area.
- Data on the overlap of setnet fisheries and hoiho foraging in this important location (given that 20% of the hoiho population on Rakiura inhabit these sites) are key for assessing risk to the species.
- There is an opportunity to increase mark-recapture efforts for the population of hoiho at these locations. Data here are currently poor in comparison to the mainland.
- In a wider hoiho multi-threat context it is important to try and tease apart the reasons for the major differences in breeding success and the survival of chicks from the two colonies in this area.
- Supports the Hoiho strategy (Te Kaweka Takohaka mō te Hoiho) and Te Mahere Rima Tau – specifically actions 6a (implementing practices that eliminate bycatch) and 6f (update SEFRA with new info), 7a (determine which marine protection measures are effective), 7d (investigate foraging from colonies where little data exist) and 7e (research to examine patterns in hoiho diet).
- Advice and support would need to be sought and obtained from Rakiura Māori Lands Trust (as the landowner and mana whenua) prior to embarking on this project.
- There are opportunities during this project for collecting data for INT-12 diet, microbiome and disease.