CSP/Bycatch project longlist 2022/23

INT, POP/ MIT	Title	Summary	Duration (Years)
INT 1	Seabird ID	Next 3 years of seabird ID (July 2022-June 2025). To determine, by necropsy or images, which seabird species are captured in fisheries and the mode of their capture. Confirms or revises observer IDs made at sea with any updates being made to the COD database.	3
INT 2	Coral ID	Next 3 years of coral ID (July 2022-June 2025). This project employs experts to identify and validate coral bycatch specimens returned by fisheries observers, including physical and photographed specimens. Revised IDs are fed into the COD database so that it remains up to date with accurate coral IDs.	3
INT 3	Observed marine mammal sightings database	As done with seabirds, observers collect data and imagery of sightings of marine mammals at sea. This project will involve inputting this data from previous and current data collection forms into appropriate databases. Sightings data is a useful resource alongside fishing interactions to inform species distributions, risk assessments etc.	1
INT 4	Reviewing and assessing the utility of camera footage for identifying protected species interactions with commercial fisheries	The potential utility and scope of using camera footage for understanding, quantifying, and mitigating interactions of New Zealand fisheries with protected species is unclear, and in need of clarifying given the protected-species driven objectives of the cameras rollout. This project aims to use footage arising from vessels and fisheries implementing cameras during the next stage of the cameras rollout from the 2022/23 fishing year to ascertain how data analysis can be targeted and standardised through the lifespan of the cameras Implementation Plan and Tranche 2 of the rollout to inform review protocols. Depending on footage obtained (and fisheries involved), a particular protected species group may be the focus taxa of this study, but there may be scope to address footage usage applicability to all protected species groups commonly bycaught. Builds upon INT2017-02.	1
INT 5	Pelagic foraging seabirds in the wider Hauraki Gulf area	1. To better understand the nature and extent of fisheries extractions in changing seabird populations in north-east New Zealand. This project builds on the recent pilot study funded by DOC and is envisaged as a 3 year project to seek partnerships, and seed fund relevant projects, which cover: - population monitoring of key populations (gulls, terns, fluttering shearwaters) - diet of birds at key colonies - at-sea assessment of food availability in shoals, including inter-annual variation	3
INT 6	Impact of fishing on the ecosystem services provided by deep-sea corals in the New Zealand region	This project aims to determine the relationship between the abundance/biomass of protected corals and the ecosystem services they provide, and compare the provision of these services in unfished, fished and closed areas. Coral ecosystem services have never been estimated in New Zealand waters. To do this, the project will examine varied data sources including trawling distribution data, abundance-based species distribution model outputs, and existing video and still imagery data to determine various ecosystem services measures relating to supporting, provisioning and regulation services (e.g., habitat provision for diverse associated invertebrates, habitat and nursery grounds for commercially exploited fish, and carbon cycling and storage). The project will focus on seamount complexes and other areas on the Chatham Rise to establish the relationship between the abundance of stony corals and the the adundance and diversity of associated invertebrates and fish, information which can then be used to establish coral density thresholds at which high biodiversity is supported, and to determine whether stony corals are a potential nursery ground for juvenile fish. A second component of the project will determine carbon storage provisions of coral habitat. Finally, examining areas subject to differing fishing pressures could enable better understanding of the impacts of commercial trawling on ecosystem services provided by corals, and mapping this information EEZ-wide could feed into consideration of mitgation approaches.	2

INT 7	Post-release survival of spine-tailed devil ray taken as incidental bycatch in the New Zealand skipjack tuna purse seine fishery.	This project is an extension of MIT2011-01 and INT2018-05. Changes in the composition and operation of purse seine fisheries in New Zealand mean the characterisation of spinetailed devil ray handling and post-release survival may no longer be accurate. Previous estimates of post-release survival using survival tags attached to rays that had been landed on deck indicated low survival following release. These results may not be representative of actual post-release survival as spinetailed devil rays caught by vessel currently operating in New Zealand waters are reportedly brailed for direct release or released over the cork-line and therefore not landed onboard the vessel. This project would describe current industry practice around interactions with devil rays, including their handling and release, and assess post-release survival of up to 30 devil rays using satellite tags deployed on bycaught rays that have been treated in a manner comparable to practices currently occurring on purse seine vessels. The tagging methodology would be developed in collaboration with Pelco. A smaller number of free-swimming devil rays would be tagged as a control group and to provide further information on movements and habitat use. This project addresses CSP objectives A and B, and incorporates research proposed by Pelco.	3
MIT 1	Large trawl vessel warp mitigation	1. To assess the use and effectiveness of warp mitigation options currently in use across the fleet. Mitigation requirements in this fleet have remained unchanged for a number of years, and substantial new data on bycatch is available from good levels of observer coverage. This project aims to further improve mitigation effectiveness to progress towards a zero bycatch goal by using observer data to assess effectiveness of current options and make recommendations for best practice	1
MIT 2	Inshore trawl warp mitigation	1. To assess the effectiveness of mitigation options currently in use. A number of warp strike mitigation options are currently being used, with no clear guidance on best practice. Observer coverage has been low in many part of this fleet, so this project will involve undertaking dedicated observations of bird behaviour in relation to different mitigation options, with a view to recommending best practice guidance for the fleet.	1
MIT 3	Hook-shielding device use in the surface longline fishery	1. To continue support for use of hook-shielding devices in the surface longline fleet. This project will seek to ensure continued supply of replacement Hookpods to surface longline vessels opting to use this mitigation option.	1
MIT 4	Bait retention as a driver to mitigation use in the surface longline fishery	The role of bait retention as a driver to mitigation use in the surface longline fishery is hard to quantify due to the lack of robust data on bait loss and the economic consequences. This project will identify ways to collect and compile data on biat loss rates across a variety of fishing operations and seabird bycatch mitigation use and source data on the economic implications. There may be synergies with proposed data collection focussed on Hookpods. This will better inform economic modelling on seabird bycatch mitigation use in surface longline fisheries, which may act as an important driver for mitigation update both domestically and internationally.	1
MIT 5	Weak hook trials in the surface longline fishery	Weak hooks are considered to allow protected species such as orca, pilot whales, turtles and great white sharks to free themselves and reduce long-term injuries, thus aid in post-release survival. Also known as whale safe hooks, they are made of a softer metal that can be straightened by a large animal, whilst strong enough to retain target catch. Field testing of these hooks is currently underway internationally. This project would involve the supply of weak hooks to trial vessels that operate in areas of high interactions, e.g. FMA1.	2
MIT 6	Methods to improve small vessel bottom longline sink rates	Project to progress any options to increase line sink rates partially developed, or identified for development, during 2021/22, including those considered as part of MIT2021-03. Project to be developed and device(s) to be trialled will be scoped at a workshop as the first milestone of this project.	1
MIT 7	Understanding drivers and barriers to mitigation uptake in small vessel bottom longline	1. To understand the drivers and barriers to uptake and implementation of best practice seabird bycatch mitigation by small vessel longline vessel operators. This project will apply a social science methodology to understand key drivers and barriers in achieving fleet-wide implementation of mitigation standards from a fishers' perspective.	1
MIT 8	Longline hauling mitigation devices	Follow up to MIT2018-02 (Hauling mitigation for small longline vessels). Further refine the most effective and operationally practical options to construct and implement for longline.	2

MIT 9	Suitability of lasers as a seabird mitigation option	1. To determine the extent of any animal welfare issues related to the use of lasers as a seabird mitigation device. There is use of, and fisher support for, the option of using lasers as a seabird bycatch mitigation device on some vessels. This project forms the first stage of assessing the potential effectiveness of lasers as a bycatch mitigation option by assessing the extent of potential damage that may be caused by seabird sight. This will be a lab-based study.	1
MIT 10	Light mitigation	Reccommendations from a previous CSP project (MIT2019-03) suggest further boat-based behavioural experiments should be conducted targeting seabird species known to be vulnerable to light impacts and timing experiments to incorporate a greater range of moon phases and weather. This is required to ascertain if a certain light treatement has a beneficial effect on reducing deck strikes/vessel impacts to the extent that it could be reccommended for wider trials within the operating fishing fleet. An increase of trial lighting should be used to better replicate light levels from fishing vessels. Automation of seabird detection would reduce the labour involved previously in detection and analysis of thermal imagery.	1
POP 1	Flesh-footed shearwater- additional proposed research	This project supplements current population monitoring to fill additional data gaps utilising cost-saving synergies. Satellite track juvenile FFSW for at least the full first year post-fledging, using new lightweight lower cost solar powered tags allow for the opportunity to improve our understanding of the at-sea range of this poorly understood cohort of birds.	2
POP 2	Black Petrel	This project delivers on priority monitoring and data gaps as per the CSP seabird plan. The project aims: 1. To monitor the key demographic parameters at the breeding colony of this threatened seabird to reduce uncertainty or bias in estimates of risk from commercial fishing. This continues long-term monitoring, consistent with POP2021-04. 2. To conduct at-sea capture of black petrels to determine proportions of banded birds and identify if current low juvenile survival rates are affected by any non-philopatric behaviour at the study colony. This builds on initial work planned for 2021/22 under POP2021-04, to build sufficient sample sizes for estimation of population size. 3. To update model estimates of key population demographic estimates and population size based on results from at-sea mark-recapture. Analysis of data collected under objectives 1 and 2. 4. To satellite track juvenile black petrels for at least the full first year post-fledging.	3
POP 3	Westland petrel -additional proposed research	This project supplements current population monitoring to fill additional data gaps utilising cost-saving synergies, with the following objectives: 1. To describe the foraging distribution from GLS devices deployed in 2021. 2. To describe the dive behaviour of Westland Petrels. This would involve deployment of TDRs and subsequent analysis.	1
POP 4	Gibson's albatross	This project delivers on priority monitoring and data gaps as per the CSP seabird plan. The project aims: 1. To monitor the key demographic parameters at the breeding colony of this threatened seabird to reduce uncertainty or bias in estimates of risk from commercial fishing. This continues long-term monitoring on Adams Island. 2. To estimate the population size at Adams Island. This builds on initial work planned for 2021/22 to trial methods that can be used for an island-wide census. 3. To update model estimates of key population demographic estimates. Analysis of data collected under objective 1 through development of population model.	3
POP 5	White-capped albatross	This project delivers on priority monitoring and data gaps as per the CSP seabird plan. The project aims: 1. To monitor the key demographic parameters at the breeding colony of this threatened seabird to reduce uncertainty or bias in estimates of risk from commercial fishing. This continues recent monitoring at Disappointment Island. 2. To assess breeding success at Disappointment Island. This builds on initial trials using lapse cameras, through deployment of nest monitoring cameras over two years and subsequent analysis of data collected.	3
POP 6	Northern Buller's albatross	This project delivers on priority monitoring and data gaps as per the CSP seabird plan. The project aims: 1. To describe the at-sea distribution based on GLS tags deployed in 2020/21. 2. To estimate breeding success from nest monitoring cameras deployed in 2020/21.	1

POP 7	Antipodean albatross	This project delivers on priority monitoring and data gaps as per the CSP seabird plan. The project aims: 1. To monitor the key demographic parameters at the breeding colony of this threatened seabird to reduce uncertainty or bias in estimates of risk from commercial fishing and measure the success of management interventions. This would involve continuation of routine population monitoring. 2. To estimate the total population size. This would involve a (multi-year) population wide census, based on methods to be trialled in 2021/22. 3. To describe the diet and any nutritional stress. This will be based on analysis of a range of samples.	3
POP 8	Northern royal albatross	This project delivers on priority monitoring and data gaps as per the CSP seabird plan. The project aims: 1. To describe the at-sea distribution based on GLS tags deployed in 2020/21. 2. To estimate breeding success from nest monitoring cameras deployed in 2020/21. 3. To satellite track a number of birds of particular interest at Taiaroa Head, to raise public awareness and better describe the at-sea distribution and fisheries overlap of this species.	2
POP 9	Light-mantled sooty albatross	This project supplements the priorities identified in the CSP seabird plan, for a species of interest related to potential international fishing bycatch. The project aims: 1. To track birds from key colonies to better understand potential international fisheries bycatch risk. 2. To estimate the population size and trend at Adams Island, and other key sites.	3
POP 10	Grey-headed albatross	This project supplements the priorities identified in the CSP seabird plan, for a species of interest related to potential international fishing bycatch. The project aims: 1. To track birds at Campbell Island to better understand potential international fisheries bycatch risk. 2. To estimate key demographic parameters through collection, and subsequent analysis of, resights of marked birds at Campbell Island.	2
POP 11	Otago and Foveaux shags	This project delivers on priority monitoring and data gaps as per the CSP seabird plan. The project aims to describe the foraging distribution, and overlap with fishing effort, for key colonies. This work would apply tracking and analysis methods developed for king shags and spotted shags in northern North Island and build on current findings from CSP 2021-07 Otago and Foveaux shag census.	3
POP 12	Spotted shag	This project delivers on priority monitoring and data gaps as per the CSP seabird plan. The project aims: 1. To estimate the East Coast South Island population size and trend. This would be a desk top assessment of existing data, with recommendations for any further data collection required to better understand the current status of the population. 2. To describe the foraging distribution, and overlap with fishing effort, for key colonies. This work would apply methods developed for King shags and spotted shags in northern North Island.	1
POP 13	White-chinned petrel	This project delivers on priority monitoring and data gaps as per the CSP seabird plan. The project aims: 1. To estimate the population size and trend at Antipodes Island. This would involve an island-wide survey, building on monitoring conducted in 2020-22, and comparison to historic data. 2. To describe the dive behaviour of White-chinned petrels. This would involve deployment of TDRs and subsequent analysis.	1
POP 14	Grey petrel	This project delivers on priority monitoring and data gaps as per the CSP seabird plan. The project aims: 1. To estimate the population size and trend at Antipodes Island. This would involve implementing the recommendations from POP 2. To describe the dive behaviour of grey petrels. This would involve deployment of TDRs and subsequent analysis.	2

POP 15	Hutton's shearwater	This project supplements the priorities identified in the CSP seabird plan, for a species of interest related to recreational fishing bycatch. The project aims: 1. To track birds to better understand bycatch risks including domestic recreational setnet and international fisheries. 2. To characterise dive behaviour using time-depth recorders, to better understand the range of potential risk from different fishing methods.	2
POP 16	Deep sea protected coral reproduction study	An examination of coral reproductive strategies from archived specimens in the NIWA Invertebrate Collection, primarily using histological approaches. This information is to be combined with other life history data to inform and improve estimates for productivity paramters for future Risk Assessment work. It is a multi-species project, using taxa identified in the pilot RA as high and medium risk and/or specimens identified in BCBC2020-01.	1
POP 17	Risk Assessment for Protected Corals	Follow on from 2014 pilot risk assessment (POP2013-05), and first attempt at a fuller risk assessment for corals. The current lack of a risk assessment is noted as the most needed and important gap in the coral MTRP. Depending on new data available and their adequacy to meet the method in the pilot (PSA / ERAEF), the same approach could be used (but more nuanced and detailed), or a fuller more quantitative approach (such as recent shark RAs). This would be multi-species / multi-coral groups, but will not cover all known protected corals (>300 sp) -instead focusing on a core subset representing the four major protected coral groups.	1
POP 18	DOC Coral Symposium 2022	CSP to host a symposium on the topic of corals in New Zealand, to progress ideas on how they might best be managed and protected. This will be achieved by presentations and discussion focused on: 1. Coral research and knowledge – achievements and gaps since the 2017 gaps workshop; 2. Identification of threats and approaches for mitigation; and 3. Hypothetical management scenarios and goals within the framework of new and upcoming policy and other workstreams (e.g., Biodiversity Strategy, MPA reform, bycatch 4-year workstreams, IUCN BBNJ work. MTRP, BRAG work streams). The symposium is not intended as a repeat of the 2017 gaps analysis workshop; although relevant research updates will be included, identified research gaps remain largely the same. Instead, the purpose of the symposium is to drive an active network of stakeholders and bring interested parties together for the first time in several years, and to provide them with government and industry contexts and contacts for ongoing improvement of management outcomes for protected corals. Example outcomes include a summary report of the symposium, including a themed synthesis of current research, identification of novel gaps, discussion outcomes on management scenarios, and identification (through discussions and break-out sessions) of next steps to plan coral research that improves coral protection, particularly within relevant policy frameworks.	1
POP 19	Auckland Islands New Zealand sea lions	To undertake a pup count on Enderby Island (Sandy Bay), Dundas Island and Figure of 8. To undertake tag resightings and daily counts of animals on the beach including live and dead pups to provide survivorship and interaction data for the demographic model.	3