



Meeting: Conservation Services Programme Technical Working Group
 Date: 28 May 2024
 Time: 9:40 am – 1.30 pm
 Place: Microsoft Teams Meeting
 Chair: Kris Ramm (Manager, Marine Bycatch and Threats team)

Attendees: Richard Wells (Resourcewise), Dave Goad (Vita Maris), Madie Davy, Te Puea Dempsey (Te Ohu Kaimoana), Charles Heaphy (Sealord), Tiffany Plencner, Graeme Taylor, Hannah Hendriks, Arawhetu Waipoua, Hollie McGovern, Kris Ramm, Jody Weir, Lyndsey Holland(DOC), Karli Thomas (DSCC), James Robertson, Mark Edwards (NZ Rock Lobster Industry Council), Sadie Mills, Amelia Connell, Jaret Bilewitch, Jason Hamill (NIWA), James Bell, Miriam Pierotti (VUW), Heather Benko (FNZ), Ben Steele-Mortimer (DWC SNZ), David Middleton (Pisces Research, for SNZ IC/DWC),

Presentations:

9:45 am	INT2022-05 Determining the resilience of Fiordland corals to fisheries impacts – progress update	James Bell
10:20 am	POP2021-06 Fur seal population estimate and bycatch analysis, Cook Strait – genetic analysis component	Bruce Robertson
11:15 am	INT2022-03 Identification, storage and genetics of cold-water coral bycatch specimens	NIWA
12:00 pm	MIT2023-07 Novel seabird bycatch mitigation for floated demersal longline fisheries	Vita Maris
12:45 pm	POP2022-08 White-capped albatross population research	Parker Conservation

1. INT2022-05 Determining the resilience of Fiordland corals to fisheries impacts

James Bell and Miriam Pierotti from VUW presented a progress report for year two of this project determining the resilience of Fiordland corals to fisheries impact

Discussion:

RW Is there any reason to suspect that the fiords sampled are not representative of those further south e.g. Chalky and Preservation?

JB – I haven't been to those fiords but hoping to get there at some point to survey. From discussion with people who have visited and previous work, Chalky and

Preservation do also support extensive black coral populations, although some of the overall communities look a bit different.

JR In terms of depth profile, are the fiords typically shallow at the inner and get deeper around the mouths?

JB It is variable, but the deepest parts in Doubtful are generally in the middle area.

JR Are depths from survey sites available?

JB Yes. All the surveys are done at standard depths, and we know where each location is.

JR When surveying around the mouth of fiords, is there any way to determine what that is looking like at the seafloor level?

JB Weather conditions make it difficult to tell, however we would expect populations down quite deep (at least 30m if not more) to be impacted by some of those big storms.

JR In terms of whether deep corals can replenish shallow water populations, what is driving the depletion?

JB It's not depletion as such, but rather how larvae move through the water column; studies suggest the potential for deeper populations to provide larvae during impacts on shallow water populations, such as marine heatwaves.

JBil During the surveys, was there any evidence of any colonies being reproductive in your surveys?

MP Yes during genetic sampling, we noticed some of the colonies had gametes inside.

JR How is the modelling work going to account for uncertainty around 'unhealthy corals'?

JB Model will likely record mortality events, rather than healthiness of coral. Mortality could occur over time, but most of those models account for recruitment processes and mortality processes, rather than slow death over long period of time. There is a lot of variability associated with black corals.

2. POP2021-06 Fur seal population estimate and bycatch analysis, Cook Strait

Bruce Robertson presented the genetic analysis component of this project.

Discussion:

JW Is there any additional data that could be collected from bycaught individuals i.e. diet or microbiome analysis?

BR Diet could be looked at through DNA methods or traditional gut content analysis. If data is easy to collect, then it would make sense for any future research projects.

BSM Gut content will only really show hoki as that is why the fur seals are around

the vessels.

DN Recall from 1990's there was a reasonable high percentage of observed bycaught females in the West Coast hoki fishery, what then would be the explanation for the high levels of males being caught in this fishery compared to the West Coast?

BR Not sure, but one explanation could be that females and males forage different areas at different times of year. It also could related to distance from the breeding colony.

RW My understanding is the bycatch in Tasmanian hoki fishery has similar male bias with males travelling significant distances to attend the fishery. It may be that the earlier "bias" to females was incorrect if done by observers.....

DM How confident are you on the genetic sexing outcome?

BR When determining a method, you have to rely on known sexed individuals, and we need more samples to validate method, however it works reasonably well though. Are images taken of bycatch that could be checked?

DM In terms of colony assignment, has this been interpreted in the context of other information such as tagging or resights? Is the conclusion that there is sufficient genetic interchange that a colony specific signature doesn't need to be developed, or that there is actually a lot of movement between colonies?

BR Tagging would be the logical method, however it is expensive and there needs to be buy in.

BSM It is standard practice for observers to photograph the genitalia of bycaught fur seals.

KR Issue around photographing genitalia is more around the frequency that it gets done.

DC Our experience with observer photos of pinnipeds is that some are great but a lot of blurry and genital area is not always clear. Validation then relies on weight of evidence (length of animal, photo and observer notes). Mistakes are regularly found.

SC Recall observers having reasonably high accuracy in their sex determination (when there were decent photos of the animals to sex, and an observer sex determination). However it is still useful to continue genetic sampling of any dead animal. While it's not logistically practical to bring back whole bodies, it is easy to take small tissue sample from every bycaught individual. Diet analysis probably won't be that useful, as gut content will be more reflective of what they've been eating immediately. There are some good studies around fatty acids and blubber isotypes, might be useful for potential work in future.

3. INT2022-03 Identification, storage and genetics of cold-water coral bycatch specimens (1 July 2022 – 30 June 2023)

Amelia Connell, Jaret Bilewich and Sadie Mills from NIWA presented the draft annual report for this project.

Discussion:

KT Is taxon of co-occurring coral bycatch specimens recorded i.e. which taxa are occurring together? Has any footage of coral bycatch come through from cameras on boats, if not is that a possibility for the future? And is there any guidance, or legal/logistical requirements in terms of whether an observer takes a photo or brings a specimen back?

SM Can get data on co-occurring taxa from reporting; the appendix to the report has tow information and species that co-occur. Notes on associated taxa are included in the NIWA database. Taxonomists also have experience in which species live on others.

AC Important to note that this reporting based purely on images and samples sent back by observers at sea, as opposed to the entire coral bycatch that are reported into MPI databases through commercial fishers. We haven't received anything from camera footage and this is not in scope of this project. Purely looking at photos and specimens from observers on commercial boats. While we request for observers to photograph or return samples for specimens that they are not confident with their IDs on, there is no legal requirement for photography or sample collection by observers.

LH DOC currently receives clips of cameras footage when there is a protected species interaction for verification, however as cameras are only on inshore fleets, and most coral bycatch occurring on deepwater vessels, there hasn't been much information on corals coming from the camera rollout. Previous guidelines for observers were for them to return something if they weren't sure what it was, however we have made it more explicit that we would like them to return a bit of everything that they come across. The number of samples being returned shows that that there is still some sort of barrier though.

KT Good that the guidelines are being adjusted towards more photographing / collection (given the 55% accuracy, and possibility of new taxa).

BSM What are the guidelines for observers to report to species level, or if not possible then reporting to higher levels. In terms of accuracy, this could alleviate accuracy issues if the guidelines are to report to a higher level.

LH The guidelines are to report the level they are confident at, which doesn't necessarily have to be species level. Some taxa are more readily distinguishable e.g. bubblegum coral, so it's easy to use a low taxonomic code. Reporting is a bit varied in terms of accuracy, that's why this project is super important to allow us to get better understanding of the observer data. Try to reiterate through the observer guide and training to just do best they can.

JB For a lot of protected gorgonian octocorals, there are no described species for a lot of the taxa returned, so observers nor experts could identify them to species level because there is no reference material.

PF How stable is coral taxonomy, and are there any recommendations that might take into account possible future changes in taxonomy, both in terms of taxonomic hierarchy and potential splits in species?

JB Historically, higher level taxonomy has been pretty stable since 1980s. The changes for octocorals is the first change in 40 years, and were mostly long overdue. A lot of things in those changes were long overdue. As far as future changes, the main focus in NZ needs to be description of some of these undescribed species, rather than moving things between groups.

DM How has the term 'specimen' has been applied, in particular is each image counted as a separate specimen, even if it is potentially multiple photos of the same sample?

AC A specimen is an individual, irrespective of the number of individuals within a photograph e.g. received 300+ images but had >2,000 specimens. Samples are physical samples that we receive, that can be more than one specimen. A photograph is a sample containing multiple specimens within that image.

SM One sample might have multiple specimens within it.

DM Is a specimen a piece or is it more specifically an individual?

SM Difficult to say when talking about colonial animals, but one colonial organism would be one specimen.

DT Ideally a sub-sample of the protected coral specimen photographed, or the whole specimen, is returned by the Observer. This will help improve accuracy and aid the experts with their identification(s). This is stated at training sessions, in revised guides.

DM Multiple pieces assumed to be same branching coral would be one sample; do you have any indication of multiple photos of same piece?

AC Yes it does happen. When going through photos and counting specimens, we count the initial photograph of the number of specimens, and then subsequent specimens will receive a zero count to avoid double counting.

KT Regarding the particularly large bubblegum coral that was reported, was a sample brought back, and if so was it aged? And could you tell if it was from a newly trawled or heavily trawled area?

AC Sample wasn't returned so unable to age it, and we don't know if it was from a newly trawled or heavily trawled area.

4. MIT2023-07 Novel seabird bycatch mitigation for floated demersal longline fisheries

Dave Goad presented the draft report for novel seabird bycatch mitigation for floated demersal longline fisheries.

Discussion:

RW Seems like of the better work done in this space and given the whole issue of "floated" demersal gear is globally widespread whilst "best practice" doesn't particularly recognise and consider it. This makes it potentially very valuable.

KR Supportive of any evidence that helps fishers to improve their practices in a pragmatic and vessel by vessel manner.

BSM Good presentation and successful project. Are there any recommendations on how to avoid tangling situations?

DG Not a common occurrence, have seen weights and ropes get tangled. By looking at it on a boat by boat basis, for the multi-float set ups which are a challenge, it is quite likely that they will have four floats between weights. The sink rate of the first two probably doesn't need to be changed, as they are reasonably close to a heavy weight, and therefore the risk is essentially halved. Also, to account for potential inaccuracies of TDR's, the max depth was 6m rather than 5 m, and we used 7 m ropes. So with perfect accuracy, 5 m rope would work.

BSM Once TDR or line reached 6 m, did it continue to sink at a similar rate down to 10 m? Had previous concerns that some of float lines might sink to certain depth e.g. 5 m, and then remain at 5 m for long period of time.

DG Yes it does sit at that depth, and then will only sink as fast as it would without it. Regulated 5 m is a reasonably achievable target and it is likely to hugely reduce risk.

JC What is influencing the issues observed after weights get down to over 200 m depth?

DG Was referring to the spacing between weights. Not noted in this presentation, but the weight spacing problem is rectified by adding weight on these modified floats.

5. POP2022-08 White-capped albatross population research

Kalinka Rexer Huber and Graham Parker presented the draft report for white-capped albatross population research on Disappointment Island.

Discussion:

PF Could the reason for anomaly in 2018 dataset be related to the large increase in the number of birds resighted from previous two years?

KRH There was a lot of banding occurring in initial years to try and get that study population up, so increase in number of banded birds resighted was simply because there were more banded birds to be resighted.

PF What is the reason for deciding that 2022 annual survival probabilities data in relation to years on either side has suddenly become not reportable?

KRH Due to change in we have been able to do with this dataset; this is the first year that we've been able to finally pull out estimates for each year individually.

PF Might be worth drawing attention to that in the report.

RW SEFRA refers to 'estimated deaths' rather than 'captures', just something to consider. Also note the Japanese SBT fleet east of Tasmania report high numbers of captures e.g. SPFRMO report 2018. So we do know a bit about what is happening in high seas, and it is significant (plus Southern Bullers).

RW Around calculations of survival, the birds are not strictly biennial breeders, but not annual breeders either, and depends on whether they choose to go back to South Africa or

stay in the NZ zone.

GP 63% of White-capped albatross that bred in the previous year, will breed in the subsequent year, and 80% of birds that didn't breed in a previous year will breed in the subsequent year.

RW Have looked at data from the Shy albatross and wondered how the calculation for adult survival that the Australians do over there is affected by the various fisheries, the Shy's have a similar breeding pattern to White-capped don't they?

GP Good working through some of this limited data, and talked extensively about the Shy's not being available to help inform us here. But will have to dig further in case more has happened recently.

KRH The actual survival estimate isn't affected by the biennial and semi-biennial nature of the White-capped albatross breeding, it's just how we've interpreted it. The estimates we get out of it and how we read into it with our understanding that they not necessarily coming back reliably to breed every single year.

RW How long do you need on the island to get everything done? Understand there are constraints but need to grow this work abit, considering we are collecting data on our biggest albatross population.

GP 10-day trip would be ideal, particularly in February. 2- 4 people would be fine. Allows for a lot of banding to happen.

KRH Build in weather contingency to those days too. Planning for longer trips has been attempted but weather often cuts that short.

GP Need to choose which birds to band very carefully, as they are nervous birds. This effects the pace of banding.

KRH In previous years, we put more focus into resighting than banding in order to accommodate for additional tasks, such as droning pilot and GLS deployment and retrieval.

GP A big loss that we couldn't do any banding this season, as not only would more birds have been banded, but could have skilled up a few more banders. There is the potential to leverage off the Auckland Island eradication work, to facilitate some of this work.

Any additional comments should be provided to csp@doc.govt.nz by 5pm, 12th June 2024.
Close of Meeting @ 1:30 pm