Department of Conservation
Te Papa Atawbai

Meeting:	Conservation Services Programme Technical Working Group
Date:	26 June 2025
Time:	9:30 am – 15.00 pm
Place:	Microsoft Teams Meeting
Chair:	Kris Ramm (Marine Bycatch and Threats Manager)

Attendees: Kris Ramm, Hollie McGovern, Lyndsey Holland, Johannes Fischer, Enrique Pardo, Mel Young, Graeme Elliot, Kath Walker, Kat Manno, Jody Weir, Katie Clemens-Seely, Maria Dussler, Anja McDonald, Stephen Pilkington, Lydia Uddstrom, Erin Hewetson (DOC), Peter Frost (Science Support), Greg Lydon, Karen Tunley, Vikki Ambrose, Greg Lydon, William Gibson (Fisheries NZ/MPI), Chelsea McGaw (Forest & Bird), Karli Thomas (Deep Sea Conservation Coalition), Jack Fenaughty (Sanford), Kareen Schnabel, Jaret Bilewitch, Diana Macpherson, Di Tracey, Jenny Beaumont, Emma Jones, Jason Hamill, Sam Davidson, Mel Underwood (NIWA), Juan Parada (Greenpeace Aotearoa), Sunkita Howard (Bye Bycatch Ltd), David Middleton (Pisces Research), Ben Steele-Mortimer, Aaron Irving (Seafood NZ), Jim Roberts (Anemone Consulting), Elisabeth Slooten (University of Otago)**,** Jack Fenaughty (Silvifish Resources), Rochelle Consantine (University of Auckland), Nathan McNally (PF2050), Gaia Dell'Ariccia (Auckland Council), Jingjing Zhang (Plant & Food Research), Matt Rayner (Auckland Museum)

Apologies: Barry Weeber (ECO)

Presentations:

9:40 am	INT2024-04 Exploring impacts and recovery potential of protected deep-sea stony corals, utilising Remotely Operated Vehicle capability on RV Sonne in the New Zealand region	NIWA
10:20 am	POP2024-02 Improving knowledge on coral life history traits: assessing reproductive capacity to infer productivity, vulnerability and resilience of protected deep-sea corals in the New Zealand region	NIWA
11:30 am	INT2022-03 Identification, storage, and genetics of cold-water coral bycatch specimens	NIWA
12:15 pm	POP2023-05 Auckland Islands New Zealand sea lions	DOC
13:30 pm	POP2022-08 Auckland Islands seabird research	DOC

14:15 pm	INT2024-06 Interaction of spotted shags with northern North Island set net fisheries	Plant & Food Research

1. **INT2024-04 Exploring impacts and recovery potential of protected deep-sea stony corals, utilising Remotely Operated Vehicle capability on RV Sonne in the New Zealand region**

Kareen Schnabel (NIWA) presented the preliminary observations and summary of the RV *Sonne* voyage SO309, 16 January – 15 February 2025.

Discussion:

EP Will this data be accessible? It would be great to integrate into the wider data held by DOC, MPI and NIWA etc, to use when doing things like spatial analysis or habitat classification.

> **KS** The PANGAEA dataset for the SO309 voyage track can be found here: Freiwald, A (2025): Master track of SONNE cruise SO309 in 1 sec resolution (zipped, 113 MB). NIWA can also communicate with the German team to request data.

DM Does this current project current project include any analysis, or inclusion of/comparison with previous recovery surveys?

> **LH** This project focussed on data collection and a CSP report with non-quantitative preliminary commentary; the 2025/26 CSP project will be more quantitative and focus on recruitment dynamics and recovery rates.

2. **POP2024-02 Improving knowledge on coral life history traits: assessing reproductive capacity to infer productivity, vulnerability and resilience of protected deep-sea corals in the New Zealand region**

Jenny Beaumont (NIWA) presented the first-year progress report on assessing reproductive capacity to infer productivity, vulnerability and resilience of protected deep-sea corals in the New Zealand region.

Discussion:

PF Was there any indication that the corals which died in captivity had spawned?

> **JBeau** Sometimes corals that are stressed might do a last minute release of gametes but we did not see evidence of that. We took histology samples at sea, so it will be interesting to see what reproductive stage the corals were at when they were collected.

PF That might suggest that part of a coral's life strategy is to live through time of stress and hope things get better.

JBeau Some species are known to release gametes under stress, but only if they are mature gametes. Some species we collected were reproductively mature at the time of collection. It is within the time period when we could expect to have mature oocytes in polyps so it is interesting that we haven't seen that.

BSM Regarding the corals that have died, was there anything different about the collection and storage process compared to last time?

JBeau Yes we previously held *Solenosmilia variabilis* and *Goniocorella dumosa* in aquaria and both species are still looking good. Corals brought back from the Chatham Rise were all treated in the same way. There were a couple of specimens that were exposed to air on the way up, but it's not just those ones that have fallen over. Likely have variability in species to disturbance and stress. Previous specimens have been collected in stressful circumstances and have been fine (e.g. brought up in the net), whereas this voyage the specimens were collected in water.

BSM What is the survival rate of past sample collections?

JBeau Reasonable for those species. Looking at species collected before are the ones that survived disturbance this time, so maybe we got lucky in choosing robust species to collect. It is difficult to know what is causing demise of this species.

JBil Did you experiment with flow rates, as some species may have particular flow rate requirements?

JBeau We tried to keep flow rates pretty steady. *E. rostrata* colonies started dying off pretty quickly - it seems the polyps on the top died off quicker, but not sure what that means. Flow will be varied across the tank. It's possible that occasional light in the lab has been bothering the corals. We have treated them very carefully but there would still be some stress caused during the collection process.

EH What are the expected differences in recovery potential between the two reproduction modes?

JBeau Brooders generally release a smaller number of larvae which settle closer to the parent, so don't drift long distance. Broadcast spawners have a greater potential to release gametes that will disperse further. Hypothetically, the more and farther that gametes that are released, the higher connectivity between populations will be and they would have better recovery potential.

3. INT2022-03 Identification, storage, and genetics of cold-water coral bycatch specimens

Diana Macpherson and Jaret Bilewitch (NIWA) presented the draft annual report for this project.

Discussion:

DM Is there any indication that observer ID accuracy is improving? What are the lessons learned for observer identification and any sense for next steps to improve observer coding? It would be useful to get an understanding for how many observer identification records go into COD but don't have an associated specimen or photo available? What percentage are able to be ID'ed by an expert?

> **DMac** Think 50% accuracy is about normal from previous years. Observers are encouraged to try and ID to order level for some species, then go up a level if they're not sure. . Hands on refresher training is helpful to engage with observers. If we don't get an observer image or specimen, then that won't be a verified ID. Expert IDs are entered into COD, so something for end users be aware of.
>
> **LH** It is important to keep training current. There are some new guides in place, with more codes for reporting. Accuracy rates are generally reported so we can see changes through time. There is a time delay from the capture event and reporting to the specimens being verified at NIWA; the large coral captures CSP project enabled us to work with RDM to change the thresholds for reporting large captures so unusual events are flagged sooner without such a big time delay. Observers are still required to give us a first handle on what coral is being bycaught, which is something cameras cannot do.

KT Public access point of view is the lack of difference between DOC CSP reporting and fisher-reporting highlighting the importance of observers. Secondly, when data accessed under OIA, the absence of a unique identifier number makes it difficult to link images with corresponding data. Thirdly, what is the potential for non-biological components in sampling, e.g. FNZ mentioned that the 6-tonne bycatch event may have been made up of up to 50% mud. Is there a data entry point to indicate if a particular trawl was conducted on a seamount or other underwater feature?

> **LH** Mud is not normally a huge part of coral bycatch weight reported, for one thing stony corals don't grow on mud so that's highly unlikely. For large coral captures, there might have been large amounts of coral rubble in there, which fishers are legally required to report anyway. The large capture CSP project will lower the trigger weight to verify whether future large catches are feasible. In

terms of having more targeted info on where the captures are from, that might be an offline conversation.

DMac It is difficult to tell what actual weight of corals are in large captures.

LH There have been previous conversations that green weight may not be the best metric to ascertain impact. However understanding what weight represents is important, there is also the issue of unknown catchability, meaning that what you get on the deck of a vessel is likely substantially lower than the damage caused on the seabed.

KR Will pass data suggestions on to MPI data team.

BSM For larger corals captures on deck it is not practical to weigh every bit of coral, so the observer estimates what is there and then it is released from deck.

ES Extrapolating from observed bycatch to total bycatch in whole fishery would be important for people to know. Any changes in terms of location of fishing that may be important for potential increase in bycatch.

KR That is out of scope of this particular piece of work, can have offline conversation.

BSM What is the current observer protocol around collecting samples at sea?

DMac Observers are encouraged when they can to take a subsample or keep specimen of any coral bycatch they see. Not species specific, if they think it's a coral then they should be bringing the specimen back and/or taking a photo.

LH: the new ID guide and observer guidelines have made it clearer to observers that a small physical subsample and photos of any and each type of coral in a given fishing event need to be taken; as there's a data delay in this project it might take a while to see more samples coming back as the numbers are relatively low.

4. POP2023-05 Auckland Islands New Zealand sea lions

Kat Manno (DOC) presented on the 2024-25 New Zealand sea lion pup count at the Auckland Islands.

Discussion:

DM Noting the difference between mark recapture and direct count estimates and the use of standard error instead of a confidence interval, the direct count estimate is significantly higher than the mark-recapture estimate, likely outside the confidence interval. Looking at the individual counts, all direct count estimates are higher than the mark-recapture estimates. While not always possible to do an accurate and full direct count, differences like this make you wonder what's going on with mark-recapture and

whether you have been able to distribute caps at random or do counts at random. This difference needs looking into.

> **KM:** Noted the difference; we decided to go with mark-recapture with standard error to keep dataset consistent with what was done in the past. In the past, when direct counts have had higher estimates than mark recapture, mark-recapture has been chosen as the most accurate, following expert advice. It can be very difficult to have confidence in counts when the pups are piled up and you are being chased by males. Drone imagery collected this year may help us understand which of these counts are more accurate.
>
> **JR:** Recall previously we had direct counts but not mark-recapture, based on previous seasons we inflated direct counts up by about 5% based on comparison of direct counts in past years. Mark-recapture is typically higher than direct count because you're going to miss some pups in direct count, mark-recapture should allow you to account for this. I wonder in what scenarios you might double-count pups, or is there a method in place to prevent this happening?
>
> **KM:** Often mark recapture is larger than direct counts, but in some years this is reversed, and mark-recapture is taken as more accurate. Possibly we can look further into these data.
>
> **LU:** This year there weren't so many deep pup piles but a lot of pups would stampede and it was hard to track which ones you had counted and which ran and moved to a different pile, so some may have been double-counted in the direct counts.
>
> **JR:** Typically, we'd like to use the mark-recapture estimate, agree this is the better way to do it. The difference in counts from these methods is significant this year and should be looked at.
>
> **KM:** Will hopefully understand more from the drone footage.
>
> **DM:** Drone footage may well help particularly in terms of assessing the difference. I advocate for collecting more information, comments about difficulty in counting pups because they're moving is really important in terms of interpreting this information. If the people on the island can track their positions and counts can be georeferenced in some way, then this info can provide a much richer information base for disentangling these two counts. A lot of this is in future data collection and collecting richer data at the time.
>
> **KM:** We are keen to consider improvements to the methods for next year.

RC: Did you do counts of pups where the drone imagery is taken?

> **KM:** Yes, pups on Dundas Island were counted using two methods and drone images taken of the same area three days later.

RC: Would be interesting to see if you could drone while counting to know the effect of pups moving around, this could be useful but given how long standard methods have been going for, anything new we need to be confident it is 'like for like'.

RC: Why do you not do counts of all the age/sex classes at all locations?

KM: A one-point count of all age/sex classes doesn't tell you much because a lot of the animals are away foraging offshore, the value is doing this once a day throughout the peak of the breeding season. Haven't been able to stay on Dundas Island for long periods recently, need the method that gives the most information over a short time.

RC: I think this is one of the challenges, seems like everyone is operating on a shoestring and this is mostly about accessibility and safety. Just like to reiterate whether DOC can prioritise being able to do proper work in this space, and being wary of bird flu, without knowing a lot because we haven't been able to do the necessary work.

KR: This is a focal point of ours, building capability in the area and we are seeing momentum in this space.

BSM: Were there any recommendations coming out from this around the continued rollout of ivermectin to the wider colonies?

KM: We are thinking the next step may be to dose male pups at Enderby Island. We can't just jump straight into dosing pups with ivermectin at all sites with the infrastructure and access issues, so this is a multi-year aim.

LU: Dundas is the biggest colony and might be the place you see the biggest impact but there are access and infrastructure issues. For now, we're keen to train people on the skills to be able to handle animals and get treatment administered safely and do necropsies/longer follow up to really understand the impact it is having. This is front of mind, but a future thing.

KM: We are planning a side project as well looking at the disturbance effects at the colony from the ivermectin treatment which is additional information to help understand effects.

JF: Is the Ivermectin dosing an internal or external dose?

KM: This is an injection.

JF: There are also external methods of dosing, which work on sheep, not sure how they would work on sealions though.

KM: There are external methods, but we chose injection over topical.

LU: Injection is a more controlled method, needed to identify the animals and handle them to microchip and put caps on so can't just walk past and add the dose. Injection ensures they have a proper dose.

KM: Also need to dose them at seven days of age, need to target individual animals to get the timing right for this treatment.

LU: Also wanting to minimise our impact on the environment by giving an appropriate dose to minimise the amount of ivermectin entering the environment.

5. POP2022-08 Auckland Islands seabird research

Graeme Elliott (DOC) presented on the 2024-25 drone-based population estimate, demography and at-sea distribution of Gibson's wandering albatross on Adams Island.

Discussion:

WG: In terms of fisheries interactions, it might be worth reviewing the most recent ERSWG through CCSBT that shows results for wandering and royal albatross species, which were well received by the group, and those species were considered at high risk, especially in the Tasman Sea. Gibson's came out as the most at-risk species by those CCSBT nations.

PF: It seems that southern royals occupy ridge or more exposed positions, potentially those positions were selected as it is easier for them to take off?

KW: It might be more to do with the fact they like being together, those three places have always been where they are reported from, and they always look quite uneasy between masses of Gibson's.

GE: There are other ridges on the island that look quite similar but don't have southern royals.

PF: Of the birds that were sitting on nests that did not have eggs, are they older birds skipping a season, or birds that had nests which failed earlier and still occupying the nest site?

KW: The lower 'has-egg' rate in 2024 was related to lower productivity and birds that turned up failed earlier. In 2025, with a more successful start to the season there was a higher 'has-egg' ratio, which might be something to do with it. I don't think it's that they're young or failed breeders, as they were mostly pre- breeding birds.

GE: If done later in the season there would be more of those pre-breeding birds. Most of them are at the younger end of the adult spectrum.

KW: There are also a lot of males, an uneven sex ratio, which would be more breeders but are not.

PF: Opportunity to observe birds on the island that are sitting or standing on the island without an egg.

KW: With the Wanderers on Antipodes and Gibsons there are so many more males, spending most of their time there looking like breeders.

GE: There's also pairs that don't have eggs for many years

BSM: Interested in the change in distribution shown earlier, birds seem to be moving further to the west. Wondering if anyone has heard of any other reports of Gibson's being further west than they have been in the past – similar situation with southern Buller's on the east coast of Australia noting an increase in Buller's observations here. Wondering if this is similar with Gibson's?

GE: Not confident that it is a true change, there were birds going in this direction during the first survey and now have a much larger sample size. Throughout the years, transmitters have also stayed on a lot longer. Almost need an independent dataset of people watching birds at sea.

JF: Now that you're in the unique position to have a complete distribution of the birds, if you were to pick your study sites again, would you put them in the same spot?

GE: Ideally you would stick them in the denser stuff, but maybe this is not so representative. The denser areas are an additional hours walk from the hut which impacts logistics. There is an argument made for bigger sample sizes in closer distance.

KW: We have started doing droning for the low-density study site in the northern slope because it is really hard to count on foot. The low density one was put in because study showed that if population was declining, they'd come from peripheral areas.

JF: The fly-squares border the really high-density spot, could this be extended further to get a bigger proportion of the population?

GE: Could make the fly square a bit bigger, worth thinking about.

JF: The figure that you arrived at – does that include the southern royals?

GE: It includes southern royals.

6. INT2024-06 Interaction of spotted shags with northern North Island set net fisheries

Matt Rayner (Auckland Museum) and Jinjing Zhang (Plant & Food Research) presented on the interaction of spotted shags with northern North Island set net fisheries.

Discussion:

WG: How does the number of tracked birds influence the results, and will their main tracking period have a big influence on the overlap metrics being calculated? Did you check with RDM about the cutoff of 1km net length in the data being groomed? Some of the stuff close to land could have been groomed out when it was over a headland but in reality followed the depth contour. When recommending observer coverage, would need a characterisation of targeted vessels as putting an observer on small set net vessels is almost impossible

> **JZ:** Regarding data coverage, ideally we would like to track a larger sample size over a longer period of time, but it is such a small population. There is still one bird that we are tracking and collecting data from, it's a pity that tracking/diving data doesn't cover the whole year and we are missing some months. We don't have June/July but with known ecology of the birds we know they probably spend the winter around Waiheke Island using the deepwater channel so is a time there might not be many fisheries interactions anyways. We have quite good coverage over the summer period where they are using these areas.
>
> Regarding the screening of fisheries data, the 1km was from regulations that for commercial set net fishers, multiple nets cannot exceed 1km in length. It had been pointed out that this might be too strict as sometimes fishers record several events sequentially and might get a length greater than 1km. This is a more conservative estimation of overlap in interactions, re-ran the analysis with greater than 1km but still found that 28% of data was removed because a significant part of them were on land.
>
> Good point on identifying targeted vessels, for set net fishery it would be hard to get observers but if bycatch is happening in a specific area maybe we should be paying attention here.

DM: You had some plots of the annual counted breeding pairs that aren't in the main report. I was interested to know if this is additional information is, or will be, made available.

> **MR:** Yes, this is also cited in the Auckland Council regional assessment. Just trying to build the dataset as this is an ongoing census from 2015.

JF: Regarding the data grooming, Jingjing highlighted that she wasn't sure that 1km was the right cutoff, what would be the correct cutoff?

> **DM:** Reporting regulations have changed for set netters with ERS, essentially if you move 1 nautical mile from the starting point of a net or any net you have to start a new record. All documented on the MPI website. Essentially a cluster

record rather than an individual net, don't necessarily have to be an individual net. You can't really answer this without actually characterising the data and understanding what's in there. Looking at the distribution and understanding why they are on land, what causes positions to be reported on land, is it errors in the timing or GPS or some misinterpretation? I wouldn't necessarily put a 1km threshold on it based on regulations, need to look at characteristics of the data first.

JF: Perhaps some more work needed on the grooming.

PL: Amazing research, it would be really good if we could have similar research done on Banks Peninsula extending from this work. Extensive survey research has been done for some time now and documented a catastrophic decline on Banks Peninsula. Potentially dealing with an order of magnitude reduction.

MR: I have talked to those involved, people interested in this species are all hearing anecdotal reports like this and there is definitely need for wider work such as this. The technologies and abilities to study this stuff are there.

PL: Also quite concerned to hear about trawl bycatch, wondering whether birds are really desperate for food so coming into trawlers as in one event there was 67 birds caught.

JZ: They are communal foragers, and from the interactive analysis, even with only 14 birds and not all tracked at the same time we saw three birds chasing one vessel on one occasion. Some previous studies show that spotted shags forage in groups, so if we can get more data from Christchurch with GPS tracking or similar we could extend this study.

Any additional comments should be provided to csp@doc.govt.nz by 5pm, 11th July 2025. Close of Meeting @ 15:01 pm