



Meeting: Conservation Services Programme Technical Working Group

Date: 16 March 2017

Time: 9:00 am – 15:30 pm

Place: G.01 Holloway room, Conservation House, 18-32 Manners Street

Chair: Ian Angus & Graeme Taylor

Attendance: Jim Roberts, Jingjing Zhang, Malcolm Francis (NIWA), Karen Baird (Forest & Bird), Nathan Walker, Rich Ford (MPI), Richard Wells (DWG, FINZ), Chris Gaskin, Megan Friesen (Northern NZ Seabird Trust), Mike Bell (WMIL), Igor Debski, Ian Angus, Katie Clemens-Seely, Kris Ramm, Freya Hjørvarsdóttir, Graeme Taylor, Monique Holmes (DOC), Christopher Robertson, Peter Frost

INT2016-04: Indirect effects of commercial fishing on Buller's shearwater and red-billed gulls

Procellariiformes associating with shoaling fish schools – northern New Zealand

- **RW** Are the sooty shearwaters seasonal?
 - **CG** Yes they are, and they seem to travel a specific route.
- **RW** What sort of term do you think is needed to respond to the recommendations?
 - **GC** We need some kind of a spacing between the samplings in order to establish a decent baseline. There is no clear answer and it will be dependent on species
 - **RW** It will be important to have a well outlined proposal for research methods and research species as this work will have to continue over several years to get proper results
- **FH** Has there been any previous dietary research that could be used to establish a baseline to compare the current diet to?
 - **CG** No not detailed ones, mainly opportunistic research that just describes the prey species seen, not the proportions of each prey species in the diet.
 - **PF** The problem with the diet information that exists is that it is historic. We need to persist in monitoring these species to get an accurate picture of the current situation.
- **KB** There are key things that can be done in the short term. For example, what contribution to the diet is coming from those fish school associations and what the birds are eating in these fish schools. There must be some isotope samples that can be used as a baseline for dietary comparisons.
- **PF** Also recommend looking into the nutritional value of the prey species.

Discussion about variability in breeding success of birds in that area, and that the estimates aren't very detailed.

Population status and trends of selected seabirds in northern New Zealand

- **RW** Are all the totals comparable?
 - **PF** Yes, because they are all aerial photographs
- **RW** Were the photographs all taken at the same time?
 - **PF** Mine were taken in December, but I believe some of the other photographs

were taken in October/November. They were all taken during the breeding season, during incubation, and at an appropriate time to minimise the number of loafers in the colony.

- **RW** Do we know how much these birds attend the breeding site, for example, are they like some albatross species where loafers can tend to hang around the colonies at certain times of the day?
 - **PF** Several papers have been written on this, but I haven't had the time to properly read over them, but can look into them.
- **GT** The main thing to take from these is that the numbers are showing an overall decrease since the 1980s
 - **PF** Other gannet populations in the world have shown increases and then crashed. The increases tend to accompany the growth of fisheries, but the population crash hasn't been attributed to anything specific, could potentially be caused by all the "junk food" they've been eating.
- **RW** South Island – some data has been collected for the past years but hasn't been analysed. It seems like there is a mismatch between colonies. In a good year for the Otago colony, the colony in Kaikoura has a bad year, and then the other way around.
 - **PF** That was one of the questions in the red-billed gull research to begin with, if there was a mismatch between the colonies.
- **GT** Are there any changes in numbers from the offshore colonies to inland colonies and colonies closer to shore? Might it be possible that the birds have switched to a terrestrial diet from pelagic diet because of reduced prey availability?
 - **CG** Red-billed gulls are definitely around in great numbers in the gulf over winter, but during the breeding season they don't seem to be around as much.

Fisheries relevant to Buller's shearwater and red-billed gull prey availability in North Eastern North Island

- **RW** The key is to look at the effort as well as catch, otherwise misleading conclusions could be drawn. If the catch is well below the TACC, prior to jumping to conclusions, it is wise to look at the level of fishing effort, as it could simply be because the fishing effort is low, as is the case for pilchard. Another possible explanation could be for species that are short-lived or highly migratory, and potentially just not around in the environment
 - **FH** Agree. Important to be careful about that as well as using effort for target species could be misleading for species that are caught as bycatch.
 - **ID** potentially can also plot CPUE to address some of this.
- **PF** another factor to look at could be change in size of fish over time as this can be an indicator of population change

General discussion for INT2016-04

- **KB** What we could progress through CSP are things such as the diet of Buller's shearwater, and how much of those associations contributed to the breeding success, this could be done over a few years. Outside of the CSP scope, it might be important to set up better ways of managing all of this information, such as a national database.
 - **IA** We should focus this meeting on suggestions that fall under the scope of CSP
- **ID** Presented the objectives for the suggested 2017-18 indirect seabird project
 - **GT** Would be very useful to get the actual makeup of those fish schools, and relating that back to what the birds are eating in the colonies. Make the connection between what's in the boil ups and what's in the diet

Non-CSP Presentation: Characterisation of seabird deck strikes

Discussion about the term "deck strike" and how it may be misleading and an inaccurate term.

Deck strikes implies a sudden impact that might cause an injury, but often seabirds land on boats themselves, and can leave without any assistance. It was suggested that there should be a separate code for 'deck landings' and 'deck strikes'. Suggestions were sought by the CSP team.

- **KB** Any data on if the deck strikes were happening over night or day?
 - **MH** Yes they did record the time, but that wasn't taken into account in the analyses as the nature of the data made it difficult to accurately determine differences.
 - **GT** Could be that observers are recording animals that are landing at night the morning after, as their shift starts.
 - **ID** That is one of the limitations of the data, you can often link a specific fishing event to a time of day, but can't always be sure of when the bird landed on the boat
- **PF** How is this information recorded? Is it compulsory? Is there a specific form that they need to fill out for these cases?
 - **ID** This work used already existing data, collected by government observers, but those are the type of recommendations that have been coming out of this piece of work

Discussion about the nature of deck lighting and whether it can easily be turned off. **RW** mentioned that there used to be old codes of practice that specified that lights were to be turned off at set times for marine mammals and seabirds, but as that lowered the lifetime of the deck lights, that was never adhered to, and so the codes of practice were abolished.

- **KB** One of the mitigation methods that has been talked about is light colour, where it was suggested that some colours are not as attractive to birds as others. Could they be used? And could fishermen work with different light colours?
 - **RW** If there is a specific colour that has less attraction for birds and it's efficient enough for fishermen to work with, I don't see why we couldn't use it.

Further discussion about the strength and colour of lights that are used on fishing vessels or could potentially be used.

- **RW** Is this information in the dragonfly database?
 - **ID** it is databased by Dragonfly but they don't apply the same handling of the data as we did here. That's why the nature of the characterisation work that was done was limited, as there was so much data that needed to be groomed. The good thing is that now we have better dataset.

INT2015-04: Black petrel and flesh-footed shearwater foraging behaviour around fishing vessels

- **JR** When where the birds diving deeper?
 - **MF** During the breeding season
- **PF** Do the flesh-footed shearwaters make more prolonged dives?
 - **MF** They did more dives, but also interacted more with the trial. The model showed that they were equally likely to go to 10 m depth as black petrels.
- **GT** were dive lengths timed?
 - **MF** No, they were not, only quantified by depth
- **RW** there must be a physiological limit to their diving ability and an exponential trade-off of energy

Discussion around the diurnal effect on diving depths.

- **NW** how did the experiment deal with delivery of baits to depth?
- **MF** This was considered but a difficult issue to overcome

Discussion around the effects of different cues to trigger behaviour, olfactory, audible and visual

- **KB** ACAP best practice for SLL is night setting, would be useful to see if the night setting is a useful mitigation method for these species.
 - **MF** We thought of so many potential research questions for mitigation, including night setting and camouflaging baits
- **GT** Would be interesting to look into artificial bait and see what reactions the birds would show, and at which point their other senses (i.e. smell) would kick in.
- **RW** I don't see what important new information this is bringing. Would have wanted to see something about the blue-eyed squid bait that fishermen use as seabird mitigation. What exactly is the proposition? Taking the trials to a commercial vessel? And what are the possible outcomes of that.
- **CG** Moving to a commercial vessel would also be a logical next stage

Discussion about the use of side setting and bird bafflers as an alternative.

POP2016-01: Seabird population research: Chatham Islands 2016-17

- **GT** If a single shag pair was on a cliff, would that be considered as a colony?
 - **MB** Yes, we define it a colony if there is about 50 m distance between the pairs.
- **RF** When you do multiple flights, do you take the largest number seen as the estimate?
 - **MB** No, we will mark the nests and combine the number of nests between flights.
- **ID** Did you try counting any from land to see how it compares to the aerial counts?
 - **MB** Yes I have, it's very similar.
- **PF** Could you look up setting a long-term monitoring of a few of the most active colonies to reduce cost?
 - **MB** It's not going to be a huge difference in cost as the flights over all of the colonies is only about 1.5 hours. Also, there is a bit of a movement between the colonies, so it's important to get all of them.
- **GT** Is it easy to see the nests from the aerial survey? Are there any hidden nests?
 - **MB** Very easy to see the nests as they are all in the open
- **RW** Expressed concern over the CI shag population trend slide as it could be misleading without further description.
 - **Noted.** Slide will be removed
- **NW** Have breeding locations spread out or moved over time?
 - **MB** There is some movement between colonies, but most sites seem to have been there for quite a while.
- **CR** I think these lows in the counts are coming from the years that we counted them earlier than normally. I believe that if the counts were done at the same time every year, we wouldn't see as much variability.
 - **MB** I agree. However, there is also a change to the Pyramid as fur seal numbers are much higher and they seem to be pushing albatrosses of their nests
- **GT** When is the optimal time to do the count if you are looking at the number of birds on nests?
 - **MB** About the same time as they are being done now
- **ID** When you map out all these nests, are you able to translate that quite accurately to a map so you can see the next time you go to the island if these areas are being taken up by fur seals?
 - **MB** It would be a very minimal change that would be hard to record between years.

- ID Could be possible to only look at the lower part of the albatross colony and monitor if the edge of the colony is moving up because of fur seals

Discussion about the importance of having people that are experienced with the island doing the survey and how the biggest part of getting a good estimate is to physically mark every nest, which will reduce the effect of having researchers that are less experienced with the island.

- GT Did you have any assessment done on how many you might have missed by spray painting? Would be useful to give a scale
 - MB No we didn't. Agree it would be useful.
- ID Any thoughts about how the growing vegetation might influence the ability to conduct future aerial surveys?
 - MB Aerial photographer must be very careful to have the right angle when taking the photos because it's going to be easier to miss nests due to the increase in vegetation on the island.

Discussion about how populations of bi-annual breeders can show high productivity fluctuations between years.

- ID Would be useful to take together the optimal demographic survey times for the species at the Chatham Islands, because the main part will be getting to the islands.
 - CR At the end of the guard stage in April would be a good option. Could compare the productivity between years.
 - ID Could be possible to use satellite images over that time to compare differences

Discussion about feedback to the island owners and the public involved and the high importance of that to keep people interested in the research.

- RW Did we not get any mark-recapture of the royal albatross this year?
 - MB We did get some, about 310 different individuals
- KB Wasn't there was a significant capture of royal albatross recorded off South America two years ago?
 - ID Quite a lot of captures recorded off Paraguay and S-America

INT2016-03: Post release of white-pointer sharks in New Zealand setnet fisheries

- PF There are certain areas where there is a lot of observer records but none from the fishermen
 - MF Some observer data might have some misidentifications.
- RW Before white-pointer sharks became a protected species (2007), the catches of the sharks might have shown up in the catch landing data instead of the NFBC data
- RW Who puts the net height line in the book, the observers or the fishermen? There are two ways of measuring height of the net, relaxed or straight
 - MF Good question. I'm not sure who is reporting on it, maybe it's not consistent.
 - KR We will need to look into this
 - RW I will follow up with MPI
- GT How long is a typical net?
 - MF Maybe a kilometre each. Much shorter in the butterfish fishery though.
- KB Do fishermen have ways to avoid catching them? Any areas where they have to avoid them? And are the boats that are catching the sharks also catching other protected species?

- MF Not sure.
- KR We have some data showing that the boats catching sharks are also catching birds and mammals

POP2016-03: Updated basking shark bycatch review

Discussion on if basking sharks are concentrating around areas that have a lot of plankton activity and/or fish spawning areas.

- PF Is there a seasonality for the abundance of basking sharks?
 - MF Could be, we just know very little about basking sharks.
- RW Do we have an idea of the sex ratio in NZ waters?
 - MF east coast and south coast are very male biased, west coast is 50/50
- RW Might be important to consider writing instructions for observers to hold on to basking sharks if they are under 2.5 metres, in order to analyse them to increase current knowledge.