



Department of
Conservation
Te Papa Atawhai

Meeting: Conservation Services Programme Technical Working Group
Date: 27 May 2021
Time: 10:00 am – 2:30 pm
Place: MS Teams
Chair: Ian Angus (ph: 027 7048369; email: iangus@doc.govt.nz)

Attendance: David Middleton (Pisces Research Ltd), Dave Goad (Vita Maris), Graham Parker (Parker Conservation), Oliver Wilson, Rosa Edwards (FINZ), Heather Benko, Ben Steele-Mortimer, Charity Puloka, Greg Lydon, Chris Dick, Dominic Vallieres, John Willmer (FNZ), Gaia Dell'Aricea (Auckland Council), Jesse Rihia (Te Ohu Kaimoana), Janice Molloy (SSST), John Cleal (DWG), Michael Donoghue (Te Tiaki Moana Associates), Chris Gaskin (NNZST), Emma Jones (NIWA), Mike Percy, Mike Hall, Tiffany Plencner, Ian Angus, Igor Debski, Ian Angus, Karen Middlemiss, Lyndsey Holland, Georgia Hardieboys (DOC)

Apologies: Peter Frost

CSP TWG presentations:

1. **MIT2018-03: Setting mitigation for small longline vessels – Fisheries Inshore NZ, and**
2. **MIT2018-03: Setting mitigation – time-depth recorder - Vita Maris**

David Middleton (Fisheries Inshore/Pisces Research) presented on the two year project he has been working on with Oliver Wilson and Brianna King. The project objective was to develop an adaptive mitigation tool for line setting sink rates for small vessel surface (SLL) and bottom longline (BLL) vessels.

David's presentation was followed up with a corresponding presentation by Dave Goad (Vita Maris), in which Dave took the group through four datasets he collected as a part of a project to compare sink rate profiles of Zebra Tech wet tags and bottle tests against CEFAS and Star Oddi TDRs.

Discussion

OW: What is the cost difference between units? How much are CEFAS and Starr oddi tags?

DG: Suggest I include this in the final report. I would not want to put a price on it here and now, as I would likely be wrong. It is still a necessary risk to clip these tags on the lines even though they cost. If you do not, you will not get the valuable data.

ID: I will look up the cost and get back to you. The CEFAS tags will definitely be the most expensive.

JM: Can the sampling frequency of wet tags be increased?

DG: Yes it is possible. The Moana tags can be, and are a good example of this.

DM: I am not sure why you would want to increase sampling frequency but there is an option to make them activate sooner. What the Moana sensors do is monitor the surface pressure so they are able to have a smaller differential. It appears those differences could be backported in to the wet tag

firm ware, so we could end up with a robust device that activates faster as it enters the water. I am not sure whether measurements every 5 seconds is necessarily useful. The greater the sampling frequency is the more the sampling sensor captures noise.

DG: I would rather see that noise. What is not stated by any of the manufacturers is the pressure sensor response time

JM: Am I correct in understanding that the faster the sink rate the less reliable the Wet Tags are?

DM: I do not think we have enough data to categorically state that, but that does appear to be what is coming through in the data collected so far.

DG: I do not think the comparison of data between slopes indicates reliability. It is the slope that is important, but we need more data to be able to accurately answer that question.

DM: On calm days with free-fall data, we see sink speeds of 3-6 m/s with the different rating regimes. An important conclusion is when you take that technique / test to sea, we are seeing much slower sink rates. This is due to the conditions experienced at sea not allowing for sink rates in optimal conditions.

JC to DG: Did you do any tests at slowest hook, i.e. clipping recorders by snoods next to floats?

DG: For SLL yes, but it doesn't make much difference under the tori line because the snood is slack. The backbone sink rate comes into play much later.

OW – IA: Has DOC already stated what we think should go in to CSP plan for next year (21/22)?

IA: We are currently working through the submissions on the plan that closed on Tuesday 25 May. The next steps are for us to gain approval from the DG Conservation and Ministers. We should hear outcomes about funding for next year soon. Once we have these, we will be able to look to engage on doing more work (more options outside of conservation services), through a transparent decision-making process. In summary, we do have options to pick up additional items for funding, however if these items are sought through the fishing levies, that process is now closed off for this upcoming year (21/22).

BSM to DG: Do wet tags not have an internal clock/ timer? Is that why you need to use a stopwatch or other timing device?

DG: The wet tags have a clock, but without the watch time you can't plot the profile against time after leaving the vessel.

3. MIT2018-02: Haul mitigation for small longline vessels – Vita Maris

Dave Goad presented on the haul mitigation for longline vessels project. The objective of this project was to develop effective and practical options to mitigate the capture of seabirds on haul in small vessel demersal and pelagic longline fisheries.

Dave's research involved sea trips to trial devices and collect data, the comparison of mitigation and non-mitigation treatments using real time observations and Go Pro video, and collections of a longer-term dataset from BLL EM footage.

Dave presented on the methods used for the research, the data collected and analysis of the data, and the results of the research.

Discussion:

OW: Have you defined the ethograms? If so, you can define behaviours.

DG: No, I have not looked into that, but it would be useful and is possible. I was hoping the wind direction would come out in the data. It would be possible to define specific behaviours and record these either in real time or on video. Eric Gilman has published a paper using EM video footage to observe bird behaviours behind the boat to test the efficacy of tori lines.

IA: An ethogram is a catalogue or inventory of behaviours or actions exhibited by an animal used in ethology. The behaviours in an ethogram are usually defined to be mutually exclusive and objective, avoiding subjectivity and functional inference as to their possible purpose.

DM: Permissions for use of EM footage are given by the vessel operator, so it was important for Dave to have a good relationship with the operators to be able to use the footage. This really demonstrates the value of experimental approaches to mitigation. It demonstrates the value of designed experiments and proxy variables as oppose to trying to define these things from data that's routinely captured.

DG: It is good having someone looking at the data without rose tinted glasses on. You notice differences beside the boat before a statistician does.

KM: I agree that designing experiments to test effects of mitigation is valuable.

4. BCBC2020-04 – Otago and Foveaux shag census, methodology - Parker Conservation

Graham Parker (Parker Conservation) presented on the work he has been undertaking on Foveaux and Otago shags. The objectives of the project were to identify breeding colony locations for both species, determine temporal colony attendance, species intermixing and nest survival rates and to identify suitability of drone use for aerial population census data.

Graham took the group through the results that came out of the trial camera set ups and the drone use above colonies. Unfortunately Graham was unable to undertake these research activities during the breeding season, so activities were carried out outside of the breeding season.

Chris Lalas who completed the last comprehensive survey of these species in 1983 was approached for comment but no feedback was received. Lalas' survey results found 4 x breeding sites.

Action: Graham to get in touch with Johannes Fischer (DOC) to get an updates on the shag populations at Whenua Hou

5. MIT2020-01: Hook-shielding use in the SLL fishery, progress update - DOC

Tiffany Plencner (DOC) presented on the project she has led, to facilitate the ongoing use of hookshielding devices in the SLL fisheries. The presentation outlined results from an assessment of the 19/20 fishing year, in which 14 vessels were supplied with hookpods.

Tiffany presented the uptake results, audit results of the use of hookpods by three vessels and a summary of the challenges that arose during the trials. Tiffany also shared some ideas of how we could mitigate some of these challenges going forward.

Discussion:

DG: Did you have any luck trying to get more hookpod specific fields into the ER data? I know there was a consultation about that. Has that come to fruition?

ID: The new circular on ER fields has been released and will better clarify what mitigation methods have been used. Hopefully going forward this will provide clearer data for analysis.

OW: It will tell you if is being used, and give a good feel for reported use. I would encourage you to keep pushing forward with this project. It is hard to understand drivers for the lack of uptake in hook shielding devices, however 'wharf talk' may have had an impact.

TP: Uptake has ebbed and flowed. In the last few weeks, we have had a few more parties show interest. We do need to keep on monitor whether the interest actually follows through to implementation into gear.

JC: Some of the tuna season fishers might pick up the shallower hookpods. When are these expected to arrive, and do you think they will be available in time for the tuna season?

TP: The shallower target hookpods open at 10m deep. These hookpods are due to arrive in July.