



Meeting: Conservation Services Programme Technical Working Group

Date: Monday 10 October 2022

Time: 9:30 am – 10.35 am

Place: Microsoft Teams Meeting

Chair: Karen Middlemiss (Science Advisor, Marine Species,  
[kmiddlemiss@doc.govt.nz](mailto:kmiddlemiss@doc.govt.nz))

**Attendance:**

Karen Middlemiss, Graeme Taylor, Lyndsey Holland, Tiffany Plencner, Johannes Fischer, Clinton Duffy, Julia Reid (DOC), Keith Jacob (DOC Protected Species Liaison Officer), Ben Steele Mortimer (Deepwater Group), Peter Frost (Science Support Service), Rosa Edward (FINZ), Dave Goad (Vita Maris), Gaia Dell'Aricecia (Auckland Council), Michael Donoghue.

**Presentations:**

9.05 am	Northern Royal Albatross aerial census on the Chatham Islands, Feb 2022	Science Support Service – Peter Frost
9:50 am	MIT2022-06 Light mitigation: reducing vessel interactions with seabirds – methodology presentation	Vita Maris – Dave Goad

**1. Northern Royal Albatross aerial census on the Chatham Islands, February 2022 (Science Service Support)**

Peter Frost presented the results from an aerial census of Northern Royal Albatross on the Chatham Islands in February 2022. This project is not funded by CSP but is linked to POP2021-03 Seabird population research: Chatham Islands.

Results from the survey show no obvious change in size of the Northern Royal Albatross population; the number of apparently nesting birds is broadly in line between previous estimates of the initial number of incubating birds and the number of chicks eventually fledging. Apparent changes in the Northern Buller's Mollymawk population on Motuhara, as determined from the quadrat surveys, are difficult to assess because of differences in survey approaches and assumptions; the population may even be increasing.

**Recommendations include:**

- Regular, twice-yearly, coordinated aerial and ground surveys of breeding Northern Royal Albatross, ideally in December and August.

- Another ground survey of Northern Buller's Mollymawk numbers in permanent quadrats on Motuhara, to test if the changes seen in these monitoring plots mirror wider changes in the population.
- Need to develop protocols to ensure that ground counts and aerial counts are comparable.

Questions raised:

GT – Was the drone survey undertaken at the same time as the ground count?

PF – there was one days difference between the two

GT – consistency is remarkably good considering different time of surveys

PF – made specific to find nests that had failed, very difficult at times, not too disturbed overall. Compensated by increasing coverage of aerial photos, but not always possible. Had difficulty in identifying painted rocks (corners of transects), as Mike had left the paint on the back of the truck, so had to make do with another paint which was harder to see.

GT – Hopefully DOC continues to fund this work. It can be quite hard due to the limited number of flying days due to weather, but hopefully will be better this year as we will be starting earlier in the season. Really pleased with result, this is the first time we've done this comparison and it gives great confidence that the aerial surveys we are doing are correct. Remarkable consistency thanks to Peter's perseverance.

## **2. MIT2022-06 Light mitigation: reducing vessel interactions with seabirds methodology (Vita Maris)**

David Goad presented the proposed methodology for light mitigation (land and sea-based options).

Artificial light at night from fishing vessels has been identified as a threat to several seabird species; birds can be attracted to light, or may become confused/disorientated and collide with the vessel. Methods proposed involved using mast/pole mounted lights in one land and one sea experiment, with different colored light treatments, and measuring the response/behavior of birds.

Questions raised:

CD – Don't think chumming should be employed in the at-sea trials

BSM - Adding chum would be another attraction, don't think it's appropriate and it could change bird behavior, abundance etc

KM - The chumming question arose when discussing potential use of a charter vessel that won't be fishing. So chum may be needed to replicate vessel attraction.

PF - I'd agree, I don't think that chumming would be appropriate. Chumming just adds another variable to account for (or more, given the likelihood of variable

response by species).

CD - One source of mortality I've seen involved white-faced storm petrels being eaten by arrow squid. This occurred at anchor at Three Kings Islands. Birds striking the vessel fell into the water where large numbers of squid that had been attracted by the lights attacked them.

BSM - If we're looking specifically at lighting then by adding chum we won't be able to attribute bird activity to lighting or the chum.

GDA - I see your point of vessel attraction but here you're not trying to compare South to North Island trials. The idea is still to test different kind of lights. Adding chum would add a source of attraction that plays differently on different species (e.g. not all species are attracted by chum, as not all species are equally affected by light). Having a non-fish-smelling boat would actually be a good method to test for light attraction only, excluding other potentially confounding variables

RE - Would you incorporate protected species liaison programme triggers into the protocol for at sea work, to guide you as to when a threshold gets too high?

DG - I will be guided by experts through CSP, need to make sure all boxes ticked and consider all real world factors/scenarios. Keen to consider on liaison programme triggers.

GT - In terms of trialing during full moon or new moon period, if you are not on a fishing vessel, and haven't got the attraction of fish then we might be better to test lights during a new moon period.

KM - Dave made a point earlier about birds for land-based trials not flying under full moon.

JF - Agree with going for new moon phases

GT - Comes down to species for whether lights on vessels become distraction source, and not sure if the same thing would happen on a full moon night. You would be able to see things a lot clearer on full moon. Charter boats could look at doing it in new moon period rather than full moon.

BSM - The focus of this project on the effect that light has, and new moon is the way to go. It will help us see how different birds respond.

KM - We could look at the different species variables further down the line however we don't have potential or resources to do that currently.

BSM - Variable degrees of appropriateness for vessel lighting, can be subjective place to place. Looking at appropriate lighting for vessels will be hugely variable, especially trawlers that need to be lit up for setting and netting, more so than BLL vessels. How will we be able to measure appropriateness, given variable birds, space and overlap between all those things.

DG - The focus of this project is looking at lighting colour and looking at if you cut

out some wavelengths that potentially we don't need, whether this reduces attractance or changes behaviour (less confusion). Addressing individual vessels will come further down the track. Best chance for getting a positive result is to keep treatments as tight as possible.

JF - Identifying what would be appropriate for which method/vessel etc. is outside of the scope of this particular project and something to be picked up further down the line.

RE – Just want to highlight that outcomes may be influenced by expectations of camera rollout; has that been considered for this project? As in future there will be a need for vessels to be lit up so that footage from cameras can be reviewed.

DG – We have not been given specs from MPI. There is a tight focus on colour and intensity of light. We may exclude some wavelengths of light while still allowing the fishers enough light to continue operations. Outcomes could inform future work, i.e. a light audit for what people and cameras would need to work.

RE- Would like to highlight that as we progress with this work, FNZ need to be in the room. E.g. in terms of positioning a red light, need to consider that vessels have navigation lights on when steaming.

KM – Our research approach is to identify light types that allow for safe vessel operations. We are looking to improve on the previous project while identifying ways to reduce deck strike. Looking at a suite of options to continue safe operations of vessels. Acknowledge that EM will require good lighting for footage review.

GT – 25,000 lumens seems very bright, is that the normal light capacity on a boat?

DG – that info was taken off the Hella website, this is their big marine floodlight, but have not dug further into what other vessels are using.

GT – as long as it's representative of what fishing vessels are using

KM – Part of the project is to look into what each vessel is doing in terms of lighting setups then to run a trial.

BSM - Will you be looking at the effects of different lights on different species?

KM – Not in this project

Any additional comments should be provided to [csp@doc.govt.nz](mailto:csp@doc.govt.nz) by 5pm, 24 October 2022.

Close of Meeting @ 10:35 am