Department of Conservation
Te Papa Atawbai

Meeting: Conservation Services Programme Technical Working Group
Date: 16 June 2016
Time: 9:00 am – 2:30 pm
Place: G0.1 Holloway Room, Conservation House, 18-32 Manners St, Wellington.
Chair: Ian Angus (ph: 04 471 3081; email: iangus@doc.govt.nz)

Attendance: Ben Sullivan (Fishtek/Hookpod), Johanna Pierre (JPEC), Richard Wells (DWG/FINZ), Karen Baird (Birdlife International/Forest & Bird), Janice Molloy (SSST), Suze Baird, Malcolm Francis (NIWA), Rich Ford, Annie Galland, Nathan Walker, James Andrew, Amanda Richards, Dave Foster, Greg Lydon, Dominic Vallieres, Jo Lambie, Sonja Hempel (MPI), Geoff Tingley (Sustainable Fisheries Partnership), Jack Fenaughty (Sanford), Peter Richie (VUW), Kris Ramm, Katie Clemens-Seely, Freydis Hjorvarsdottir, Graeme Taylor, Igor Debski (DOC), Dave Goad (Vita Maris)

Apologies:

CSP TWG presentations:

1. **Hook Pod Trials – New Zealand Surface Longline Fishery Ben Sullivan (Hook Pod Ltd.)**

- **RW** how much do they cost?
  - Commercially avail for $10USD, may be reduced in time
- **RW** what is the difference between a failure and a loss
  - A failure is a pod that doesn't open, or breaks, in any way; a loss is a pod that doesn't come back
  - **RW** important to keep those two separate as one is a malfunction, and the other requires the spending more money to replace gear
- **JM** did you catch seabirds in the 8 sets?
  - Yes, two. One caught on the haul and one sooty shearwater was caught on the control treatment
- **GL** were they setting at night, using light sticks
  - Yes, although the frequency of light sticks on the line does vary with regards to the fishery
- **KB** the rate at which the hook sinks isn't important anymore, when using weighted lines, the speed at which is descends is important, so the sink rate isn't important anymore?
  - Yes – the sink rate is much less critical now, although we do need to test sink rates of the new smaller hook pods
- **JM** did you observe any birds mouthing at the pods or attempting to ingest them?
  - No, there were concerns around whether birds would get tangled in them, but haven't seen anything like that
  - **ID** would be worth looking at getting data on birds' interactions with the pods
- Discussion on regulatory requirements for hookpods in New Zealand and ACAP best practice requirements

    - ID it can be implemented immediately as a mitigation measure (line weighting) in conjunction with other methods but recently ACAP recognised hook pods as a standalone measure best practice measure
    - RW does it meet NZ regulatory standards?
    - ID it meets ACAP best practice requirements
    - DV the smaller pod or the larger one?
    - BS The larger one, haven't yet had the chance to collect the same amount of information on the smaller devices as there's only been one trial done in NZ.
    - ID ACAP best practice criteria include being practical/cost-effective
- RW it meets the standard while it's at the hook (deployment), but once the hook is released, does it meet regulatory standards at 45grams?
    - More data is needed. Could add lead weight to increase weight, but that might increase size as well
    - KB while it's difficult to change regulations, though is illogical to alter device to meet regulations, so more sensible to change the regulations
- NW performance requirements from ACAP to ratify new device, developed at last meeting, talks about meeting specific requirements (listed from ACAP), we've started to do this, but there's some gaps and maybe we need to have a discussion at the seabird bycatch working group to decide whether this smaller device could suit needs, etc. Does ACAP/bycatch working group require the same level of evidence for a similar device?
    - We hope that the background research will contribute to this
- RW if a blue shark bites the line off do you lose them and what was the rate of loss due to sharks
    - Caught a reasonable number of sharks, lost 4 pods to sharks, 2 were lost because of crew error.
- RW for commercial uptake, emphasise the small loss rate
- RW what ratio of bird are caught on the haul?
    - NW 30% bycatch caught on the haul, however this could change fishing methods as these pods could allow for setting during the day and hauling at night.
- GT Loss rate for NZ trial mentioned, but no loss rate for the other trials
    - Post December 2014 (when shock cord was included), had loss/breakage rate of 1.1%. Loss rate generally low (~1%) but did lose some to sharks. Will look at difference in loss vs. breakage
- ID look at location in relation to the snood – does that affect loss/breakage?
    - Can investigate
- Discussion on ensuring that safety procedures were built into the protocols.
- KB have they been trialled with wire trace
    - Have done trials in Japan, in 2014, and a few weeks ago – fitted them on wire trace. The fit well, no problems with slipping, but as there is no stretch in the wire it loses any built in safety feature
- GL how do you randomise controls, a whole set of pods? Different baskets?
    - Design is based on block treatments, and the first treatment is randomised. For these trials (with 30 pods), that is a degree of complexity that we won't be necessarily able to achieve, will have to be fairly flexible in this and work with the crew & skipper
    - DG consideration should be given to attributing more pods to any observed trips to maximise data collection
- Why develop the smaller hook pods?

    - There was concern about providing mitigation methods with lights as that could increase shark bycatch, also a more compact device can be easier to handle/store etc
- **JA** Useable on any hook type?
    - Yes, only found one hook that it didn't fit which was an 18/0 hook, that wasn't actually on a boat
- **RW** should more pods go on fewer vessels?
    - Potentially though there is merit in allowing more fishers to trial them.
    - **ID** there is merit in allocating some vessels more pods and doing this in conjunction with some at-sea researchers
    - Discussion around the allocation of pods resolution to be clear about the objectives and adequate training for the crews to ensure that pods are used correctly
    - Two phase approach of data collection first to allow for ACAP approval and then having leftovers for demonstration purposes

2. **MIT2013-05 Development of Bird Baffler design for offshore vessels Johanna Pierre (JPEC)**

- **RW** differences in bird baffler design often go hand in hand with the differences in trawler design – some, like the San Waitaki (with a steeper warp angle), are able to tweak the designs to better cover the area and prevent birds was coming in contact with the warps, whereas on other boats (where the warps are at a more gradual angle), there can be 30-40m of warp before going in to the water, and these vessels use 2-boom bird bafflers to push the bird aggregation out and away from the side of the vessel, but are unable completely cover the entire warp area.
- **RW** highlighted how sea conditions have an effect on the shape, movement and function of bafflers and the ease in which the warps can damage or tear off the baffler
- **RW** are baffler boom sizes going to be specific to vessels, in particular due to their extent of freeboard
    - Yes will need to be specific
- **RW** useful to note that wear and tear on normal system, breakages, maintenance, repair, etc was a constant feedback from Observers – seeking better droppers was a key thing to get out of this project.
- **RW** skipper comments that the baffler was very good, other vessel also enquiring what the bafflers were and showing interest. Also worth considering how applicable the findings around the function of the droppers are to other baffler designs
- **SB** was there any data collected on the haul?
    - Baffler was left in place and no problems were recorded
    - Any data collected on bird abundance during the haul and the effect the baffler had on that?
    - Will re-interrogate the data
- **JA** Was there any consideration given to sliding booms?
    - Yes but engineers did not approve of this method
- **NW** any plans to test how effective this is to other systems?
    - Yes – that is a key question to answer going ahead and confirm the findings empirically.
- **RW** the question now is can we build this for less somehow, can you build the framework more cheaply
    - Potentially yes
- **BS** did you get in touch with the Australian trawl fleet? They've developed some new advances lately.

    - **RW** all Australian vessels have blocks outside. More like a tori line on a pole.
- **KB** the use of the Kraton pipes is effective at reducing entanglement, and tori lines have entanglement problems, do they also use the Kraton?
    - No – using pvc or something else
    - Weight is a big consideration for tori line aerial extent.
    - **RW** there were two projects to improve the tori lines, the material was changed and now we use Kraton, and new designs, so now the tori lines are all the same across the deep water fleet. Need durable, visible, available, affordable, but not too heavy. The pipe on the bafflers is too heavy to hang off a tori line.

3. **MIT2014-02 Small vessel tori line development Johanna Pierre (JPEC)**

- It was clarified that the project covers both demersal and pelagic longline.
- **RW** was the relative strengths of backbone vs. tori line considered in terms of cost of loss gear / operations?
    - Yes it was considered along with the relative costs of tori line materials
    - **DG** Weak link was setup on the last trip to protect the pole and allows you to clip to the mainline in the event of breakage to prevent loss
- **GL** in the past CSP provided tori lines, are they still being used?
    - **DG** yes many of them are still out there albeit with some modifications
- **RW** variation in setting speed is between vessels or between conditions or between skippers?
    - Mostly the difference is between vessels
- Discussion around the use of differing drags objects and their various trade-offs between having more drag vs. less chance of catching on gear
- **RW** were tori line weights considered? Is there a rule of thumb?
    - Was considered but some further testing would need to be done to give a better figure however we are now collecting enough data to start considering this
- Discussion around the different methods for attachment of tori line poles
- **KB** how does pole placement relative to line setting make a difference to coverage
    - It does make a difference and needs to be considered, particularly since wind and sea conditions effects where the hooks leave the vessel.
    - **JF** can use a centring line like with the deepwater vessels to ensure adjustability
- **ID** do we know anything about the material's longevity?
    - Yes, we tested the different products, in /the sun over 7 months, newer ones were better, but not a big problem, because the tori lines won't be affected by UV that much (due to shooting at night). Strength of the new ones after 7 months- pretty good.
- **JF** Speed is important in terms of the drag, so given the fact that you had good weather and in a small boat your speed can differ quite a lot how comfortable were you that it the aerial extent can be consistently maintained?
    - Didn't have a GPS tracking it specifically, had the throttle set by the skipper to roughly 5 knots.
- **JF** and how confident are you that that speed could be maintained in bad weather?
    - In different weather can use different drag objects

4. **MIT2015-02 Small vessel seabird mitigation: project priorities Igor Debski (DOC)**

Tori line discussion:

- **RW** need a how to guide and list of materials and suppliers which will allow new entrants to set themselves well from the start

- JP This is being worked on at the moment and will align with MPI on this

- GT do fishers have clear objectives, such as aerial extent
  - Yes this is defined in legislation
- SB has this been presented to fishers at conferences?
  - Not yet but can do
  - RW This should also been extended out to gear wholesalers to that the right product is provided
- JM should there be guidance for tori lines in relation to sink rates
  - Yes ideally however we have found that this is so variable it was necessary to simply draw a single benchmark

Other devices

- RW needs clarity around the difference between the KLS and line setter.
  - For clarity the KLS is intended for demersal longline use while the line-setter is intended for pelagic longline. Will work on some terminology clarifying this
- RW continue to pursue the option for lasers in certain conditions for certain fisheries though cognisant of animal welfare issues.
  - NW other safety issue should be considered such as human safety and navigational issues.
  - ID at ACAP it was discussed that could be an issue for people within 2kms, so could be an issue if there were other fishing vessels in the area
- JM underwater bait setter is being tested at sea this month and a unit has been gifted to an NZ fisherman so this could be considered as an option.
- RW integrated weighted snoods are also being investigated
  - JM some of this has previously been done by DOC and sink rate was not considered to be particularly good.

5. MIT2014-01 Bycatch Newsletter 2015-16 Johanna Pierre (JPEC)

- JM can this be adapted to reach recreational fisherman
  - IA Yes it could, but as it's a cost-recovered project addressing the bycatch of protected species caught by commercial fishing, it's difficult. Select articles could possibly be presented in other forums
  - ID with the changes suggested in this project in the new CSP Annual Plan 2016-17, it may become easier to share articles/the newsletter to wider groups.

6. POP2015-07 Genetic analysis of protected fish Malcolm Francis (NIWA) and Peter Richie (VUW)

- RW suggested removal of vessel names from the spreadsheet before making available on the DOC website.
  - Amended
- GT how do you deal with issues where two reports find different genetic results?
  - One study showed little difference, but only examined the control region; a second study used further loci and was able to identify 2 populations. This is quite common in genetic analyses that when you use more loci/genes you get more information and are further able to delineate populations.
- RW If the females are philopatric, and they mate with the males in one area, but go back to where they were born to give birth, do we tag both male and female?
  - Yep – tag both males and females, know the female lineage through mitochondrial DNA

- **RW** at what level does genetic differentiation between populations feed into conservation decisions?
    - It depends on the nature of the differentiation and the nature of the threat
- **GL** is this more expensive that microsats?
    - It's roughly the same – AgResearch has developed a grant to help this process be streamlined.
- **GT** what's the evidence for Deepwater nurse shark having a NZ resident pop given no genetic evidence
    - It's an assumption based on the demographics of the species and location of the population
- **SH** should one still start with mitochondrial, or is it now worth proceeding directly to the genotyping by sequencing?
    - Depends on a number of factors including quality of DNA and the nature of the research question
- **SH** is there difference in storing in ethanol vs. storing at -80C?
    - 80 still the best though freezers can fail so there can be a balance