



Meeting: Conservation Services Programme Technical Working Group
Date: 4 August 2026
Time: 10:00 am – 12:00pm
Place: Microsoft Teams Meeting
Chair: Kris Ramm (Manager, Marine Bycatch and Threats Team)

Attendees: Katie Clemens-Seely, Tiffany Fischer, Lyndsey Holland, Hannah Hendriks, Erin Hewetson, Kristina Hillock, Steve Pilkington, Anton van Helden (DOC), Jenny Beaumont, Jaret Bilewitch, Amelia Connell, Emma Jones, Peter Marriott, Diana Macpherson, (Earth Sciences NZ); Sonja Austin, Anna Wood (FNZ); Victoria Warren, Craig McPherson (JASCO Applied Sciences); Dave Goad (Seafood NZ); Ben Steele-Mortimer (DWC Seafood NZ); Natalie Jessup (Endangered Species Foundation); David Middleton (Pisces Research); Simon Childerhouse (Blue Planet Marine); Steve Dawson; Christine Rose (Independent)

Presentations:

10:05 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	ESNZ
10:50 am	MIT2024-07 Hector's dolphin acoustic deterrence devices in trawl and set net fisheries	JASCO

1. 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 (Earth Sciences NZ) presented on improving knowledge on coral life history traits.

Discussion:

LH: In terms of the Solenosmilia, it is quite interesting that polyps are either male or female, assumedly that is to avoid cross-fertilisation?

PM: This was my take on it, and I imagine that if you restrict yourself to either male or female gametes at one time point you exclude the possibility of self-fertilisation.

JB: And having that synchronisation across the whole colony rather than within each polyp makes sense.

PM: All the samples at a given point were either resting or presented the same sex.

LH: So, on an intact colony, you would assume there are either male or female polyps with different colonies spawning at the same time? Some shallow water corals have different strategies – for example hermaphroditism on the same colony, where egg and sperm bundles are released but then separate in the water column to avoid cross-fertilisation and inbreeding.

PM: Hermaphroditism is very common in shallow water corals, rarely observed in deepwater coral, especially serial hermaphroditism, suspect this is from the sampling, most are from a single point in time so you can't tell whether that individual will present as the same sex over time. Shallow water corals are much easier to sample repeatedly.

LH: Really valuable to keep them in tanks. May find it is a more common trait than we are aware of just because of sampling difficulties.

LH: On the *Goniocorella*, you suggest it is not spawning every year, I wondered if you know of other deep sea coral species that might reproduce in a similar pattern?

JB: We know of another coral that spawned continuously for 9 months. Makes sense to have a decent resting period to build itself up to spawn, suspect it is not uncommon for species with a long spawning period as this would be a huge energy draw.

LH: Might be different every year, so can't say this definitively?

JB: Yes, this is a single snapshot in time, though in a previous experiment with the same species we saw the same timing. Thought the first time it might have spawned because of stress in productivity or more food, but the timing was different, could be that they spawn the same time each year but not the same colony each year. If we could collect more samples to store for histology, we may be able to get a better picture.

BSM: Interested in your thoughts on how these corals may exhibit different behaviours between controlled environments and environments they naturally exist in at depth and trying to summarise potential limitations of doing this work in aquarium?

JB: Animals that are captured and brought into aquarium have suffered significant stress and their food source is different compared to the wild. Food quality and environmental conditions etc., are also different. The histology that we collected from animals taken straight off the seabed matched what we saw this time from animals in aquaria, it's really difficult to study animals in the deep

sea, the only opportunities we have to look at how they behave is to bring them into aquaria. Yes, there are challenges and we cannot definitively say they don't act differently but this is still a useful way to look at how they behave and compare these with histology samples to build knowledge.

PM: They're very complementary science approaches, histology on point-captured samples collected by observers at sea gives us a snapshot of what is happening at that point. But, bringing some specimens into aquaria lets us answer another suite of questions that we can't answer from wild capture samples.

JB: For example, we now know the *Solenosmilia* is gonochoric and we couldn't tell this from a wild sample. Adds value to what we can know.

BSM: Understanding the potential limitations and differences that the coral may exhibit in aquaria versus in the wild is important as this work may pass into risk assessments.

JB: Agree it is very important. An example was that most of the corals settled on black plastic which wouldn't be a natural substrate for them in the wild, if this wasn't available would they have settled on coral or not settled at all? There are things you can't remove when in-aquaria so would always caveat this in research outputs.

2. MIT2024-07 Hector's dolphin acoustic deterrence devices in trawl and set net fisheries

Victoria Warren (JASCO) presented on measurements of sound propagation at-sea in New Zealand's coastal waters utilising devices used as marine bycatch mitigation.

Discussion:

SC: The modelling is from one pinger, but aren't your perceived levels potentially picking up all four of the devices? Could this contribute to the differences between them?

VW: We were looking at maximum received level and taking the average from this which presumably comes from the closest pinger.

SC: So, it doesn't have an additive effect?

CM: The other pingers are quiet, based on their locations, their additive contribution on the dB scale would be in the error margins.

SC: For the pingers, the real-world propagation was more efficient than modelled, but looking at your figures there is quite a significant difference between modelled and empirical, why do you think this is?

VW: Question will be addressed in following slides.

SD: I question whether this work really reveals how far apart these devices should be placed? It depends entirely on how the dolphins respond which will almost certainly depend on their motivational state which may vary among individuals. I'd be sceptical about using the propagation and sound levels produced by these devices to tell us how far apart these devices should be.

KR: This particular topic is out of scope of the current research project.

CR: Are there other pingers and DDDs with different specifications that are being used by the fishing industry that might have different sound profiles?

VW: There definitely are other models in use but currently, I couldn't tell you exactly which models are used and where in the country

AvH: These models were selected because they were suggested by the fishing industry as the most widely used devices so wanted to capture this in the first instance. As to other devices, we don't have particularly strong oversight of what is being deployed but this is a way for us to get an understanding of how devices may be being used and how we may work towards regulating such activities.

CR: If there are a range of these devices that are being used and without giving us much information on the impact on dolphins, there is a risk that the industry, already use pingers/DDDs as a solution to bycatch. So, there is risk with this report that there will be an assumption that everything is okay without the nuanced understanding that it is not covering all sea state conditions or all devices.

VW: This was the purpose of the modelling as it gives us different environments and propagation conditions and basically only confirmed one situation.

PM: One of the pingers didn't appear to show up on the acoustic trace initially. The suggestion is that they are omnidirectional, but could the orientation of the pinger have an effect on sound propagation?

VW: We did assess this in previous research. Measured the orientation and sound propagation and they are omnidirectional.

AvH: The purpose of this research was to help us have confidence in the modelling so we could use this approach to look at real world scenarios in different locations. One of the concerns was not whether they are effective in mitigating dolphin bycatch but rather the effect of the devices on the dolphins. So, the idea of understanding whether we applied modelling to another scenario and looking at the footprint of sound propagation as to how much of the area is effectively excluded from the dolphin's use as a way to consider whether or not they are viable to use without limiting a dolphin's ability to behave normally. Or potentially a way to look at how we could limit the number of vessels that could use these devices in a particular area. Are there implications for

displacement of dolphins that might be small/vulnerable populations and considering how this would be applied to fisheries that are currently allowed in that area?

VW: Yes, addressed this under future work. A fleet-wide assessment where you have multiple vessels moving around multiple sound sources, could then look at sound footprints over time and compare this against internationally accepted criteria of auditory impairment and behavioural response. Could draw a map where the sound is focused and how this affects dolphin's behaviour, but this all relies on knowing how the dolphins respond which may be a parallel step to this modelling.

KR: Noting that no single piece of work will answer a complex question on its own. Encourage attendees to engage with DOC research processes.

DG: Regarding the pingers, has anyone reached out to the people that make them and asked how they came up with 200 metres? And with the DDDs, in a trawl environment there is a lot of other noise going on from the boat, the gear, and dual-frequency sounders, my assumption is that some of this noise is pulling dolphins into the operation – are we still confident that the DDD is audible and recognisable amongst that soundscape?

VW: Trawlers absolutely make a lot of noise, what we were asked to consider here is that currently in standard operations they use 2 DDDs on a trawl net, looking at whether there should be any at all was outside scope. Answering a smaller question within this research.

DG: But are you happy that one would still be sufficient in a louder scenario?

VW: Yes, I think it would cut through sufficiently.

CM: There is a behavioural aspect that we didn't address, this research was simply addressing an estimate of audibility by the dolphins and the best way to do this is in a quiet environment. The sound is quite different to any of the vessel sounds so will stand out. We didn't address behavioural responses to these devices and is why it is important to connect this with d-tag work because animals behave in a context dependent way, a lot of factors that will impact how the animal behaves which is out of scope of this research. We have approached manufacturers about how they came up with estimates and there have been no concrete answers. This was a continued stage of work and the devices that were used in this trial were those used in the previous piece of research. Other studies have shown variability in the manufacturing of these devices, we are aware of this and have made reference to it, and we don't know how stringent the manufacture and testing of these devices is. Likely to see quite a bit of variability in these devices, has been commented on in other work. We tried to avoid edge cases which could be a lot louder or a lot quieter.

SC: We don't really know what the impact of these devices are, but this is a step towards getting there. Really important that you have made recommendations of spacing and placement of devices, when recommendations are made can you be explicit on what these are based on? Did this project have a marine mammal research permit associated with it? Did you follow any risk assessment process? If we are going to endorse the rollout of these devices in industry, then they should be subject to permits

AvH: This is all part of what this research is trying to inform. Devices are currently being used that we cannot regulate, and this is a step towards that. This is a tricky process bound up around underwater noise guidelines and standards that are a developing framework with MCERT and others. Will require regulatory framework that we don't have and would be very difficult for DOC to manage. There is another CSP research project expanding on this work. Industry standards/guidelines may be a more fluid and useful approach.

VW: There is an entire section in the report that would reduce impacts of the research.

SD: These meetings have a very narrow focus, sometime soon we need to know what proportion of the fleet is using DDDs/pingers, is there any reliability in the use of these devices, is there any consistency in these being used, are there any hard data on whether they are effective or not? We need these answers as soon as possible.

KR: I would point you to other dolphin forums and where there are research questions within the scope of CSP I would suggest engaging with the research planning process.

AvH: I agree that this is an important question, but we need to establish where this sits and where we can get budget for it.

AvH: The description of the pinger states that it operates between 60-120 khz, the testing showed it operated mostly between 60-70 khz?

VW: Did also find some harmonics (higher frequencies) so not completely wrong.

Any additional comments should be provided to by 5pm, 18th August 2026.

Close of Meeting @ 12:00pm.