Māui RAG Technical meeting – summary meeting notes

9 am – 4pm, 23 August, 2017

Hihi Boardroom, DOC Auckland Office, 12-16 Nicolls Lane, Parnell.

Facilitation team: Ben Sharp and Laura Boren

Attendees: Rochelle Constantine, Craig Radford (University of Auckland), Wendi Roe, Karen Stockin (Massey University), Deanna Clement (Cawthron), Kim Goetz, Krista Hupman, Charlie Edwards (NIWA), Barbara Breen (Auckland University of Technology), Liz Slooten (skype) (University of Otago), Ben Sharp, Andy McKay, Erin Breen (MPI), Laura Boren, Kris Ramm, Kristina Hillock (DOC).

1. Laura Boren briefly talked about progress against the research projects in the 5-year research plan. All projects in Table 1 (Tier 1 – committed projects) of the research plan have either been completed or are ongoing. Of those in Table 2 (Tier 2 – proposed projects) the projects identified as high priority are ongoing. Laura noted that one project that had been raised at the last MRAG Stakeholder meeting in September 2016 had not yet been added to the table: Impact of noise from mining and gas exploration.

2. Laura Boren and Ben Sharp outlined the research needs and plans in the lead up to the risk assessment workshop to be held in mid-2018. This included the following projects which are ongoing or due to be completed by mid-2018:
   a. Necropsy of dead Māui or Hector’s dolphin – this has been amended so that any remaining funds can be used to address toxoplasmosis work.
   b. West coast North Island offshore distribution using CPODs (acoustic recorders) and sound traps out to 12 nautical miles off shore between Hamilton’s Gap and Cochran’s Gap.
   c. Update to Hector’s and Māui dolphin bibliography.
   d. Demographic assessment of Māui dolphin population from photo ID.
   e. Along shore distribution – further deployment of CPODs in the Taranaki and Whanganui region (and analysis of the data).
   f. Genetic analysis of top of the South Island Hector’s dolphins, and other opportunistic biopsy of Māui dolphins outside the core area of distribution.
   g. Risk assessment for Māui and Hector’s dolphins.
   h. Ongoing validation of reported sightings.

   a. 9 acoustic moorings off Hamilton/Cochran’s Gap out to 12 nm.
   b. 7 moorings have paired CPODs and sound traps, remaining 2 inshore moorings only have CPODs.
   c. Deployed end of June. Data will be downloaded and batteries changed in September, December and March, with final recovery in June 2018.
4. Wendi Roe gave a short presentation regarding the causes of mortality in Hector’s and Māui dolphins.
   a. 18 Māui dolphins have been necropsied since 1996, and 112 Hector’s dolphins since 2007.
   b. Disease has been the cause of a number of dolphin deaths over that time period.

5. Rochelle Constantine gave a short presentation about the Māui photo ID work and the genetics work.
   a. 38 individuals with distinctive markings in photo ID catalogue; 7 of those dolphins also have genotype matched.
   b. Genetic mark-recapture abundance work planned for 2020/21 will provide a third datapoint for this abundance work using the exact same methodology.
   c. Some work done on Hector’s in Golden Bay and Queen Charlotte Sound to determine connectivity with WCNI Hector’s.
   d. Still no haplotype G (i.e. Māui) in the top of the South Island dolphins.

6. Deanna Clement spoke briefly about the validation process for Māui dolphin public sightings.

7. Barbara Breen gave a presentation on the use of UAV for monitoring cetaceans, and the capability of AUT to provide this tool.

8. Kim Goetz presented on the work being undertaken on spatial distribution modelling.

9. Liz Slooten talked via Skype about the two Māui research projects from Otago University:
   a. Historic distribution of Māui dolphins based on dolphin bones in midden remains from the North Island, including the Hauraki Gulf.
   b. eDNA water sampling from North Island waters, within and beyond known Māui dolphin habitat.

10. Ben Sharp informed the group the NIWA had been awarded the Hector’s and Māui dolphin multi-threat risk assessment project that will culminate in the risk assessment workshop in mid-2018. The wider group was asked for input on what data exists for Māui (and Hector’s to some extent, although this meeting was focused on Māui) that could be used in the risk assessment models. Krista will send around some spreadsheets to the group to elicit potential data sources. A number of important sources of potential data were identified:
    a. Teeth from dead dolphins – some have been aged by Otago Uni, while Massey hold the rest. The decision was made that this data is high priority to feed into the risk assessment. All teeth samples will be (re-)analysed at the same time. Liz will send the teeth that she holds to Massey, and DOC/MPI will work out a contract for this work to occur. This project will be the number 1 priority for this financial year.
    b. Any mark-recapture data would be beneficial to inform the demographic model.
    c. Boat-based data and Banks Peninsula photo-ID data (including a revised maximum age) from Otago University.
    d. Everyone has indicated a willingness to share data for the purpose of informing and strengthening the risk assessment work. Liz asked for more information about the proposed risk analysis and undertook to discuss the project with others from the Otago University marine mammal research team. She indicated that Otago University would likely be much more interested in a collaborative research project, rather than handing over raw data for someone else to analyse.
11. The final session of the day involved brainstorming research priorities for the next 5 years:
   a. Toxoplasmosis – risk analysis work, cat census
   b. 2020/21 biopsy mark recapture abundance estimate
   c. Epigenetic aging
   d. UAV monitoring for offshore distribution, and in-harbour distribution
   e. Intensive harbour effort involving acoustic, recreational fishing surveys, aerial surveys etc.
   f. Winter surveys e.g. photo ID
   g. Climate change scenarios
   h. Public awareness campaign push
   i. Comparison of public sighting reports versus amount of social awareness.

12. Actions:
   a. NIWA will circulate via MPI a demographic data input table to be populated by everyone to ensure that all potential data sources are known and can be acquired to inform the risk assessment.
   b. Laura Boren will follow up with Liz Slooten, Karen Stockin and Wendi Roe to arrange all Māui and Hector’s teeth to be sent to Massey for aging.
   c. DOC and MPI will discuss with NIWA regarding data availability from Otago University for the risk assessment.
   d. Laura Boren will send Krista Hupman the most recent Māui dolphin bibliography.

Meeting closed at 1600 hrs.