



# Hector's and Māui dolphin Threat Management Plan 5-year science planning workshop Meeting Report

14 and 16 December 2020

## Background

Hector's (*Cephalorhynchus hectori hectori*) and Māui (*C. h. maui*) dolphins are small coastal dolphins found exclusively around New Zealand. Hector's dolphins live mainly around the South Island, while Māui dolphin distribution is exclusively around the west coast of the North Island (WCNI). Hector's dolphin is ranked as Nationally Vulnerable by the New Zealand Threat Classification System (NZTCS, Baker et al. 2019) and has a population of approximately 15,000 individuals (MacKenzie & Clement 2014, 2016). Māui dolphin is ranked Nationally Critical under the NZTCS (Baker et al. 2019) and has an estimated population of 63 (95% c.i. 57–75) individuals greater than 1 year of age.

There are a number of threats to these dolphin subspecies, that include but are not limited to, set net and trawl fisheries, toxoplasmosis and other diseases, seismic surveying, seabed mining, vessel-based tourism, contaminants, pollution, habitat modification, and changes to prey type and availability. In addition, many of these threats may also be exacerbated by changes in sea temperature, ocean acidification, and sea-level rise associated with climate change. These threats range from those that are well understood and extensively addressed in the updated threat management plan (TMP), such as impacts from commercial fisheries, to those where the impact on the dolphins is less understood, nor well addressed, such as climate change.

As such, the TMP contains the medium-term research goal: ***Improve knowledge of poorly understood threats.***

To achieve this goal the Department of Conservation (DOC) and Fisheries New Zealand (Fisheries NZ) will develop a five-year research plan to:

- identify and allocate resource to new research,

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- monitor to improve understanding of the nature and extent of any poorly understood threats, and
- evaluate existing management measures are achieving the goals and objectives of the updated TMP.

This report describes a summary of the process that was followed in the two-day virtual workshop to help develop the priorities for future research that will be presented in the 5-year research plan.

To allow input and open communication into this process by the science community the workshop involved invited experts from across various disciplines from New Zealand and overseas (see Appendix 1. for agendas).

### **Attendees**

DOC: Anton van Helden, Dave Lundquist, Hannah Hendriks, Ian Angus, Kristina Hillock, Mike Ogle

Fisheries NZ: Ben Sharp, Erin Breen

External (NZ): Alana Alexander (Otago University), Amanda Leathers (WWF- NZ), Darryl MacKenzie (Proteus), Deanna Clement (Cawthron Institute), Jim Roberts (Anemone), Jody Weir (Kaikōura Ocean Research Institute Inc.), Liz Slooten (Otago University), Rochelle Constantine (University of Auckland), Steve Dawson (Otago University), Simon Childerhouse (Cawthron Institute), Tamar Wells (Te Ohu Kai Moana), Tom Clark (Fisheries Inshore New Zealand), Wendi Roe (Massey University), Will Rayment (Otago University)

External (International): Brian Balmer (National Marine Mammal Foundation, USA), Debbie Dietrich (Oregon State University, USA), Frances Gulland (Marine Mammal Commission, USA), Scott Baker (Oregon State University, USA)

Apologies: Anna Hughes (Fisheries NZ) Craig McPherson (Jasco, Australia), Robin Baird (Cascadia Research, USA), Mark Johnson (Aarhus University, Denmark), Peter Madsen (Aarhus University, Denmark), Jakob Tougaard (Aarhus University, Denmark)

Facilitator: Mara Wolkenhauer (DOC)

### **Purpose**

An effective management and monitoring process for Māui and Hector's dolphins must be based on robust information and evidence-based decision-making. The purpose of these workshops, therefore, was to:

- Evaluate relevant knowledge gaps,
- Identify potential tools and methodologies to fill these gaps, and

- Prioritise research to best advance our understanding of Hector's and Māui dolphins, and the threats they are exposed to, with a primary goal to informing appropriate future management options for each subspecies.

## Workshop Summary

Participants were asked to not limit thinking and innovation with potential constraints of funding or logistical practicalities. As such, discussion of various technologies and innovative approaches to advance our understanding of the animals and their conservation needs were welcomed. Consideration was given to the availability and applicability of tools and methods in a New Zealand context.

The first workshop focussed on identifying knowledge gaps and questions that the expert panel viewed as key to the achieving the TMP management goals for these subspecies. Over sixty questions were identified and collated within the following ten themes:

- Life History
- Distribution
- Genetic relationships between subpopulations
- Citizen science potential for low density tails of distribution
- Abundance
- Habitat use
- Behaviour
- Association with environmental factors (Māui dolphin)
- Diet: Prey association, prey availability
- Risk Factors – focused on the following areas:
  - Fine scale relationships of Hector's dolphins around various fisheries
  - Health – other than Toxoplasmosis (this is being considered in a separate series of workshops, although there will be some overlap)
  - Climate change implications
  - Pollutants

The goal of the second workshop was to prioritise these questions/themes, using a ranking system (i.e. high, medium, or lower importance), with discussion and feedback from the expert panel. Multiple rounds of discussion and ranking were undertaken to provide a comprehensive assessment of question/theme priorities.

It was indicated during the workshops that participants would be contacted, where appropriate to clarify and understand their responses, and allow for priority questions to be discussed with researchers who were invited to the workshops but were unable to attend.

DOC and Fisheries NZ will take the priority questions identified through this process to develop the 5-year research plan. Progress against the plan will be reviewed annually.

Appendix 1: Workshop agendas

## Agenda: Māui & Hector Dolphins 5-yr Research Plan Workshops

**Date:** Monday & Wednesday 14+16 December 2020

**Time:** 9:00am – 2:00pm (NZ time)

**Venue:** via Zoom link

### Attendees

**DOC:** Anton van Helden, Dave Lundquist, Hannah Hendriks, Mike Ogle, Ian Angus, Kristina Hillock

**External (NZ):** Alana Alexander (Otago University), Amanda Leathers (WWF), Ben Sharp (Fisheries NZ), Brian Balmer (National Marine Mammal Foundation, USA), Darryl MacKenzie (Proteus), Deanna Clement (Cawthron Institute), Debbie Dietrich (Oregon State university, USA), Erin Breen (Fisheries NZ), Frances Gulland (Marine Mammal Commission, USA), Jim Roberts (Anemone), Jody Weir (Kaikōura Ocean Research Institute Inc), Liz Slooten (Otago University), Rochelle Constantine (University of Auckland), Scott Baker (Oregon State University), Steve Dawson (Otago University), Simon Childerhouse (Cawthron Institute), Tamar Wells (Te Ohu Kai Moana), Tom Clark (Fisheries Inshore New Zealand), Wendi Roe (Massey University), Will Rayment (Otago University)

**Apologies:** Anna Hughes (Fisheries NZ), Craig McPherson (JASCO, Australia), Robin Baird (Cascadia Research, USA), Mark Johnson (Aarhus University, Denmark), Peter Madsen (Aarhus University, Denmark), Jakob Tougaard (Aarhus University, Denmark)

**Facilitator:** Mara Wolkenhauer (DOC, PASI)

### Agenda for Workshop #1 (Mon 14 Dec): **RESEARCH GAPS**

Time	Topic	Lead
9.00-9.30	Welcome / Opening Karakia	Mara
	“Around the virtual table” introduction* Please have your short intro pre-prepared (see below)	All
9:30-9.45	Setting the Scene	
	Terms of References and Expectation	Mara
	Background/context (presentation)	Ian
9.45-10.00	Questions and a short break	All

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<b>10.00-11.00</b>	<b>Discussion around Research Gaps</b> In random breakout rooms of ~5 people, each discussing all 5 points below <ol style="list-style-type: none"> <li>1. Life History</li> <li>2. Distribution</li> <li>3. Genetic relationships between subpopulations</li> <li>4. Citizen science potential</li> <li>5. Abundance</li> </ol>	<b>All</b>
<b>11.00-11.30</b>	<b>Feedback Session A (Points 1-5)</b> Breakout Leads report back to entire group on main finding	<b>Leads</b>
<b>11.30-12.00</b>	<b>Lunchbreak</b>	<b>All</b>
<b>12:00-1:00</b>	<b>Discussion around Research Gaps continued</b> In random breakout rooms, different ones to the morning, again each discussing all 5 points below <ol style="list-style-type: none"> <li>6. Habitat use</li> <li>7. Behaviour (both animal and human)</li> <li>8. Association with environmental factors (Māui dolphin)</li> <li>9. Diet: prey association, prey availability</li> <li>10. Risk Factors (e.g. pollutants, fisheries, climate change)</li> </ol>	<b>All</b>
<b>1.00-1.30</b>	<b>Feedback Session B (Points 6-10)</b> Breakout Leads report back to entire group on main finding	<b>Leads</b>
<b>1:30-2:00</b>	<b>Summary discussion</b> <b>Closing Karakia</b>	<b>All</b> <b>Mara</b>

\*Please prepare a short (1 min) introduction for the group covering the following:

- Your name, role and affiliation
- What drives you to work with dolphin/cetaceans (your passion/values/etc.)?
- What research tools or innovations do you use, or have expertise in that you bring to this discussion?

**Agenda for Workshop #2 (Wed 16 Dec): RESEARCH PRIORITIES**

<b>Time</b>	<b>Topic</b>	<b>Lead</b>
<b>9.00-9.30</b>	<b>Welcome/Karakia</b> <b>Around the virtual table</b> Sharing one thing about you	<b>Mara</b> <b>All</b>
<b>9:30-9.45</b>	<b>Recap from Workshop #1</b>  <b>Expectations for today</b>	<b>Anton/ Kristina</b>  <b>Mara</b>

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<b>9.45-10.00</b>	<b>Questions and a short break</b>	<b>All</b>
<b>10.00-11.00</b>	<b>Discussion around Research Priorities</b> In random breakout rooms of ~5 people, each discussing all research gaps identified at previous workshop Using a spreadsheet compiled based on previous day's discussions	<b>All</b>
<b>11.00-11.30</b>	<b>Feedback Session (how far did you get?)</b> Breakout Leads report back to entire group on main priorities	<b>Leads</b>
<b>11.30-12.00</b>	<b>Lunchbreak</b>	<b>All</b>
<b>12:00-1:30</b>	<b>Discussion around further refining priorities</b> Joint discussion Using a spreadsheet compiled based on previous day's discussions	<b>All</b>
<b>1:30-2:00</b>	<b>Summary discussion</b> <b>Next steps</b> <b>Closing Karakia</b>	<b>All</b> <b>Kristina</b> <b>Mara</b>

## Appendix 2: Terms of reference

### **Hector's and Māui dolphin Threat Management Plan**

#### **Terms of Reference for science planning workshops**

**Monday 14 December and Wednesday 16 December 2020.**

#### TMP Vision and Goal:

Hector's and Māui dolphins are only found in New Zealand. Together they are one of the world's rarest dolphin species.

In response to public and government concern about the effect of human-induced deaths on these dolphins, the Hector's and Māui Dolphin Threat Management Plan (TMP) was developed in 2008. The Māui dolphin component was reviewed in 2012, and a completed review was undertaken in 2019<sup>1</sup>.

*The vision of the updated TMP is:*

*New Zealand's Hector's and Māui dolphin populations are resilient and thriving throughout their natural range.*

Since 2002, Hector's and Māui dolphins have been designated as separate subspecies in recognition of the genetic and morphometric differences between the population found off the west coasts of the North Island (Māui) and the population found primarily around the South Island (Hector's).

The TMP operates on a "subpopulation" scale. This means it differentiates between the two subspecies and recognizes the east, west, north and south coasts of the South Island as separate Hector's dolphin subpopulations, consistent with genetic evidence.

*To reflect this scale of management, the long-term goal for the TMP seeks to ensure that:*

*Hector's and Māui subpopulations are thriving or increasing, supported by an enduring, cohesive and effective threat management programme across New Zealand.*

#### Purpose of workshops:

An effective management and monitoring process for Māui & Hector dolphins must be based on robust information and evidence-based decision-making. The purpose of these workshops, therefore, is to:

- evaluate relevant knowledge gaps,
- identify tools and methods to fill these gaps,
- prioritise research to best advance our understanding of Hector's and Māui dolphins, with a view to informing appropriate future management options for each subspecies.

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<sup>1</sup> <https://www.doc.govt.nz/our-work/protecting-species/protecting-marine-species/our-work-with-maui-dolphin/hectors-and-maui-dolphin-threat-management-plan/review/>

Background:

There are a number of threats to the dolphins, that include but are not limited to, set net and trawl fishing, toxoplasmosis, other disease, seismic surveying, seabed mining, vessel-based tourism, pollution, habitat modification, changes to prey availability and distribution, and climate change. These threats range from those that are well understood and extensively addressed in the updated TMP, such as fishing, through to those where the impact on the dolphins is not well understood, nor well addressed.

*As such, the TMP contains the medium-term research goal:*

***Improve knowledge of poorly understood threats.***

To achieve this goal DOC and Fisheries NZ will develop a 5-year research plan to identify and resource new research, monitoring to improve our understanding of the nature and extent of any poorly understood threats, and ensure existing management measures are achieving the goals and objectives of the updated TMP.

The output of these workshops will be a summary report, focussed around the workshop purpose and built from discussions and advice from workshop participants. This will be provided 3 weeks after the workshop. This output will be used by officials from DOC and Fisheries NZ to refresh a rolling five-year research plan to support progress towards the TMP Vision.

Out of scope:

- Toxoplasmosis – a separate process is being run to address toxoplasmosis due to the multidisciplinary approach needed to address this threat that extends across the terrestrial, freshwater and marine domains.

In scope:

Everything except the threat from toxoplasmosis, in particular:

- Life History
- Distribution
- Genetic relationships between subpopulations
- Citizen science potential for low density tails of distribution
- Abundance
- Habitat use
- Behaviour
- Association with environmental factors (Māui dolphin)
- Diet: Prey association, prey availability
- Risk Factors
  - Fine scale relationships of Hector's dolphins around various fisheries
  - Health – other than Toxoplasmosis (this is being considered in a separate series of workshops – there may be some overlap in thinking however)
  - Climate change implications
  - Pollutants



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Other issues may arise and will need to be considered as these arise.

These workshops are not a forum to advocate for particular management approaches.

In building a rolling five-year research programme, officials anticipate there will be a need to consult directly with invited experts, when additional expertise would assist in clarifying or building upon thinking and planning.

### **Principles of these terms of reference:**

To successfully deliver the purpose of the workshops we have developed the following principles to guide workshop participants.

#### **1. Documents and record keeping:**

- a. The workshops will be run formally with an agenda and with a dedicated chairperson.
- b. Any documents circulated to participants are done so in confidence and are not to be distributed outside the list of participants without the express agreement of DOC (and the author/s?) in writing.
- c. The workshops will be recorded to ensure good record keeping.

#### **2. Participants:**

- a. Workshop participants are expected to comply with the standards of conduct set out in Appendix I.

#### **3. Chairperson:** Mara Wolkenhauer, Principal Advisor Science Investment – Aquatic (independent to this programmes)

#### **4. Conflicts of interest:**

- a. Participants will be asked to declare any “actual, perceived or likely conflicts of interest” before involvement in the workshop is approved, and any new conflicts that arise during the process should be declared immediately. These will be clearly documented in a separate document accompanying the notes of the workshop.
- b. Management of conflicts of interest, including perceived conflicts of interest can be raised through the Chairperson to be considered by the workshop group.

#### **5. Confidentiality and information**

- a. General confidentiality requirements:
  - o Discussions within these workshops should be treated In-Confidence by default, whether explicitly indicated or not.
  - o Any person presenting information to these workshops, whether written or oral, may request that that information be treated as confidential by workshop participants.

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- If there is a desire to release the information, DOC will seek agreement from anyone who supplied confidential information for confidentiality to be waived.
  - Where information is already in the public domain (through no fault of a workshop participant), the confidentiality requirements do not apply to that information.
- b. Privacy Act 2020
- Participants must at all times comply with relevant requirements of the recently updated Privacy Act 2020 and keep information about identifiable individuals confidential.
- c. Official Information Act 1982 and Local Government Official Information and Meetings Act 1987
- All information provided to these workshops will be treated as official information under the Official Information Act 1982 and, subject to the requirements of that Act, may be released to the public if there are no grounds for withholding it. Local Government have similar requirements under the Local Government Official Information and Meetings Act 1987.
  - If information is required to be released under the Official Information Act 1982 it will only be released to the extent necessary.
  - If DOC is considering releasing information under the Official Information Act 1982, DOC will attempt to consult with the person who provided the information before making a final decision on release.

## Appendix I

### Expected standards of conduct

All workshop participants are expected to adhere to the following principles:

1. **Diligence** – Members will use their best endeavours to attend meetings and to prepare thoroughly. Members are expected to participate fully, respectfully, and constructively to discussions and to bring the benefit of their particular knowledge and skills, and their sector, industry or organisation perspective to the table.
2. **Conflicts of Interest** – A conflict of interest will occur when a members' private interest interferes, or appears to interfere, with an issue that faces the workshop. A conflict of interest may also occur when there is a possibility that a benefit may apply to the sector, industry or organisation that they represent. Any situation that involves or may be expected to involve a conflict of interest must be declared immediately to the Chairperson.
3. **Corporate opportunities** – Each participant must not exploit any opportunity that is discovered through access to information within these workshops for their own personal gain or that of the industry, sector or organisation that they represent.
4. **Transparency** – All information should be provided in a manner that is timely, precise and easily understandable.
5. **Fair Dealing** – Members shall deal fairly and respectfully with each other and shall not take unfair advantage of anyone through manipulation, concealment, abuse of privileged information, misrepresentation of material facts, or any other unfair dealing practices.
6. **Advocacy** – Members should avoid actively promoting a standpoint or cause of their organisation or any other group and should rather participate in meetings with the aim of reaching an outcome that is acceptable to all members.
7. **State Services Standards of Integrity and Conduct** – Government staff have statutory demands under the State Services Standards of Integrity and Conduct. In the case of any conflict between the obligations outlined there and the ones in this document, those of the Standards and Integrity of Conduct shall preside.
8. **Alternative obligations** – Any alternative rules or statutes that govern members standards of conduct shall continue to do so, however in any case of conflicting duties the Chairperson must be notified as soon as reasonably possible.

**I acknowledge, I have read and understood and agree to abide by this Terms of Reference.**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

### **Conflict of Interest Declaration**

I, \_\_\_\_\_ <name>, I do/do not have any conflict of interest to declare in relation to these workshops.

Signed \_\_\_\_\_

Date \_\_\_\_\_