Hector’s/Maui dolphin research update: 2018

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Research breakdown

- Hector’s dolphin necropsy (ongoing)
- Toxoplasma in the marine environment
- Spatial risk assessment
- Pilot study – analysis of breath samples
  - Kaikoura Hector’s dolphins (Jody Weir)
- Post mortem markers of bycatch
- Disease surveillance
• Since last meeting:

<table>
<thead>
<tr>
<th>ID number</th>
<th>Age class</th>
<th>Sex</th>
<th>Cause of death</th>
</tr>
</thead>
<tbody>
<tr>
<td>H265</td>
<td>A</td>
<td>F</td>
<td>Toxoplasmosis</td>
</tr>
<tr>
<td>H266</td>
<td>neonate</td>
<td>M</td>
<td>Maternal separation</td>
</tr>
<tr>
<td>H267*</td>
<td>A</td>
<td>M</td>
<td>Predation</td>
</tr>
<tr>
<td>H268</td>
<td>U</td>
<td>M</td>
<td>Open (decomposed)</td>
</tr>
<tr>
<td>H269</td>
<td>A</td>
<td>M</td>
<td>Probable bycatch/pending</td>
</tr>
</tbody>
</table>

* Maui dolphin

Funding: Dept of Conservation, Massey University, Lewis Fitch Foundation
Necropsy study

• 2013 – 2018:
  – 31 necropsies (29 Hector’s; 2 Maui)
  – Cause of death:
    • Disease = 13
    • Known/probable bycatch = 5
    • Possible bycatch = 1
    • Maternal separation = 2
    • Predation = 1
    • Emaciation/parasitism = 1
    • Open = 8
Necropsy study

• 2013 – 2018:
  – 31 necropsies (29 Hector’s; 2 Maui)
  – Cause of death:
    • Disease = 13
      – 2 toxoplasmosis
      – 1 tuberculosis
      – 4 pneumonia
      – 2 kidney disease
      – 2 myocarditis
      – 1 meningitis
      – 1 severe parasitism
Toxoplasma PhD:
Alicia Coupe

• Mussels as bio-indicators
  – Commercial greenshell mussels
  – Environmental study
    • Port Waikato & Raglan sites
    • Archived mussel haemolymph x 2,000
    • Prevalence over time & association with geographic, season, rainfall, cat etc variables
  – Results indicate samples cannot be archived
• Need to repeat sampling program $$

Funding: Massey University Doctoral Scholarship; Education New Zealand; Lewis Fitch Foundation; McGeorge Foundation; Department of Conservation; Massey University Research Foundation.
Spatial risk assessment

• Toxoplasma
  – Cat factors
    • Genotypes, prevalence, shedding, seasonal factors, cat “type”, cat density
    – Seasonal, geographical and hydrological factors
    – Cross checking model: mussel bioindicator study

• Maternal separation
  – Weather events
  – Neonatal health
Other projects:

- Breath study - Kaikoura
  - Jody Weir, Kristene Gedye
  - Sample collection & analysis

- Post mortem indicators of bycatch

- Retrospective study – disease surveillance
  - 50 dolphins, archived tissues
  - *Brucella*, toxoplasma, morbillivirus, herpesvirus, tuberculosis

Funding: Massey University; Department of Conservation; Lewis Fitch Foundation; McGeorge Foundation; Encounter Foundation