

**Institute of Veterinary, Animal and Biomedical Sciences
Massey University**

PATHOLOGY REPORT

Status: Pending
Date: 15/03/2017
Type: Mortality

Submitter	Submission Details
Department of Conservation	Lab. Case/Spec ID: 54334 Submitter's Ref: H263 Date Submitted: 07/03/2017 Date Received: 07/03/2017 Previous Case ID: WMD Case/Spec ID: 7559/1
Animal Details	Epidemiology
Animal ID: H263 Animal Name: W17-04Ch Species: <i>Cephalorhynchus hectori hectori</i> Common Name: Hector's Dolphin Sex Class: Unknown Age Class: Adult Date Died:	Number Dead: Number at Risk: Number Sick: Number Submitted: 1

Growth and Development

Parameter	Result Description	Value	Date Measured	Age Group
Depth of Tail Notch		m	10/03/2017	Adult
Dorsal Blubber Depth		19 mm	10/03/2017	Adult
Eye to Blowhole Length		.145 m	10/03/2017	Adult
Eye to Corner of Mouth Length		.035 m	10/03/2017	Adult
Girth at Anus		m	10/03/2017	Adult
Girth at Eye		m	10/03/2017	Adult
Girth at Flippers		m	10/03/2017	Adult
Girth at Navel		m	10/03/2017	Adult
Height of Dorsal Fin		.09 m	10/03/2017	Adult
Lateral Blubber Depth		16 mm	10/03/2017	Adult
Length of Base of Dorsal Fin		.21 m	10/03/2017	Adult
Length of Flipper		.205 m	10/03/2017	Adult
Length of Flukes		m	10/03/2017	Adult
Snout to Anus Length		m	10/03/2017	Adult
Snout to Corner of Mouth Length		.175 m	10/03/2017	Adult
Snout to Genital Slit Length		m	10/03/2017	Adult
Snout to Origin of Dorsal Fin Length		.685 m	10/03/2017	Adult

Snout to Origin of Flipper Length	.315 m	10/03/2017	Adult
Total Length	m	10/03/2017	Adult
Ventral Blubber Depth	mm	10/03/2017	Adult
Width of Flipper	.086 m	10/03/2017	Adult
Width of Flukes	m	10/03/2017	Adult
Weight	kg	10/03/2017	Adult

DIAGNOSIS

Possible bycatch with shark scavenging

COMMENTS

There are definitive signs of direct human interaction in this dolphin: clean removal of the tail stock and a knife incision along the ventral midline. There are also some signs of possible entanglement in fishing gear: abrasions and lacerations of the leading edges of flippers and dorsal fin, laceration of the snout. The fractures of the head suggest blunt trauma, but, along with the previously listed lesions, the lack of haemorrhage and bruising suggests that this damage was all inflicted after death. The scallop shape of the borders of the missing blubber/soft tissue are consistent shark bites. These tissue margins also did not have any haemorrhage, so it is more likely that the bites were inflicted after death (i.e. scavenging rather than predation). A possible scenario for this case, although not provable, is that this dolphin was hauled up dead in a fishing net and sustained the head fractures during handling. The tail stock may have been removed to help disentangle the dolphin from the net. Anecdotal reports suggest that fishers in some countries open up the abdominal cavities of bycaught cetaceans in an attempt to make them sink when they return them overboard. The bodies don't actually sink once opened, but in this particular case, exposure of the body organs may have resulted in rapid shark scavenging.

Histology will be carried out to evaluate for lesions consistent with drowning, and to assess for disease.

ADDENDUM: Histological evaluation did not indicate any underlying disease. Although not completely reliable due to freezing damage, the lack of cellular response at the assumed knife wound margins suggests that these were inflicted after death. The shark bite wound margins could not be further assessed due to a combination of embedded sand/gravel and tissue artefact.

ANIMAL HISTORY

Found on 11/2/17 in Greymouth

GROSS PATHOLOGY

This dolphin presented frozen and was thawed for 3 days prior to post mortem. Most of the ventral abdominal area and part of the thorax was missing, with the margins of remaining tissue being scalloped, consistent with shark bites. There was no haemorrhage in the transected blubber or muscle, and no bruising in adjacent tissues. The abdominal and thoracic cavities were open, and all the abdominal organs had been removed. The defect margins and body cavities contained a large amount of embedded sand and gravel. Numerous partial and full skin/blubber thickness lacerations were present on the leading edge of the dorsal fin and pectoral fins, and over the snout. Extending caudally from the snout lacerations were several partial thickness lacerations which curved around the melon (possible net marks). There were two reddened abrasions on the leading edge of the left pectoral flipper, and a full thickness laceration of the trailing edge, leaving a 5mm strip of flipper attached at the distal end. The tail stock had been cleanly severed, and there was a full thickness, straight midline incision extending forward from the edge of the missing ventral tissue. The only internal organs that remained were the lungs, heart (with opened pericardial sac) and structures of the head and neck. The lungs were hyperinflated and mottled red/pink on cut surface. There was no intra-airway foam or fluid. There were occasional pin-point white flecks within the parenchyma. No lungworm were found grossly. The oesophagus had been transected just in front of the stomach, and had a zig-zag margin. It contained a small amount of partially digested prey (likely fish flesh) and a single fish bone. The mandibles were fractured at the symphysis and through the body on both sides at approximately the midpoint. The skin and soft tissue overlying these fractures was torn and separated. The palatine bone was fractured into three pieces. One fracture line extended from the snout along the midline of the hard palate to the mid point of the maxillary teeth and then curved back to the maxilla. The second fracture extended from the mid maxillary teeth to the midline. None of the maxillary or mandibular fractures had haemorrhagic margins.

Note: not all morphometric parameters could be measured due to extensive removal/scavenging of tissues.

HISTOPATHOLOGY

Histology summary:

Accurate interpretation of histological lesions in this animal is limited due to freeze-thaw damage. The wound margins do not show any evidence of haemorrhage or inflammatory reaction, suggesting that the wounds were inflicted after death. Changes in the lungs cannot be interpreted as freeze-thaw artefact mimics pulmonary oedema. There was no clear indication of underlying disease, although artefactual tissue damage can obscure this.