

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

**PATHOLOGY REPORT**

**Status:** Final

**Date:**

**Type:** Mortality

Submitter	Submission Details
Don Neale Department of Conservation  Hokitika	Lab. Case/Spec ID: <b>45552</b>  Submitter's Ref: H199 Date Submitted: 18/10/2010 Date Received: Previous Case ID: WMD Case/Spec ID: 6144/1
Animal Details	Epidemiology
<b>Animal ID:</b> H199 <b>Animal Name:</b> W10-06Ch <b>Species:</b> <i>Cephalorhynchus hectori hectori</i> <b>Common Name:</b> Hector's Dolphin <b>Sex Class:</b> Female <b>Age Class:</b> Adult <b>Date Died:</b>	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		.025 m	18/10/2010	Adult
Dorsal Blubber Depth		15 mm	18/10/2010	Adult
Eye to Blowhole Length		.12 m	18/10/2010	Adult
Eye to Corner of Mouth Length		.03 m	18/10/2010	Adult
Girth at Anus		.445 m	18/10/2010	Adult
Girth at Eye		.56 m	18/10/2010	Adult
Girth at Flippers		.85 m	18/10/2010	Adult
Girth at Navel		965 m	18/10/2010	Adult
Height of Dorsal Fin		.1 m	18/10/2010	Adult
Lateral Blubber Depth		14 mm	18/10/2010	Adult
Length of Base of Dorsal Fin		.21 m	18/10/2010	Adult
Length of Flipper		.22 m	18/10/2010	Adult
Length of Flukes		.105 m	18/10/2010	Adult
Snout to Anus Length		1.02 m	18/10/2010	Adult
Snout to Corner of Mouth Length		.15 m	18/10/2010	Adult
Snout to Genital Slit Length		.93 m	18/10/2010	Adult
Snout to Origin of Dorsal Fin Length		.68 m	18/10/2010	Adult

Snout to Origin of Flipper Length	.32 m	18/10/2010	Adult
Total Length	1.38 m	18/10/2010	Adult
Ventral Blubber Depth	16 mm	18/10/2010	Adult
Width of Flipper	.08 m	18/10/2010	Adult
Width of Flukes	.37 m	18/10/2010	Adult
Weight	48 kg	18/10/2010	Adult

## DIAGNOSIS

Brucellosis - metritis, placentitis and fetal pneumonia

## COMMENTS

This was a heavily pregnant, seemingly healthy female. She was in good body condition, with no obvious gross signs of underlying disease. The uterus had ruptured, but this most likely occurred after the animal had died; the torn edges of the uterus did not appear swollen or reddened, nor were there any blood clots or fetal fluids within the abdominal cavity. The gritty sand within the abdomen, uterus and cervix is likely the result of sand making its way through the genital slit after the animal had washed around the surf and onto the beach.

ADDENDUM - W Roe and K Buckle

Further diagnostic testing (histology, immunohistochemistry and PCR) showed bacterial metritis, placentitis and nephritis in the adult female, with positive results for *Brucella*. The fetus also had *Brucella* organisms present in the lungs, along with signs of inflammation. The final diagnosis for this dolphin is therefore Brucellosis. There have been several reports of brucellosis in cetaceans worldwide, and several marine-specific species of this organism have recently been characterised. Studies suggest that infection may be endemic in some populations, but could cause disease and reproductive failure in others. The disease can't be diagnosed by routine post mortem tests, and required development of specific assays. Retrospective testing of archived Hector's dolphin tissues completed in 2016 found one further case of brucellosis (H125).

## ANIMAL HISTORY

Dolphin was brought in to DOC office by Jason Gibbens, who had found it on the beach south of Ruatapu. Dolphin was very freshly dead, with no obvious cause of death. A very light mark around part of the neck/throat (photo #1267) could have been either net/rope (appears to be multistrand?), but equally likely a pressure mark from the moss sack it had been transported in. Some punctures around the belly (left side, photo #1278) were noted-cause unknown. Sea had been generally quite rough over the past week.

## GROSS PATHOLOGY

The animal weighed 48kg, was in good body condition and a fairly good state of preservation (carcass had been frozen). There were no outstanding external abnormalities. There was a large amount of gritty sand within oral cavity.

Examination of the thoracic organs was unremarkable.

The animal was pregnant; the foetus weighed 4.8kg and had a crown-rump length of 40.5cm. The foetus was presented in the correct position with the tail orientated caudally. There was a large, full thickness tear in the right uterine horn, so the foetus was visible upon opening the abdomen. The edges of the torn piece of uterus did not appear overly swollen/thickened or discoloured and there were no blood clots or excess fluid within the abdominal cavity. There was a large amount of gritty sand material within the abdominal cavity, uterus, extending to the cervix and near the genital slit.

There was a 25mm in diameter corpus luteum on the right ovary. A small amount of milk was present in the mammary tissue.

Examination of the remaining abdominal organs was unremarkable.

## HISTOPATHOLOGY

Histo summary - adult female:

- suppurative metritis with gram negative bacteria (*Brucella* present on IHC)
- suppurative placentitis (*Brucella* present in chorionic villi on IHC)
- suppurative nephritis

Histo summary - fetus:

- squame aspiration and interstitial pneumonia (*Brucella* present on IHC)

*Brucella* PCR:

- uterus (frozen) positive on PCR (Wallaceville); thoracic lymph node and uterus positive (Massey)

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