

Institute of Veterinary, Animal and Biomedical Sciences
PATHOLOGY REPORT

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TO: Department of Conservation

Species: Cetacean (1)	Sex: Male	Age: Adult	Breed: Cuvier's Beaked W
ID:	At Risk:	Affected:	Dead: 1
Owner:	Prev. Accn.:	Type: Post Mortem	

HISTORY

Observed washed up dead on beach about 1km south of the beach access to Scott's Ferry Landing.

GROSS FINDINGS

- Total length: 800mm
- Tip of upper jaw to origin of dorsal fin: 4100mm
- Tip of upper jaw to anus: 4000mm
- Tip of upper jaw to genital slit: 3550mm
- Tip of upper jaw to insertion of flipper: 1150mm
- Tip of upper jaw to blow hole: 550mm
- Length of flipper (external): 670mm (internal): 540mm
- Flipper width: 190mm
- Fluke width: 1530mm
- Length of rostrum: 140mm
- Length of gape: 410mm
- Height of dorsal fin: 220mm
- Axillary girth: 2400mm
- Length of throat pleat (left): 500mm
- Length of genital slit: 200mm

This was a subadult male Cuvier's Beaked-Whale in moderate body condition; internal organs were in a reasonably advanced state of decomposition as well as moderate amounts of bloody fluid pooling in soft tissues and body cavities, as well as early blood staining of blubber.

The stomach was devoid of ingesta, while the lungs oozed a moderate amount of blood-stained frothy fluid. Large numbers of *Crassicauda* nematodes were present in both kidneys. The exact location of the nematodes was difficult to ascertain because of post mortem decomposition. However, large clusters of these nematodes could be found just under the renal capsule and appeared to be associated with compression and partial loss of the kidney lobule or lobules. Large clusters of nematodes were observed in what were presumably dilated renal pelvices and possibly intrarenal branches of the ureter. It was difficult to tell if nematodes were present in any of the larger blood vessels of the kidney.

No other abnormalities were noted on gross post mortem.

HISTOPATHOLOGY

Sections of kidney showed multiple cross sections of nematodes within dilated spaces adjacent to the renal parenchyma. In several areas there appeared to be accumulation of necrotic debris associated with the presence of the parasites. Unfortunately, the renal parenchyma itself was too autolysed to glean any further information, such as degree of tubular and glomerular damage or exactly where the parasites were residing.

DIAGNOSIS

Uncertain cause of death/stranding (see comments).
Renal nematode burden

COMMENTS

Unfortunately due to post mortem decomposition, a definitive cause of death could not be established. These animals are so well-insulated that after death internal body temperature can remain elevated, and when combined with the heat during the summer, these animals start to decompose rapidly, which can obscure signs of underlying disease/s.

The animal was not exceptionally skinny and was in reasonably good body condition. He did have an empty stomach indicating he had not eaten for several days.

A notable finding was the fairly large numbers of parasites within both kidneys; these are likely a type of nematode called *Crassicauda*. They can be found in several of the internal organs, including the kidneys. These parasites reside in the blood vessels and other parts of the kidney tissues, and the parasite eggs are excreted into the marine environment via the urine.

In the case of this particular animal, the parasites did appear to have resulted in the loss/damage to many parts of the kidney. However, because of decomposition, histological examination of the kidney was not helpful in determining the degree of damage to the kidneys. However, it is feasible that with the presence of large numbers of parasites within the kidney, there could well have been some adverse effects on the kidney function and health of this animal.

Blood samples to measure kidney function in several fin whales (in the North Atlantic) with heavy concurrent *Crassicauda* burdens in the kidneys indicated quite a marked degree of impaired renal function and death was attributed to the presence of these parasites. However, it must also be mentioned that parasite burdens are common in free-living cetaceans. It has been reported that

Crassicauda nematodes were found in the kidneys of 23 of 35 (66%) humpback whales and around 95% of fin whales caught in the Icelandic coastal whaling operations. So the presence of parasites does not indicate the presence of disease. Blood and other samples as well as histological examination of affected tissues needs to be undertaken to correlate the presence of these parasites with organ damage. Unfortunately, this requires an animal that is either alive or very freshly dead.

File Nos.:

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