

## Institute of Veterinary, Animal and Biomedical Sciences

### PATHOLOGY REPORT

Submitter's Ref.:	Date Sent: 28/05/2014	Accession No.: <b>50930</b>
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TO: Department of Conservation  
Napier

Species: Cetacean (1)	Sex: Male	Age: Juvenile	Breed: Pygmy Sperm Whal
ID: Juvenile male	At Risk:	Affected: 2	Dead: 2
Owner: Department of Conservation		Prev. Accn.: 50929	Type: Post Mortem

#### HISTORY

An adult female was found alive but stranded in the surf near Te Awanga, Hawke's Bay on the 27th May 2014. The animal was euthanased with a gunshot wound to the head. The male calf washed ashore dead not long after the adult female was removed from the beach. Post mortem examination was performed on the afternoon of Wednesday 28th May at the Department of Conservation depot near the Napier Airport.

#### GROSS FINDINGS

- Total length: 2020mm
- Upper jaw to origin of dorsal fin: 860mm
- Tip of upper jaw to anus: 1400mm
- Tip of upper jaw to genital slit: 850mm
- Length of genital slit: 90mm
- Tip of upper jaw to insertion of flipper: 420mm
- Tip of upper jaw to blowhole: 220mm
- Length of gape: 130mm Dorsal fin height: 100mm Dorsal fin length: mm  
Fluke width: 550mm Deep of notch: 20mm
- Flipper length (internal): 220mm (external): 300mm
- Flipper width: 140mm

This was a juvenile male in good body condition, with good blubber thickness and hypaxial/epaxial muscle mass. He was in a good state of preservation within minimal skin sloughing/slippage. The perianal skin was stained with dark brown viscous material.

On cut surface the lung parenchyma was deep red and oozed a large amount of white frothy fluid, which was also present throughout the entire trachea.

Both the squamous and glandular portions (compartments 1 and 2) of the stomach contained ~50 nematodes as well as ~6 squid beaks (about half the size to those observed in the adult female) and a similar number of squid or fish lens. Nematodes measured up to 80-100mm in length and floated free within the stomach lumen. The distal intestine contained multiple segments of well-formed dark brown faeces.

Examination of the acoustic structures of the head (acoustic fat, pterygoid sinuses, periotic fat and the melon) revealed no obvious gross abnormalities. The pterygoid sinuses were empty and no parasites were observed. No haemorrhages or blood clots were observed in the brain case or over/in the meninges.

No other abnormalities were noted on gross post mortem

HISTOPATHOLOGY Pending

#### DIAGNOSIS

Unknown cause of stranding  
Pulmonary oedema

**COMMENTS**

This was a juvenile male in good body condition and in a good state of preservation. On visual inspection there was no indication of major trauma or an underlying disease process.

The immediate cause of death is likely pulmonary oedema (fluid in the lung). This is likely due to the stress of stranding and progressive shock as blood starts to pool in the lungs and the cardiovascular system starts to shut down. This results in fluid from the bloodstream (minus the red blood cells) being squeezed/forced out into the small airways of the lung. This fluid then mixes with the small amount of fluid normally present in the lung (this is called surfactant) and the result is the formation of white frothy/foamy fluid and this is termed pulmonary oedema. This will prevent proper oxygen and carbon dioxide exchange in the lung. Why this animal stranded is not clear. If this juvenile male was the offspring of the adult female that was euthanased, then it is possible he was lingering not far offshore and perhaps got into trouble in shallower water.

Parasites were observed in the stomach but it is common to find parasites in various organs in wild cetaceans. Since this animal was in good body condition it seems unlikely the stomach parasites were doing this animal too much harm. It has been suggested that these nematodes can in fact aid in digestion by invading the soft tissues of prey items. Several squid beaks were found in the stomach of this whale. Squid beaks are very difficult for the whale to completely digest and are often retained in the stomach and then regurgitated after a period of time. There seems to be some debate as to how long squid beaks are retained in the stomach so it is difficult to say how long ago this whale had eaten.

Injuries reportedly caused by seismic-related activity are seen in the echolocation producing and receiving structures of the head and brain. These include haemorrhages and blood clots in the air-sinuses, the fatty tissue around the lower jaw and ears, the melon and the brain. A detailed dissection of these structures was carried out on this whale and none of these changes were observed.

Histological (microscopic) examination of many of the internal organs will be performed to see if that can reveal any more information as to why this animal may have stranded.

File Nos.:

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