

## **Southern Right Whale Point Bolingbroke, South Australia 2013**

(This is a summary of the information collected)

First seen washed up: 30 July 2013

Reported: 30 July 2013 by Nathaniel Staniford, Department of Environment, Water and Natural Resources, South Australia

Location: Point Bolingbroke, South Australia. Precise locality is 2.7 km NNE Point Bolingbroke, SA. 34° 31' 18.1" S, 136 ° 06' 00.5" E

Collected: 2–8 August 2013 by David Stemmer, Ikuko Tomo, Mara Buss, Tania Cann, Garrie Rees, Sue and Robert Lawrie.

SA Museum temporary accession number: 13.057

Collected specimens: Full skeleton, two testes, left side of baleen, two ear plugs (formalin), kidney (formalin), cyamids (formalin), series of tissues fixed for pathology (liver, kidney, lung, skin wounds), series of tissues frozen for genetics, series of tissues frozen for toxic contaminants.

State of decomposition: probably Geraci 2 when first washed up but deteriorated to Geraci 3 by the time of necropsy.

### **Biological details**

Total length: 11.2 m

Sex: male

Age: Juvenile (skeleton physically immature, testes small, ~30 cm long)

Callosity pattern: It was not possible to photograph the callosities until the carcass was pulled out of the water (numerous white pointer sharks around the carcass in the water!). The photos taken may not be adequate for individual identification because the skin/callosities were damaged.

Circumstance of death: Other Unintentional (vessel collision), according to SA Museum system for categorising circumstance of death for cetaceans. The circumstance of death was assigned based on the severe, deep sub-dermal haemorrhaging (blunt trauma) and deep parallel injuries possibly consistent with propeller wounds.

### **Pathology details**

A detailed pathology report has been prepared by Ikuko Tomo (attached). This includes gross pathology findings and evidence for cause of death.

## Post Mortem Examination

Southern right whale (*Eubalaena australis*) (SA Museum accession number 13.057)

Reported: 30 July 2013 by Nat Staniford (DEWNR)

Dissected: 3 -8 Aug 2013

Place: Point Bolingbroke

Juvenile male, 11.2 m body length

### **Gross Macroscopic findings**

#### General body condition

This juvenile male Southern right whale was in relatively good body condition. The blubber thickness on the dorsal surface was 15cm and 18cm on the ventral surface. Skin (epidermis) had started to peel off.

There were multiple linear lacerations on the ventral posterior surface and left ventral anterior surface. Width of posterior ventral lacerations were around 30- 60cm, depth around 25 -40 cm. Width of anterior ventral lacerations were around 30cm, depth around 40-50cm. Those lacerations were almost parallel.

There are multiple shark bites on the body. Sharks were around and an increase of bite marks had been observed by local people since the whale stranded on the beach.



Lateral view with ventral side uppermost, showing multiple linear lacerations at posterior



Lateral view with ventral side uppermost showing posterior area, four yellow linear lacerations. Parts of these wounds were probably caused by sharks.



Posterior view with ventral side up



Left lateral view with dorsal side up, showing two linear lacerations on the left ventral head anterior to the flipper, and several wounds on the left side of the caudal peduncle (arrow:lacerations)

Sub dermal and musculoskeletal system

The muscles had started to softened and a small amount of gas had accumulated.

The extensive subdermal haemorrhaging was found in the following places:

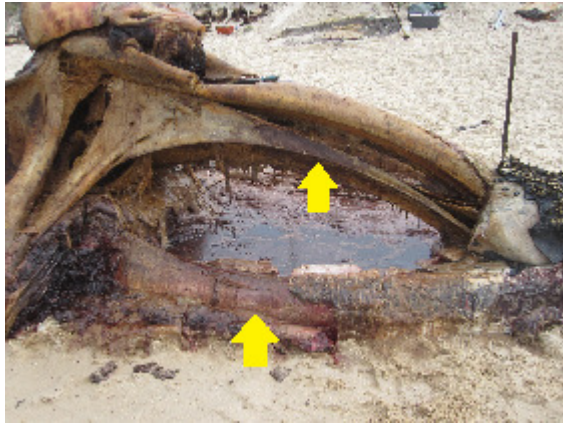
1. Centre of right mandible and maxilla (locally deep and severe) and from the occipital bone to anterior side of flipper (extensive and severe)
2. Left corner of mouth to blowhole (locally severe)
3. Dorsal side from posterior of the blowhole to near tail flukes (severe at anterior, mild towards posterior)
4. Left lateral side, from posterior of the flipper to near anus (extensive and moderate)

Some of the haemorrhaging extended as deep as bone

1. Centre of right maxilla (locally severe)
2. Centre of right mandible
3. Right side of occipital bone



Dorsal middle of the body, part of blubber shows the sign of redness with muscle that had begun decomposing.



Right mandible showing redness on the bone surface (arrows: focal haemorrhaging)



Right occipital posterior view, showing redness on the right ventral occipital bone surface (arrow: focal haemorrhaging)

### Body cavities

Organ positions appeared normal.

The amount of fluid in the body cavities could not be determined because of seawater inflows.

### Liver

No significant findings

### Stomach and intestines

No significant findings

No stomach contents were found. The intestine contained small amounts of yellow slimy material.

### Kidney

No significant findings

Lobular structure was good. Medulla cortex borders were defined. Interstitial connective tissues between lobes were slightly loose.

### Testes

No significant findings

Parenchyma was slightly soft.

### Trachea

Mucous membrane was red.

### Lung

Generally lung parenchyma was sunken and dark red. There was no exudative fluid from parenchyma, and the lungs contained a small amount of air. There was no froth in the bronchi.

### Heart

No significant findings

There was no blood in the heart.

### Pancreas, Spleen, Adrenal, Thyroid and Brain

Not examined

### **Gross Macroscopic Diagnosis**

1. Centre of right mandible and rostrum: locally severe subdermal haemorrhaging extended to the bone surface
2. Right occipital process to anterior side of flipper: locally extensive severe subdermal haemorrhaging
3. Left maxillaries at the corner of mouth and near blowhole : locally extensive severe subdermal haemorrhaging
4. Dorsal side of the body between blowhole and tail flukes: extensive mild to severe haemorrhaging, severe on anteriorly and mild on posteriorly
5. Left lateral body: moderate to severe subdermal haemorrhaging

### **Comment**

Based on the reproductive organ size (Moore et al. 2004) and skeletal development, this animal is classified as juvenile.

Multiple linear lacerations were found on the ventral posterior surface and left ventral anterior surface. Most of the laceration surfaces were scavenged and lost original shapes and size. The lacerations on the left neck area were associated with locally extensive subdermal haemorrhaging, indicating they may have occurred prior to death.

Blunt trauma on the mandible, dorsal to left lateral trunk, appeared to have occurred prior to death. Because of the decomposition of this animal, acute inflammatory reaction urged muscle break down quickly. Additionally it should be noted that strong force applied by front-end loader to place the whale on the beach prior to dissection, which may have caused further breakdown of the soft tissues.

The nature of this trauma is not evident, however a very strong impact including vessel collision should be considered a distinct possibility. Northern right whales were reported their mortality and serious injury were often caused by human activities, particularly commercial fishing and shipping (Knowlton and Kraus 2001).

Generally all organs I examined appeared to have no significant change. No infectious or inflammatory conditions were identified.

Selective tissues will be examined by histopathology.

### **Cause of death**

Extensive severe blunt trauma

Ikuko Tomo B.V.Sc, M.V.Sc (Pathology)

Literature cited

Moore, M.J., Knowlton, A.M., Kraus, S.D., McLellan, W.A. and Bonde, R.K. (2004), Morphometry, gross morphology and available histopathology in North Atlantic right whale (*Eubalaena glacialis*) mortalities (1970 – 2002), Journal of Cetacean research Management 6(3), p 199-214

Knowlton, A.R. and Kraus, S.D (2001), Mortality and serious injury of northern right whales(*Eubalaena glacialis*) in the western North Atlantic Ocean, Journal of Cetacean research Management 2, p193-20