



## Alaska Veterinary Pathology Services (AVPS)

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### BELUGA WHALE NECROPSY REPORT

**SPECIES:** Beluga Whale (*Delphinapterus leucas*)

**SEX:** Male    **AGE:** approx 30 yrs based on length

**REPRO STATUS:** Mature

**ANIMAL ID/NAME:** 2015066 2014-CIB

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**PERMIT NO.** 932-1905-01 / MA-009526-1 26-1 MMHSRP Person filing the level A: K. Burek-Huntington

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**CASE NUMBER:** TBA

**1<sup>st</sup> OBSERVED DATE:** 6/12/2015

**NECROPSY DATE:** 6/13/2015

**TRIM DATE:**

**DATE FINAL:**

**PATHOLOGIST:** KATHY BUREK

**NUMBER OF BLOCKS:**

**PENDING:**

### GROSS DIAGNOSIS:

- 1.) Chronic injury, dorsal midline, most likely infected transmitter site
- 2.) COD – septicemia due to infection of the injury
  - a. fibrinosuppurative pleuritis and abscessing pneumonia
  - b. Myocarditis, suppurative, focal
  - c. embolic nephritis, suppurative with abscessation
  - d. lymphadenitis, suppurative with abscessation, multifocal pleural cavity
- 3.) Acute net injury to the flukes (possibly terminally caught in a net)
- 4.) Chronic defects in the flippers and fluke due to very old net injury.
- 5.) Poor body condition

### BRIEF HISTORY:

This approx 20 yrs, Male Beluga Whale (*Delphinapterus leucas*), was stranded at (61.0634; 151.14061666) on 6/12/2015. It was reported by: Randy Standifer It was necropsied on 6/13/2015 and was not previously frozen. The carcass quality was Moderate. The necropsy was performed on the beach by KATHY BUREK assisted by Russ Andrews and Kelsey Longson. At the time of the stranding, the weather was warm and calm. Mr. Standifer reported the stranding on Friday night around 5:40pm. It was located just outside of Tyonek itself and was accessible by 4W drive vehicle.

### MEASUREMENTS

meas1 subform1				
Morph or tissue	Description	Specific	Value	Unit
Blubber Thickness	muscle to base of skin	VAX	87	mm
Blubber Thickness	muscle to base of skin	LAX	37	mm
Blubber Thickness	muscle to base of skin	DAX	60	mm
Body condition	1=Robust; 2=good; 3=average; 4=poor; 5=Emaciated		4	
Fluke width			103	cm
Girth - Anal		32 cm 1/2 gir5h	64	cm
Girth-AX	Axillary girth	110 1/2 girth	220	cm
SL	Straight length		428	cm

- 19 Weight of portion of longissimus dorsi (1st to 12th lumbar vertebrae -lateral to vertebral spinous process)

37 lbs / 16.8 kg

### EXTERNAL EXAMINATION

<b>CARCASS CLASSIFICATION:</b>	<b>BODY CONDITION:</b>
2.5 – slight autolysis ; Previously frozen? was not	4 Poor

### GROSS NECROPSY FINDINGS:

Physical Exam: This animal was located high up on the beach right off the road in Tyonek. Some of the blubber had been removed for subsistence use primarily from the right lateral side to just across dorsal midline from mid thorax back. The animal had a good blubber layer, however the epaxial muscle was atrophied indicating nutritional stress for a period of time before death.

There was one well circumscribed area of ulceration on the left mid thorax. (arrow) Below that



lesions, there were three parallel rake marks of about 1.3 cm apart.



The tip of the rostrum, the skin had been abraded off.

On the right side of the head just above the upper jaw line, there were two puncture wounds (arrows) These did not progress into the underlying tissue (inconsistent with gunshot wound).



There were also multiple, irregular scratch marks in a curved pattern over the melon (Shark? Orca? Bird scavenging – most likely). In the dermis underlying these lacerations, there was some associated hemorrhage.



There was a large, irregular, 55 x 15.8 (widest) -7.2 (narrowest) defect on the dorsal midline just cranial to the dorsal ridge region. It measured and was characterized by very well healed defects or lacerations with several edges of skin having smooth edges. Between and under some of the defects was black necrotic, friable tissue. The pattern of the defect including several parallel and slightly curved lines going longitudinally and then three major indented areas running transversely (arrows)



Dorsal wound initially (photo by Randy Standifer)



There were several areas of very well healed defects on the right pectoral flipper (Star) as well as the trailing edge of the fluke.

These old defects along the fluke were triangular in shape (star).

In addition, there were fresh, parallel lacerations consistent with new net injuries along the trailing edge of the fluke. When regular, these fresh areas of damage were approx. 2.7 cm apart.



On the abdomen, there were multiple roughly round erosions.



SQ: The blubber in general was firm, white and of normal to slightly decreased thickness. The lateral Axillary blubber was much thinner than dorsal or ventral



Below the dorsal midline defect, the SQ tissue and muscle was discolored black to grey with pockets of purulent material. Below the defect on the right lateral thorax below the round ulcerative lesion, the SQ tissue looked very similar. Both sites of fibrinosuppurative steatitis, smelled of necrotic tissue.



Dorsal steatitis



Lateral pocket of necrotic tissue.

Body cavities: The abdomen contained a large amount of serosanguineous fluid which poured from the body upon opening.



The pleura on the right side of the body was covered with a very thick, roughened, friable layer of fibrin and purulent debris (White arrow). The heart seemed large for the size of the thoracic cavity.

Musculoskeletal: The epaxial muscles were much atrophied resulting in a “dip” of the outline on either side of the dorsal midline. There was one defect through the epaxial muscle just to the right of the dorsal midline, left side. There was no hemorrhage associated with this defect (scavenging)



Respiratory: The blow hole was WNL. The larynx was congested. The tracheal mucosa was reddened but no foam was present.

The right lung pleura was coated in a shaggy, fibrinous and purulent membrane (see above



underbody cavity). The lungs bilaterally had several raised masses which on cut section were abscesses filled with caseous, yellow to green purulent material. The lung parenchyma in general was much mottled red and black.

Cardiovascular: The heart seemed quite big and did not have fat at the base of pericardium. In the interventricular septum, there is a focal accumulation of purulent material (**myocarditis, suppurative, focal.**)

Lymphoid: The hilar lymph nodes, caudal mediastinal were filled with greenish, thick, odiferous purulent material (**lymphadenitis, suppurative with abscessation, multifocal pleural cavity**).



Endocrine: The thyroid and adrenal glands were identified and found to be within normal limits (WNL).

Urinary: Each of the kidneys had multiple (5-10) firm to ossified nodules within the cortex. On cut section, these contained partially mineralized nematode parasites consistent with *Crassicauda gilikiana*. Several of these nodules also exuded abundant light pink creamy purulent material (**embolic nephritis, suppurative with abscessation**). The urinary bladder contained clear yellow urine.



Liver: the liver was firm, dark brown and of normal consistency.

Digestive: The esophagus was normal. The stomach was empty except for a very small amount of brown tinged fluid. The rest of the GI tract was also primarily empty. The feces were quite liquid and dark brown. No parasites were seen. No tumors or other pathology.



Reproductive: The penis and testes were examined and were WNL.

Nervous system: The brain was firm and of normal consistency and color. It was collected in pieces through the foramen magnum.

**CARCASS DISPOSITION:** Left on the beach.

**SAMPLES SUBMITTED IMMEDIATELY AND WHERE:** Anaerobic and aerobic (Amies) swabs as well as the Pleural Amies swab were submitted to Athens Diagnostic Lab on Monday (6/15/15).

**ANCILLARY DIAGNOSTICS:**

Photos X – Russ Andrews Camera

**COMMENTS:** This animal had chronic severe infected wound over the dorsal midline that had resulted in generalized debility and septicemia. I assume this was terminally the COD. The septicemia was indicated by the severe inflammation in the chest cavity (pleuritis), abscessation of the lung, heart muscle and kidneys. He was also in poor body condition with wasting of the epaxial muscles. Because of the pattern of this injury, we did wonder if it could be an old satellite tag site, but it seemed too far forward, so moved on to thinking it could be an old propeller wound. After consultation with Tamara McGuire, it appears this is a known animal which had had a sat tag at this site that appeared to have been getting infected over the past year. It is odd that there would be this reaction so long after the tag site had healed. LGL personnel are compiling historical photos from this animal.

He also had sections of the pectoral fins and fluke that had been removed indicative of old entanglement in a net. I would assume looking at this well healed wounds that that very well could have occurred during the capture for the tagging. He did also have new linear lacerations of particularly the fluke which would be consistent with a recent entanglement in a fine gauge net such as a fishing net. This however was not the most severe and significant finding, so was not categorized as cause of death (COD). If there had been abundant pulmonary edema or emphysema, we would have had to consider this as a possible cause of death.

Samples were collected for contaminants archiving, museum archives, prey analysis, aging, and disease agent work ups. See attached inventory list. Full histopathology will be performed as well as influenza PCR, viral cultures and other diagnostics indicated by histopathology. This was an unusually fresh animal, so should yield some good data.