Why Marine Mammals Strand

• Unknown
• Weakened / diseased
• Environmental influences (tides, currents, etc.)
• Foraging (eg. belugas in Turnagain Arm, Cook Inlet)
• Echolocation distorted
• Escape predators
• Human interference (injuries, noise, boat collision, etc.)
Educational Value from Strandings

Communicates messages to scientists and the public

Sick animals – Disease information

Calves and pups – Moms feeding, abandonment, etc.

Entanglements – Marine debris danger

Unusual mortality – Species distribution, population health, marine health

Dead animals – Life history, basic biology age, growth, fecundity, etc.
Stranded Beluga is Reported
CAN Access Stranded Belugas
CAN’T Access Stranded Belugas
Stranding Response
NOAA Enforcement
Stranding Response - Necropsies = Field
Stranding Response - Necropsies = Lab
Cook Inlet Beluga Stranding Events 1999-2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Live</th>
<th>Dead</th>
</tr>
</thead>
<tbody>
<tr>
<td>99</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>00</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>01</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>02</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>03</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>04</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>05</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>07</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>08</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>09</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>4</td>
<td>4</td>
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</table>
Cook Inlet Beluga Strandings
Events  1999-2010

129

17

Live
Dead
## Dead beluga stranding response

<table>
<thead>
<tr>
<th>YEAR</th>
<th>DEAD BELUGA</th>
<th>RESPONSE SAMPLING</th>
<th>RESPONSE NECROPSY</th>
<th>NO RESPONSE (FLOATER)</th>
<th>UNCONFIRMED</th>
<th>PERCENT RESPONSE</th>
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<tbody>
<tr>
<td>1999</td>
<td>10</td>
<td>4</td>
<td>4</td>
<td>2 (1)</td>
<td></td>
<td>89</td>
</tr>
<tr>
<td>2000</td>
<td>13</td>
<td>8</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>67</td>
</tr>
<tr>
<td>2001</td>
<td>10</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>2002</td>
<td>13</td>
<td>6</td>
<td>0</td>
<td>3(3)</td>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>2003</td>
<td>20</td>
<td>17</td>
<td>0</td>
<td>3(2)</td>
<td>0</td>
<td>89</td>
</tr>
<tr>
<td>2004</td>
<td>13</td>
<td>6</td>
<td>0</td>
<td>7(5)</td>
<td>0</td>
<td>75</td>
</tr>
<tr>
<td>2005</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>2006</td>
<td>8</td>
<td>1</td>
<td>2</td>
<td>5(4)</td>
<td>0</td>
<td>75</td>
</tr>
<tr>
<td>2007</td>
<td>15</td>
<td>6</td>
<td>4</td>
<td>2(0)</td>
<td>2</td>
<td>77</td>
</tr>
<tr>
<td>2008</td>
<td>11</td>
<td>5</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>2009</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>2010</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>3(2)</td>
<td>0</td>
<td>50</td>
</tr>
</tbody>
</table>
Belugas Involved in Stranding Events

Year | Total Belugas
--- | ---
1999 | 78
2000 | 40
2001 | 10
2002 | 13
2003 | 121
2004 | 13
2005 | 14
2006 | 21
2007 | 15
2008 | 62
2009 | 24
2010 | 17
Cook Inlet Beluga Stranding Events by month 1999-2010

Stranding Events

- January: 2
- February: 0
- March: 2
- April: 4
- May: 7
- June: 14
- July: 25
- August: 35
- September: 34
- October: 20
- November: 2
- December: 1
Cook Inlet Beluga Stranding Events by Gender 1999-2010

- Female: 22
- Male: 23
- Unknown or Mixed: 101

- Unknown or Mixed Gender Events
Cook Inlet Beluga Stranding Events by Age Class 1999-2010

- Adult: 57 events
- Subadult: 9 events
- Yearling: 2 events
- Calf: 22 events
- Unknown or Mixed Age Class Events: 56 events
Cook Inlet Beluga Condition
1999-2010

- Moderate Decomposition: 52
- Advanced Decomposition: 35
- Fresh Dead: 20
- Alive: 22
- Unknown: 11
- Mummified/Skeletal: 6

Total: 114
<table>
<thead>
<tr>
<th>YEAR</th>
<th>DATE</th>
<th>LOCATION</th>
<th>BELUGAS</th>
<th>KILLER WHALES PRESENT</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>1999</td>
<td>29 August</td>
<td>Turnagain Arm</td>
<td>58 – 70</td>
<td>REPORTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9 September</td>
<td>Turnagain Arm</td>
<td>12 – 13</td>
<td>No</td>
<td></td>
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<tr>
<td>2000</td>
<td>27 August</td>
<td>Turnagain Arm</td>
<td>08</td>
<td>No</td>
<td></td>
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<td></td>
<td>24 September</td>
<td>Turnagain Arm</td>
<td>15 – 20</td>
<td>(unconfirmed) WITNESSED</td>
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</tr>
<tr>
<td></td>
<td>24 October</td>
<td>Turnagain Arm</td>
<td>01–02</td>
<td>No</td>
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<td>2001</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>2003</td>
<td>18 April</td>
<td>Turnagain Arm</td>
<td>01–02</td>
<td>(unconfirmed) No</td>
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<tr>
<td></td>
<td>28 August</td>
<td>Turnagain Arm</td>
<td>46</td>
<td>No</td>
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<tr>
<td></td>
<td>06 September</td>
<td>Turnagain Arm</td>
<td>26</td>
<td>No</td>
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<tr>
<td></td>
<td>14 September</td>
<td>Turnagain Arm</td>
<td>32</td>
<td>No</td>
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<tr>
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<td>06 October</td>
<td>Turnagain Arm</td>
<td>04–09</td>
<td>(unconfirmed) No</td>
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<tr>
<td></td>
<td>17 October</td>
<td>Ship Creek</td>
<td>01</td>
<td>No</td>
<td></td>
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<tr>
<td>2004</td>
<td>-</td>
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<td>-</td>
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</tr>
<tr>
<td>2005</td>
<td>24 August</td>
<td>Knik Arm</td>
<td>07</td>
<td>(picture)</td>
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<tr>
<td>2006</td>
<td>12 September</td>
<td>Knik Arm</td>
<td>12</td>
<td>(picture)</td>
<td>No</td>
</tr>
<tr>
<td>2007</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>2008</td>
<td>7 August</td>
<td>Knik Arm</td>
<td>30</td>
<td>(picture)</td>
<td>No</td>
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<tr>
<td></td>
<td>September</td>
<td>Turnagain Arm</td>
<td>17-19</td>
<td>(picture)</td>
<td>No</td>
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<tr>
<td>2009</td>
<td>22 August</td>
<td>Knik Arm</td>
<td>17–20</td>
<td>(picture)</td>
<td>No</td>
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<tr>
<td>2010</td>
<td>21 August</td>
<td>Knik Arm</td>
<td>11</td>
<td>(picture)</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>29 August</td>
<td>Knik Arm</td>
<td>02</td>
<td>(unconfirmed) No</td>
<td></td>
</tr>
<tr>
<td>YEAR</td>
<td>DATE</td>
<td>LOCATION</td>
<td>GENDER</td>
<td>SIZE</td>
<td>OBSERVATIONS</td>
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<td>------</td>
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<td>--------</td>
<td>--------</td>
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<tr>
<td>1999</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>25-Sep</td>
<td>Turnagain Arm, Indian Creek</td>
<td>Female</td>
<td>12'3&quot;</td>
<td>Lactating, bite marks, hemorrhaged</td>
</tr>
<tr>
<td></td>
<td>26-Sep</td>
<td>Turnagain Arm, Bird Creek</td>
<td>Female</td>
<td>11'9&quot;</td>
<td>Lactating, bite marks, hemorrhaged</td>
</tr>
<tr>
<td>2001</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>25-Aug</td>
<td>Knik Arm, north of Port MacKenzie</td>
<td>Male</td>
<td>15'7&quot;</td>
<td>Bite marks, hemorrhaged</td>
</tr>
<tr>
<td>2004</td>
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<td></td>
</tr>
<tr>
<td>2007</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>19-Sep</td>
<td>Turnagain Arm, near Hope</td>
<td>white</td>
<td></td>
<td>Witness reported attack by two killer whales</td>
</tr>
<tr>
<td></td>
<td>28-Sep</td>
<td>Turnagain Arm, Bird Creek</td>
<td>Unidentified</td>
<td>12'9&quot;</td>
<td>Most of the blubber was stripped</td>
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<tr>
<td>2009</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>-</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
**MARINE MAMMAL STRANDING REPORT - LEVEL A DATA**

**LOCATION OF INITIAL OBSERVATION**
- State: [ ]
- County: [ ]
- City: [ ]
- Body of Water: [ ]
- Locality Details: [ ]
- Lat (DD): [ ]
- Long (DD): [ ]
- Actual [ ]
- Estimated [ ]
- How Determined: [ ]
- GPS [ ]
- Map [ ]
- Internet/Software [ ]

**OCCURRENCE DETAILS**
- Restrand [ ]
- Other [ ]
- Findings of Human Interaction [ ]
  - YES [ ]
  - NO [ ]
  - Could Not Be Determined (CBD) [ ]
- Other Findings Upon Level A: [ ]
  - YES [ ]
  - NO [ ]
  - Could Not Be Determined (CBD) [ ]

**CONDITION AT INITIAL OBSERVATION**
- Alive [ ]
- Dead [ ]
- Dead during Transport: [ ]
- Dead at Site: [ ]
- Dead transferred to rehabilitation: [ ]
- Dead at Site: [ ]
- Dead during transport: [ ]

**CONDITION/DETERMINATION**
- Sick [ ]
- Injured [ ]
- Out of Habitat [ ]
- Deemed Releasable [ ]
- Abandoned/Orphaned [ ]
- Inaccessible [ ]

**MORPHOLOGICAL DATA**
- Age Class: [ ]
- Sex: [ ]
- Whole Carcass [ ]
- Partial Carcass [ ]
- Straight length: [ ] cm
- Actual [ ]
- Estimated [ ]
- Weight: [ ] kg
- Actual [ ]
- Estimated [ ]

**PHOTO/VIDEOS TAKEN**
- Yes [ ]
- No [ ]

**TAG DATA**
- Present at Time of Stranding: [ ]
- Applies during Stranding Response: [ ]
- Present: [ ]

**TAGS**
- Present: [ ]
- Applied: [ ]
- ID: [ ]
- Color: [ ]
- Type: [ ]
- Placement: [ ]
- (Check One): [ ]
- LF [ ]
- LR [ ]
- RR [ ]

**CARCASS STATUS**
- Left at Site [ ]
- Buried: [ ]
- Frozen for Later Examination: [ ]
- Other: [ ]

**SPECIMEN DISPOSITION**
- Scientific collection: [ ]
- Educational collection: [ ]
- Other: [ ]

**NEOCHLORISES**
- No: [ ]
- Yes: [ ]
- Limited: [ ]
- Complete: [ ]

**COMMENTS**

**DATE:**
- Year: [ ]
- Month: [ ]
- Day: [ ]

NOAA Form IS-664 (rev. 2007) OMB No.0649-0178, Expires 12/31/2010

PLEASE USE THE BACK SIDE OF THIS FORM FOR ADDITIONAL REMARKS.
Beluga Whales in Cook Inlet

- Site data – what, where, when
- Morphological data – length, fluke width, color, girth, blubber thickness
- Ageing – jaw and teeth
- Genetics – skin
- Diet and fatty acid analysis – stomach and full depth blubber
- Contaminants:
  - AMMTAP: blubber, kidney, liver
  - Additional: heart, muscle
- Parasite analysis – kidney
- Histology – heart, intestine, liver, lung, muscle, etc.
- Reproduction – reproductive tract
- Animal health – feces, urine, upper intestinal fluid, etc.
Alaska Veterinary Pathology Services (AVPS)
Kathy Burek, D.V.M., M.S.
Diplomate, A.C.V.P.
23834 The Clearing Dr. / Eagle River, AK 99577
Voice: (907) 696-3704 / Fax (907) 696-3565 / Cell 242-2566 / Email: AVPS.KBH@gmail.com

STRANDING NETWORK CETACEAN NECROPSY REPORT

SPECIES: Beluga whale (Delphinapterus leucas)
SEX: Female
AGE: Adult
REPRO STATE: Recently gave birth
ANIMAL ID/NAME: KBH-062810-01
CONTACT: Barbara Mahoney
VETERINARIAN: Kathy Burek
CLINIC: National Marine Fisheries Service
ADDRESS: 222 W. 7th Ave #43
Anchorage, AK 99513-7572
PH: (907) 271-3448
FAX: (907) 271-3030
Email: Barbara.Mahoney@noaa.gov
PERMIT NO. 932-1905-00/MA-009526 MMHSRP
Chain of custody forms: no; Human interaction form no
Level A form completed? Yes Person filing the level A: Barbara Mahoney

GROSS DIAGNOSIS:
1.) Possible trauma;
2.) Poor body condition
3.) Mild Crassicauda giliakiana (incidental)

BRIEF HISTORY:
This Adult, Female Beluga whale (Delphinapterus leucas), was stranded at Pt. Possession (61.0118; -150.4773056) on 6/26/2010. It was reported by: Betty Gilchrist as a “red beluga” She also reported a white blooby carcass nearby which turned out to be an autolyzed shark. The beluga was necropsied on 6/30/2010 and was not previously frozen. The carcass quality was Poor - Advanced autolysis. The necropsy was performed on the beach by Kathy Burek assisted by Barbara Mahoney, and Jennifer Dushane. At the time of the stranding, the weather was partly sunny to rainy and tidal fluxes had been moderately high and were reducing.

MEASUREMENTS (cm unless indicated)
Tooth count: UpL - Not counted; Up R - not counted ; Low L= ___ Low R = 5 (missing 3-7)
Strandings

Cause of death: UNKNOWN
Strandings

Cause of death: KILLER WHALE
Response Completed
Marine Mammal Strandings

What to do:

• Notify proper authorities
  • NMFS, NOAA Enforcement, Alaska SeaLife Center, State Troopers

• Provide information: date, time, location, identification, pictures
Marine Mammal Strandings

NOAA Hot Line: 800 – 853 – 1964

NOAA Enforcement: 907 – 271 – 3021

Alaska SeaLife Center: 888 – 774 – SEAL (7325)

NMFS cell phone: 907 – 360 – 3481
THANK YOU TO THE THOSE WHO REPORT, COLLECT, AND ASSIST

Many individual boaters, drivers, hikers, homeowners, hunters, and pilots, who live in and around Cook Inlet report stranding events when they happen

STRANDING REPORTS AND VOLUNTEERS ARE OFTEN FROM:

Alaska Department of Fish and Game
Alaska SeaLife Center
Alaska State Troopers
Alaska Veterinary Pathology Services
Chevron Corp
ConocoPhillips Alaska, Inc.
Cook Inlet Tug and Barge Co
Crowley Marine Tug
Friends of the Anchorage Coastal Wildlife Refuge
John and Betty Gilchrist

LGL Alaska Research Associates, Inc.
Native Village of Tyonek
Port of Anchorage
Priewe Air Service
Resource Development Council
Spernak Air
US Air Force, Elmendorf Air Force Base
US Army, Fort Richardson
US Forest Service, Chugach National Forest