Cook Inlet Beluga Whale Recovery Plan
Joint Science Panel and Stakeholder Panel Meeting Summary
Federal Building Annex, Anchorage, Alaska
30 March 2010 – Morning Session

Cook Inlet Beluga Whale Recovery Team Members

**Science Panel**

<table>
<thead>
<tr>
<th>Name</th>
<th>Expertise</th>
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<tbody>
<tr>
<td>Bob Small</td>
<td>general marine mammal expert</td>
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<tr>
<td>Carrie Goertz</td>
<td>beluga disease/health/strandings</td>
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<td>Craig Matkin</td>
<td>beluga predators</td>
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<td>Greg O’Corry-Crowe</td>
<td>beluga genetics</td>
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<tr>
<td>Manolo Castellote</td>
<td>beluga acoustics</td>
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<tr>
<td>Mark Willette</td>
<td>Cook Inlet fisheries biology and management</td>
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<td>Peter Merryman</td>
<td>president, Native co-management partner</td>
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<td>Pierre Beland</td>
<td>beluga ecotoxicology</td>
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<td>Robert Michaud</td>
<td>general beluga expert</td>
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<td>Robert Suydam</td>
<td>general beluga expert</td>
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<tr>
<td>Rod Hobbs</td>
<td>beluga population models/statistics</td>
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<td>Tamara McGuire (Team Leader)</td>
<td>general beluga expert</td>
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**Stakeholder Panel**

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
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<tbody>
<tr>
<td>Dale Paulson</td>
<td>Knik Arm Bridge and Toll Authority</td>
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<tr>
<td>Brett Jokela</td>
<td>Anchorage Water and Wastewater Utility</td>
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<tr>
<td>Chris Garner</td>
<td>Department of Defense</td>
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<tr>
<td>Christine Nelson</td>
<td>Matanuska-Susitna Borough</td>
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<tr>
<td>Doug Vincent-Lang</td>
<td>State of Alaska, Alaska Department of Fish and Game</td>
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<tr>
<td>George Vakalis</td>
<td>Anchorage Municipality</td>
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<td>Jason Brune</td>
<td>Resource Development Council</td>
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<td>Joel Blatchford</td>
<td>Alaska Native Marine Mammal Hunters Committee</td>
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<tr>
<td>John Schoen</td>
<td>Audubon Society</td>
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<tr>
<td>Karla Dutton</td>
<td>Defenders of Wildlife</td>
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<tr>
<td>Mayor David Carey</td>
<td>Kenai Peninsula Borough</td>
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<tr>
<td>Nancy Lord</td>
<td>Cook Inlet Keeper</td>
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<tr>
<td>Page Herring</td>
<td>Northern District Set Netters Association of Cook Inlet</td>
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<tr>
<td>Paul Shadura</td>
<td>Kenai Peninsula Fishermen's Association</td>
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<tr>
<td>Roland Maw</td>
<td>United Cook Inlet Drift Association</td>
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<td>Steve Ribuffo</td>
<td>Port of Anchorage</td>
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<td>Willie Goodwin</td>
<td>Alaska Beluga Whale Committee</td>
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<td>Marilyn Crockett (absent)</td>
<td>Alaska Oil and Gas Association</td>
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Others present: Mandy Migura (NMFS Cook Inlet Beluga Whale Recovery Coordinator), Kaja Brix (NMFS Alaska Region Assistant Administrator, Protected Resources), Brad Smith (NMFS Alaska Region Supervisory Biologist), Rich Kleinleder and Stephen Robey (URS, meeting support)
Welcome and Introduction
Kaja Brix welcomed the members of the Cook Inlet Beluga Whale Recovery Team and thanked them for their participation in the Science and Stakeholder Panels. She introduced the NMFS and URS support team. She asked the Recovery Team to review the Terms of Reference for participation and to email her or ask her in person if they had any questions.

The Team Leader, Tamara McGuire, explained that NMFS is required by the Endangered Species Act (ESA) to develop a Recovery Plan for the endangered Cook Inlet Beluga (CIB). The law does not require NMFS to form a Recovery Team but NMFS wanted to incorporate the diverse knowledge and experience of various scientists and citizens of the Cook Inlet area and elsewhere. The members were encouraged to be open-minded to the opinions of others, to practice good communication skills, and to work positively together as a team. The Recovery Team members went around the room and introduced themselves.

Tamara reviewed the agenda for the meeting. The morning will be a joint session and will include several background presentations. After lunch, the Stakeholders will meet to present their views on the Key Ecological Aspects of Cook Inlet belugas that the Science Panel should consider. The Science Panel was given the option to attend the Stakeholder meeting in the afternoon. This brought up the question of whether the Stakeholders were invited to sit in on the Science Panel meetings the next two days. A number of people thought this was worth further discussion.

The following PowerPoint presentations will be posted on NMFS’ Cook Inlet Beluga Recovery website, http://www.fakr.noaa.gov/protectedresources/whales/beluga/recovery/ci.htm

Federal research on Cook Inlet Beluga Whales – Rod Hobbs, NMFS
Federal research has included annual aerial surveys since 1994, satellite telemetry of tagged whales, collection of tissue samples from beached carcasses, comparative genetics, diet studies, health assessments from blood and blubber samples, and habitat assessments. Many of these studies have been conducted in cooperation with other agencies, Alaska Native groups, academic institutions, and other researchers.

- Table of abundance estimates from aerial surveys, 1994-2009. The data indicate a 1.5 percent decline in abundance since hunting was severely curtailed in 1999.
- Calves are very difficult to see from the air. Counts of calves from high-resolution video provide an index of productivity.
- Most whales are seen in Upper Cook Inlet (north of the Forelands) and aerial survey effort is most intense in this area.
- There is strong evidence that the range of CIB has contracted in the last 15 years - maps.
- Research has documented the timing of different anadromous fish runs important to belugas, primarily salmon and eulachon.
- Stomach analyses reveal a diverse diet but the data are limited in Cook Inlet.
• Telemetry efforts in 2000-2002 provide a sample of whale distribution and movements at different seasons.
• The Army has conducted research in Eagle Bay (Knik Arm), oriented toward investigating potential disturbance of belugas and fish from military aircraft and other activities nearby.

State of Alaska research on CIB – Bob Small, ADF&G
The State of Alaska has contributed to a wide range of cooperative research programs. The focus of the first presentation is on recent acoustic research in Cook Inlet.
• The objectives of the passive acoustic monitoring work is to get a better understanding of the distribution and movements of CIB throughout the year, the presence of killer whales in Upper Cook Inlet, and the nature of the ambient and anthropogenic sound environment.
• A number of passive acoustic monitoring devices were placed in different locations in Cook Inlet in 2009 (see map).
• Successfully mooring the instruments proved very difficult with floating debris and very high tidal currents, especially in Knik Arm.
• The results are preliminary and incomplete. Belugas were detected in the Upper Inlet to a distance of 2-3 km. Killer whales were detected at the Kenai River and Kachemak Bay moorings.
• Some beluga recordings were indicative of feeding animals, which is a new aspect of the research to be explored further.
• Several acoustic moorings were deployed over winter and will be retrieved soon, and moorings will be redeployed in summer of 2010.

The second presentation was on the research ADF&G has conducted on CIB diet, including the analyses from about 50 beluga stomachs collected in Cook Inlet and compared with other beluga stocks in Alaska. Other research has involved stable isotope analysis of bone samples taken from museums to explore diet at larger temporal and spatial scales.

Trends and Abundance of Salmon and Eulachon – Mark Willette, ADF&G
ADF&G has conducted limited research on eulachon but substantial research on salmon in the Cook Inlet watershed.
• Biomass estimates for eulachon in Cook Inlet streams are unavailable, but eulachon biomass in the central Gulf of Alaska has increased since the early 1980’s. The Susitna eulachon run generally peaks in late May.
• Since 1970, sockeye and coho salmon abundances have generally increased in Cook Inlet while chum salmon abundances have decreased.
• Salmon catches in northern Cook Inlet have generally declined due largely to declining fishing effort.
• Coho salmon were most abundant in Susitna River and 3X more abundant in Knik Arm than Turnagain Arm in 2002.
• A number of graphs and maps were presented showing the distribution and trends of different salmon species in CI tributaries.

Veterinary Studies and the Stranding Network – Carrie Goertz, Alaska SeaLife Center
The ASLC has worked collaboratively with other researchers and citizen science groups to collect information about the health of CIB from stranded live animals, beached carcasses, and tissue samples from other sources.

- Necropsies from beached dead animals give some indication of cause of death and provide tissue samples for analysis of contaminants, pathogens, disease, and other health indicators.
- Water quality monitoring is conducted to compare with health assessments.
- Belugas held in captivity in other facilities have been used to refine sampling techniques for wild animals and to validate health assays.
- Citizen monitoring groups are a critical part of the stranding network and help researchers find and work with stranded animals. They are also documenting movements of belugas from shore.
- Health assessment information for individual whales is important for trying to understand the health and vital rates of the population.

**Studies Related to Development Projects – Tamara McGuire, LGL Alaska Research.**

The private sector has funded considerable research on CIB in conjunction with permitting efforts for major development projects. These projects include the Knik Arm Bridge, Port of Anchorage expansion, Seward Highway construction, Chuitna coal mining, and a tidal power project for Ocean Renewable Power Company. Documents describing many of these research projects and their results can be found on NMFS Alaska Region website, [http://www.fakr.noaa.gov/protectedresources/whales/beluga/development.htm](http://www.fakr.noaa.gov/protectedresources/whales/beluga/development.htm).

- A great deal of work has been conducted by tracking whale movements from land and mapping these movements in relation to development project footprints and acoustical safety zones established by permits.
- Passive acoustic equipment has recently been deployed to see if it can help detect whales not visible from shore.
- The National Fish and Wildlife Foundation funded photo-ID project has been identifying individual whales by unique markings on their skin. This project continues to add to the catalogue of known individuals and is tracking their movements and, for mature females, their calving success over time. This data is critical for understanding population dynamics and also provides information on social structure.
- Life history information from the photo-ID project can be used in conjunction with other types of information, such as stranding data and necropsies.

**Break**

**St. Lawrence Estuary Belugas – Robert Michaud, Group for Research and Education on Marine Mammals**

The St. Lawrence beluga population has been studied extensively for many years. The St. Lawrence Estuary is surrounded by significant industrial and urban development and supports extensive marine traffic.
• There was a commercial hunt for belugas from the mid-1800s to the mid-1900s. There was also a bounty in the 1940s to protect fisheries. Hunting was stopped in 1979.
• The population was listed as endangered in Canada in 1983. They are isolated from all other beluga populations.
• Standardized aerial surveys since 1987 indicate that the population is relatively stable at about 1000 whales but it is not recovering to historic levels.
• The whales segregate into social groups during the summer with different distributions of males and females with young. There is very little data on their distribution or biology in winter.
• Some animals have been tagged to study movements and diving behavior. Photo-ID work has been conducted since the late 1980s and “family albums” have been compiled. Life history information is being tied to necropsy information from beached carcasses.
• Animals live longer than expected and do not turn white until they are 16-18 years old.

Toxicology in St. Lawrence Belugas – Pierre Beland, St. Lawrence National Institute of Ecotoxicology
Toxicological investigations have been ongoing since 1982. Most belugas are found dead on the beach rather than live strandings. If the carcass is fresh enough, the whole animal is collected and brought to a pathology lab for necropsy.
• Belugas have been tested for a wide variety of natural and man-made compounds, including metals, persistent and degradable organic compounds, and metabolites of common contaminants. The work requires a huge team of chemists and other technicians because the analytical methods are very specialized for different compounds.
• Global transport of chemicals is very important. Chemicals produced or used in one part of the world can be carried to other parts of the world by the winds and ocean currents and through migrating animals.
• The contaminant levels of CIB and other arctic beluga populations are much lower than they are in St. Lawrence belugas.
• Some contaminant levels are higher in males than in females because females pass contaminants on to their calves through milk.
• Belugas are susceptible to bioaccumulation of organic compounds because they feed at a high trophic level with high lipid contents and are long-lived animals.
• Contamination may have synergistic and cumulative effects on the nervous system, development, reproduction, immune system, hormonal system, and behavior. Other stressors such as noise and harassment likely contribute. It is very difficult to isolate and identify the minimum or threshold dosage of a given compound to an effect.
• There are thousands of new chemicals created and released into the environment every year and the potential effects are unknown.

Review of the ESA and Recovery Plan Guidance – Mandy Migura, NMFS
Different sections of the ESA define different processes and requirements regarding threatened and endangered species. Section 4(f)(1) describes the development of recovery plans.

- The goal of recovery is to restore listed species to a point where they are secure, self-sustaining components of their ecosystem, so that the protections of the ESA are no longer required.
- The role of a recovery plan is to provide consistency of management goals, structure and organized the recovery effort, identify and prioritize research tasks, provide guidance for implementing other sections of the ESA (e.g., Section 7 consultations) and provide a basis for cost estimates of recovery research and actions.
- The process for recovery plan development includes the opportunity for public review and input. The agency also has responsibilities to implement the plan, monitor progress toward management goals, and periodically conduct status reviews for the species.
- The format for a recovery plan is similar to that of the CIB Conservation Plan, including background information on natural history, habitat descriptions, threats assessment, recovery goals and objectives, and criteria for down- and de-listing. It should also have a prioritized implementation strategy with estimates of costs and timeline.
- The Science Panel will be responsible for developing a draft Recovery Plan for CIB. The Stakeholder panel will have an opportunity to review the draft and make comments and suggestions before it is released to the public. After an internal review, the Draft Recovery Plan will be released for public comment and peer review. After incorporation of comments, NMFS will publish the Final Recovery Plan which may be updated in the future as necessary.

**Agenda**

The agenda for the afternoon was reviewed. Stakeholders will be given eight minutes each to address the following questions, which will be brought to the Science Panel for their consideration:

1. What are the Key Ecological Aspects (KEAs) of CIB biology or ecology that, if missing or altered, would lead to the loss of CIBs over time?
2. What is the current/desired status of these KEAs and how do we measure them?

*Lunch / End of Joint Panel Meeting*