



**NOAA**  
**FISHERIES**

# Alaska Fisheries Science Center

Protected Species Science Program Review

## Summary and Recommendations

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# Structure of Presentations for Each Species Group

1. Introduction.
  - a. Stocks, distribution, abundance, and trends.
  - b. Legal status, potential threats, and **mandates** for NMFS and its regulatory partners.
2. Overview of AFSC research.
  - a. All projects currently being conducted by AFSC.
  - b. **Highest priorities**: Describe the highest priority information needs for improving science in the region.
3. Project objectives: Describe how this scientific objective addresses high priority information needs.
  - a. **Partners**: Describe current and prospective partnerships that are being pursued for this objective, including shared and collaborative approaches.
  - b. **Methods**: Describe the research being conducted to address this objective (survey design, statistical rigor, standardization, integrity, peer review, transparency).
  - c. **Data quality**: Describe how the quality, statistical precision, and frequency of data collected provide sufficient analytical accuracy, precision and timeliness of scientific products and advice relevant to this objective.
  - d. **Strengths** Describe the major successes in research on this objective and how should they be supported.
  - e. **Challenges** Describe the major limitations/weaknesses in research on this objective.
4. **Publications** Describe how advances in science and methodological approaches are being communicated.
5. Data access: Describe to what extent data are readily accessible to various external researchers.
6. **Recommendations** Present your recommendations for improving AFSC science to meet the information needs for conservation in the region.



# Scientific Strengths

## Survey methods

- Aerial surveys (manned and unmanned)
- Ship- and land-based surveys
- Advanced sampling techniques

## Electronic instrumentation

- Innovation and partnership with electronic engineers
- Concept through to field testing and implementation

## Acoustics research team

- Center of excellence
- Active field and analytical program
- Broad collaborations



# Scientific Strengths

## Statistical powerhouse

- AFSC marine mammal research teams include analysts formally trained as statisticians to apply contemporary statistical theory and to produce outputs that are responsive to and in support of the management decision process.
- The complexity of marine mammal and environmental data often requires development or extension of new areas of statistical theory as well.
- NMML statisticians are international leaders in the development and application of ecological statistics for animal movement models, mark-resight techniques, distance methods, and spatial-temporal model-based population estimators.



# Scientific Challenges

Stable funding providing a more efficient planning horizon

- Internal vs. external
- Year-to-year funding levels

Staffing

- Permanent vs. non-permanent
- Recruiting/retaining excellence



# Communications: Publications (2004-2015)

Topic	Peer-reviewed journals	Other publications
Steller sea lions	57	9
Northern fur seals	39	26
Ice-associated seals	20	7
Harbor seals	19	2
Large cetaceans	102	16
Cook Inlet beluga	13	10
Small cetaceans	69	5
Other	160	59
Totals (613)	479	134



# Summary Recommendations

## Theme II: Otariid pinniped science

- Steller sea lions
- Northern fur seals

## Theme III: Phocid pinniped science

- Ice-associated seals
- Harbor seals

## Theme IV: Large cetacean science

- Multi-species studies
- North Pacific right whales
- Humpback whales

## Theme V: Small cetacean science

- Cook Inlet beluga
- Killer whales
- Harbor porpoise

## Theme VI: Operational issues



# Theme II Recommendations: Otariid Pinniped Science

1. Continue annual population Steller sea lion and fur seal **abundance surveys** and increase frequency of fur seal surveys at Bogoslof Island & Sea Lion Rock
2. Continue **mark/resight monitoring** of sea lions and fur seals for survival/reproductive rate information
3. Continue monitoring sea lion and fur seal **diet** and expand use of emerging technologies for prey identification
4. Expand **electronic tag deployments** into under-sampled seal age/sex categories, continue deployments in areas of fisheries management concern, target deployments that overlap with high resolution prey surveys, and continue validation of predictive models of habitat use using stable isotopes.



# Theme III Recommendations: Phocid Pinniped Science

1. Equipment and software development for further **automation of thermal detection process** should be supported
2. Request NOAA Office of Marine Aircraft Operations support for **aircraft** with greater speed, range, and climb rate (e.g., King Air) for ice seal surveys
3. A long-standing need for a program **data manager** has compromised our ability to make some data available in a timely manner; recruit data manager
4. Reducing dependence on outside funding would make **more effective use** of staff time for publishing results



# Theme IV Recommendations: Large Cetacean Science

1. Secure major funding for distribution surveys for North Pacific **right whales**
2. Ship time to service passive **acoustic recorders** for continued acoustic monitoring
3. **Tag right and humpback whales** to track movements and identify important habitats



# Theme V Recommendations: Small Cetacean Science

1. Expand beluga research beyond monitoring surveys
2. Begin biopsy surveys of Cook Inlet beluga
3. Conduct stock structure studies on harbor porpoise in Southeast Alaska
4. Implement photo-ID, satellite tagging and acoustic studies of killer whales in the Aleutian Islands
5. Conduct range-wide abundance surveys for harbor porpoise in Southeast Alaska



# Theme VI Recommendations: Operational Issues

1. **PARR:** Secure **sufficient resources** to improve data management and to comply with PARR requirements
2. **Staffing:** Develop a long-term **staffing plan** that takes into account projected information needs, staff demography, and anticipated funding



# Thank you!

