

BEAUFORT SEA BIRD POPULATION AND RECOVERY MODELING WORKSHOP

About

The workshop will consist of a series of invited presentations followed by facilitated discussions to identify the methods for modeling population recovery following catastrophic perturbations for water birds of the Beaufort Sea region. The goal of the workshop is to provide an open discussion of competing approaches to population modeling for the conservation and management of Beaufort Sea bird populations that will set the stage for the development model tools that will be of use to natural resource managers. The presentations will focus on modeling approaches and subsequent discussions will focus on incorporating the life requisites and population dynamics of Arctic birds and the impact of oil spills or other catastrophic events on the demographics of bird populations. A summary in the form of an annotated bibliography for each of the species under consideration will be distributed to the invited participants prior to the workshop.

Objectives:

1. Identify the potential of various approaches to modeling population dynamics and recovery times (e.g. matrix v. individual-based models, Bayesian approaches, recovery times and viability analyses).
2. Identify additional considerations for the modeling exercise (e.g., density-dependence, suppression of demographic rates).
3. Contrast various approaches to model interpretation.
4. Provide a list of recommendations to guide the development of models and modeling tools for Beaufort Sea bird populations.

Products

The anticipated product of the workshop is a white paper compiled from invited submissions by the speakers with overview and synthesis prepared by staff and students from the Alaska Biological Science Center (ABSC) and Alabama Cooperative Fish and Wildlife Research Unit (ALCFWRU).

Wednesday, October 18th

Session 1 (8:30 – 11:30am)

Introductory session

8:30 - 8:45	Welcome & Introductions	Derksen
8:45 – 9:00	Workshop goals and objectives	Grand
9:00 – 9:30	Overview of the Beaufort Sea region	Lanctot
9:30 – 10:00	A matrix population modeling approach to predicting risks of mercury contamination and habitat degradation to the Common Loon	Mitro
10:00—10:20	Break	
10:20 – 10:50	Long-term effects of catastrophic events (oil spills) on demography and population recovery	Esler
10:50 – 11:10	Summary of the literature review for the taxa groups	Koons
11:10 – 11:30	Expected products of the research and modeling effort	Grand
Lunch (11:30am – 1:00pm)		

Session 2 (1:00pm – 4:30pm)

Modeling approaches and considerations

1:00 – 1:30	Individual-based models	Schmutz
1:30 – 2:00	Stage-based models	Heppell
2:00 – 2:15	Break	
2:15 –	Modeling Approaches (facilitated discussion)	Flint

Thursday, October 18th

Session 3 (8:30am – 11:30am)

Deriving management implications

9:00 – 9:30	Elasticity analyses - effects of stochasticity and projection interval	Rockwell
9:30 – 10:00	Direct estimation approaches to demographic analysis	Nichols
10:00 – 10:30	Sensitivity analysis as a starting point for management decisions: prospective and retrospectives on life stage simulation analysis	Lindberg
10:30 – 10:45	Break	
10:45 – 11:15	Quantitative methods for modeling viability	Wade
Lunch (11:15pm – 1:00pm)		
Session 4 (1:00pm – 3:00)		
Closing Session		
1:00 – 3:00	Consensus on scope, modeling approaches, and deriving management implications	Derksen/Grand



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Workshop Organizers

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Invited Participants

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Dan Esler
Simon Fraser University

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Alaska SeaLife Center
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U.S. GEOLOGICAL SURVEY
ALASKA BIOLOGICAL SCIENCE CENTER
AND
ALABAMA COOPERATIVE FISH AND WILDLIFE
RESEARCH UNIT