Population Dynamics

BREEDING SUCCESS, SURVIVAL RATE, AND MOVEMENT BETWEEN COLONIES ARE AMONG THE FACTORS RESEARCHERS STUDY TO DETERMINE THE EXPANSION, CONTRACTION, OR STABILITY OF SEABIRD POPULATIONS.

Regular monitoring of beaches offers a way to assess large-scale patterns of adult seabird mortality at sea, and is one of the only ways to detect episodic mortality events that often occur outside the breeding season, and are frequently caused by a lack of food. Surveying beaches for dead birds provides a cost-effective method for tracking mortality rates—a key dimension of seabird population dynamics—and can also provide insight into causes of death.

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COASST

Project 612

BEACH MONITORING PROGRAMS IN ALASKA HAVE historically been launched in response to oil spills, large-scale die-offs, or other notable events. The Coastal Observation and Seabird Survey Team (COASST) is a Washington-based program established in 1998 to gather information on beach-cast birds, human use of beaches, and beach oiling. A citizen-science program, COASST relies on a large network of volunteer beach surveyors, and has been very successful in the Washington-Oregon area, with hundreds of volunteers surveying thousands of kilometers of beaches.

In 2006, the Board supported Project 612, a pilot study to extend the successful COASST monitoring model to Alaska. The project sought to track seabird mortality in Alaska and develop a citizen-science program for nearshore monitoring. COASST conducted over a dozen training sessions, recruiting more than 55 participants and successfully implementing beached bird data collection on 51 beaches, from Sitka to the Aleutians. The project established partnerships with 14 agency, tribal, and nongovernmental organizations, and also demonstrated the use of COASST data in science and natural resource management. This pilot effort concluded that creating and sustaining a community of data collection participants are definitely possible in Alaska.

Julia Parrish

Julia Parrish

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Citizen Science in Alaska

Project 732

FOLLOWING THE SUCCESS OF THE PILOT COASST BEACH MONITORING PROJECT IN ALASKA, THE BOARD FUNDED Project 732, which seeks to enhance the development and maintain the momentum of this citizen-science program in Alaska. The project plans to stabilize and strengthen the Alaska program by adapting and enhancing its field guide and protocol for Alaska and by maintaining and expanding partnerships. The program will also expand data collection at current and new sites and disseminate program information through area-specific materials. By the end of 2008, the COASST program had conducted more than 1,100 surveys on 63 beaches, involving over 100 participants.

Gus van Vliet

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Impacts of Herring Decline on Marbled Murrelets

Project 819

PROJECT 819 ALSO SEEKS TO UNDERSTAND FACTORS affecting seabird survival probability, but with a focus on marbled murrelets, a species of conservation concern in Alaska. Working closely with the Exxon Valdez Oil Spill Trustee Council, Prince William Sound Science Center, and USFWS studies on juvenile Pacific herring and seabird predation on herring, researchers aim to better understand the survival of marbled murrelets within the ecological context of collapsed herring stocks.

Juvenile herring are a critical part of the diet of marbled murrelets. Previous research showed that summer weights of murrelets have been declining, meaning that the birds are entering winter in less than optimal body condition, which could be further compromised by a decline in juvenile herring. By assessing the variation in body condition and stress levels of marbled murrelets in Prince William Sound during winter, using the hormone corticosterone as an indicator of dietary stress, and by describing the winter diet of marbled murrelets, the project team seeks to link marbled murrelet condition and diet to the probability of survival.

Mike Miller

Herring eggs.

NOAA/NMFS

Herring close-up.