Resource Brief
Southeast Alaska Network

National Park Service
U.S. Department of the Interior

Inventory & Monitoring Program

Kittlitz's Murrelets

Glacier Bay National Park
Klondike Gold Rush National Historical Park
Sitka National Historical Park

Importance

The Kittlitz's murrelet is a rare sea bird endemic to Alaska and eastern Russia. Though they occur in a variety of open water habitats, KIMU are often associated with areas near tidewater glaciers. A large portion of the world's KIMU population depends on the glacial fjord of Glacier Bay National Park for its summer breeding habitat. Kittlitz's murrelets have been selected as one of 12 core vital signs being monitored by the Southeast Alaska Network (SEAN) based on population declines, status as a candidate for protection under the U.S. Endangered Species Act, and their association with drivers of ecosystem change, such as glacial dynamics, climate change, and human activity. Long-term monitoring of KIMU will inform decisions related to species protection, park management, ecosystem health, and climate change response. Marbled murrelets, which closely resemble Kittlitz's murrelets and occur in larger numbers throughout southeast Alaska, are also monitored in Glacier Bay.

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Photo: M. Reid/NPS

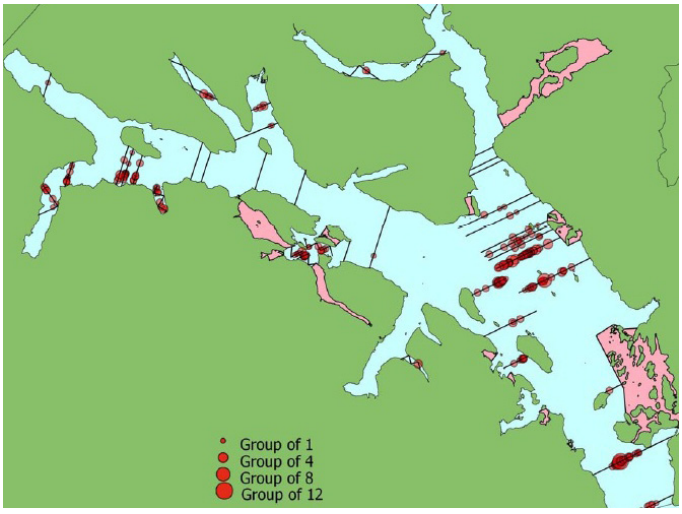
The Kittlitz's murrelet (shown here) and the similar but more numerous marbled murrelet both occur in Glacier Bay but cannot always be distinguished.

Program Design

Network researchers implemented a pilot program for monitoring Kittlitz's murrelets in Glacier Bay in 2009. Sampling and data analysis methods were refined through 2011 to ensure a statistically robust and logistically practical program. Boat-based surveys are completed each July when murrelet aggregations are highest. Sampling transects were selected using a random, yet spatially-balanced method. Boat-based line transect surveys are conducted along transects oriented perpendicular to shorelines using two observers.

Status and Trends

Kittlitz's murrelets are believed to have declined dramatically over last three decades due to factors that are not well understood. Glacier Bay proper supports about 14,000 birds. Uncertainty in local population trends remain, in part because of differences in survey and analytic methods over the last 20 years. SEAN also monitors oceanographic conditions to provide context for interpreting changes in murrelet population size and distribution, and we expect future analyses to consider how July oceanographic conditions might explain some of the variation seen above-water in KIMU distribution.



The illustration provides an overview of the July 2010 monitoring data. Lines show transect locations; red circles show recorded observations of Kittlitz's murrelets along survey transects, scaled by group size. Observations in 2010 also found large concentrations of Kittlitz's murrelets in the lower bay, far from the up-bay glacial fjords with which they are typically associated; this likely reflected unusually good foraging opportunities in the lower bay that year.

Reports and Data Access:
http://science.nature.nps.gov/im/units/sean/KM_main.aspx

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