

**Project Summary:
Kittlitz's Murrelet Research, Icy Bay, Alaska, 2009**

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We studied the ecology of the Kittlitz's Murrelet (KIMU) in Icy Bay, Alaska from May-August 2009. Because we are working in a mark-recapture framework to estimate survival of this species, our primary goal during the 2009 field season was to capture and band as many KIMU as possible. In addition, we radio-marked a subset of these birds to estimate reproductive measures and true survival. We captured *Brachyramphus* murrelets over two time periods: May 12th-27th and July 15th-August 3rd. In total, we captured 209 KIMU, including one hatch-year bird and one second-year bird, and 23 Marbled Murrelets (MAMU), including three hatch-year birds. We recaptured six KIMU that were banded in previous years (two birds from 2007 and four from 2008). We captured the majority of murrelets during the early capture session (138 KIMU, including five recaptures, and 14 MAMU) compared to the late capture session (71 KIMU, one recapture, 9 MAMU). We attached VHF radio transmitters to 30 adult KIMU and one hatch-year KIMU. We collaborated with colleagues at the United States Geological Survey to deploy satellite transmitters on two adult KIMU; this pilot effort was the first successful deployment of satellite transmitters on KIMU.

We conducted 35 aerial telemetry flights to locate radio-marked birds from May 16th-August 1st. We located two active nests (2 of 30; 7%); one near the Tyndall Glacier and one on a nunatak above the Yahtse Glacier. We deployed a remote video camera at the Tyndall Glacier nest, but were unable to access the Yahtse Glacier nest prior to the fledging date. The Tyndall Glacier nest failed; both adults returned to the nest after camera deployment and continued to incubate the egg, but the egg failed to hatch and the parents ceased incubation. The egg was then apparently eaten by a predator (presumably a mountain goat), which also chewed the cord connecting the camera with the recorder system. Therefore, we are unable to discern the final fate of the egg. We revisited all but one of the previously active KIMU nests in Icy Bay; none of these nests were active in 2009. As in previous years, we enumerated and monitored the Caspian, Arctic, and Aleutian Tern nests on Gull Island and Riou Spit to provide an indication of forage fish availability in 2009.

We relocated four radio-marked KIMU (4 of 30; 13%) in or near aerial predator nests. Because predation of KIMU exceeds reproduction, we continued to monitor and collect prey remains at Peregrine Falcon and Bald Eagle nests in 2009. We are collaborating with colleagues at USFWS-Migratory Bird Management to examine the relationship between KIMU and aerial predators in Icy Bay during the 2010-2011 field seasons.

We conducted one bay-wide survey on July 17th to estimate abundance of KIMU in Icy Bay. There were very few KIMU in Icy Bay in 2009; our population estimate was 728±213 birds, which is the smallest estimate ever recorded in Icy Bay (2002-present). We also conducted surveys along the Malaspina Forelands and in Yakutat Bay in 2009.