

9. TEMPORAL AND SPATIAL VARIABILITY OF KITTLITZ'S MURRELETS IN ICY BAY, ALASKA

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We conducted at-sea surveys during July and August 2005 to determine the range and peak period of appearance of juvenile Kittlitz's murrelets (*Brachyramphus brevirostris*) and to understand the spatial and temporal variation in peak fledging of hatch-year and dispersal of after-hatch-year birds in Icy Bay, Alaska. For each Kittlitz's murrelet observation, number of birds, age category, location (air or water), activity (flying, resting, foraging), and estimated perpendicular distance to the bird(s) were recorded. Environmental covariates, including sea surface temperature, water clarity, depth, and shoreline substrate, were recorded along each transect. Over the six-week period, 888 Kittlitz's Murrelets (556 on transect) and 75 unidentified *Brachyramphus* murrelets (37 on transect) were recorded. Only eight probable juveniles were observed (23 July – 4 August) on the water during the entire survey period. Density (birds per km² ± SE) of Kittlitz's Murrelets was highest in pelagic waters of Taan Fjord (18.6 ± 7.8) during 10 – 16 July. Total abundance (N ± SE; 1317 ± 294) was similar from 3 – 16 July, but decreased dramatically during the third survey interval (17 – 23 July; 601 ± 204). Total abundance in Icy Bay was estimated to be 2098 ± 373 in 2002, suggesting a decline of 59% over the three year period. Kittlitz's murrelets congregated in four 'hotspots' throughout the bay, but generally densities in Taan Fjord were highest. Many after-hatch-year birds were observed holding fish, suggesting nearby breeding activity. Lack of information about juvenile plumages and adult molting patterns may have led to misidentification of some hatch-year birds.

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