INTRODUCTION

- Kittlitz’s murrelet (Brachyramphus brevirostris, KIMU) is a rare, mysterious seabird and one of the most poorly known birds in North America; occurs in coastal Alaska & far eastern Russia.
- Breeding ecology virtually unknown; presumed nesting habitat for most of AK population in relatively inaccessible high-elevation, glaciated terrain.
- Species of conservation concern; limited data suggest low productivity and low recruitment.

STUDY AREA

- Accessible nesting habitat recently discovered within Kodiak National Wildlife Refuge.
- Ultramafic parent rock formations inhibit primary plant succession, providing scree nesting habitats at relatively low elevations, similar to habitat in recently deglaciated, higher-elevation terrain.
- Nest sites on scree in western Kodiak Island between 8 and 12 km inland from the coast.

OBJECTIVES

- Assess nest success rates and identify causes of nest failure.
- Determine diet composition of nestlings.
- Quantify meal delivery rates to nestlings, and the number and type of fish required to fledge a Kittlitz’s murrelet chick.
- Determine length of the nesting period.

METHODS

- Systematic search of scree habitats during the incubation period.
- Placement of automatic, motion-triggered cameras 1-2 meters from every second nest (2009-2010), or all active nests (2011).
- Cameras placed immediately upon discovery of an active nest.
- Photos taken every 3 minutes or when triggered by motion.
- Three scheduled post-hatch nest checks.

RESULTS

Nest Success

- 17% apparent nest success rate.
- 70% of nests failed due to predation (49%) and unexplained death of chick on the nest (21%).
- Red foxes accounted for 100% of all camera-detected depredations (n = 10).
- No significant difference in apparent nest success rate between camera and non-camera groups (p = 0.24, chi-square).

Chick Meal Delivery

- Mean nestling period = 24.9 days (n = 7 chicks, range 22-28 days).
- Adults provisioned chicks an average of 4.37 fish per day.
- No significant difference in provisioning rates across study years (p = 0.17, ANOVA), but sample sizes small.
- Mean of 110.3 fish consumed by nestlings from hatching to fledging (n = 7 nests, range = 79-156 fish).

CONCLUSIONS

- Overall low nest success, primarily due to nest predation and unexplained chick mortality.
- Nesting diet high-quality, nestling development rapid, and nestling period brief, compared to other members of the seabird family Alcidae.
- Reliance on high-quality forage fish also reduces stress and predation risk for adult birds by reducing the number of chick provisioning visits to high-risk nest sites.

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