

**Alaska Department of Fish and Game
State Wildlife Grant
ANNUAL INTERIM PERFORMANCE REPORT**

Grant Number: T-1 **Segment Number:** 16
Project Number: 1
Project Title: Marbled Murrelet Activity Patterns and Health at Port Snettisham, Alaska
Project Duration: 20 May 2005 – 30 June 2008
Report Period: 20 May 2005 – 20 May 2006
Report Due Date: August 20, 2006

Objectives

Activity Patterns and Habitat Use

1. Determine daily flight and foraging patterns of radio-marked Marbled Murrelets (*Brachyramphus marmoratus*, MAMU) during nesting, chick rearing, and post-fledging periods (2005 and 2006);
2. Determine initial post-breeding dispersal movements as best as possible based on battery signal strength, flight time costs, and distances birds move from Port Snettisham (2005);
3. Identify nesting habitat and potentially locate nests (2006);

Health Assessment

4. Conduct health evaluations for 30-35 MAMU/year using hematologic and biochemical testing (2005 and 2006);
5. Establish blood-based reference ranges for Southeastern Alaska MAMU;
6. Compare health indices inter-annually;
7. Conduct geographic health comparison between MAMU from Southeast Alaska and MAMU from central California (samples previously collected and analyzed);
8. Archive blood samples for future DNA analyses, disease testing, and isotope research.

Summary of Accomplishments

The following accomplishment relates to Objectives 1-8:

1. We captured and radio-marked 72 MAMU (32 in June of 2005 and 40 in May of 2006). An additional 13 murrelets were captured in June and July 2005 for banding and blood analyses. Twenty-five research team members and volunteers spent 38 hours over 7 nights capturing, banding, and releasing 75 murrelets. An additional 5 hours were spent over 2 nights to catch 10 birds.

The following accomplishment relates to Objectives 1-3:

2. Radio-marked murrelets were tracked by aircraft, boat, and data logger (2 in 2005 and 3 in 2006). Aerial, boat, and data-logger surveys of radio-marked murrelets occurred on 55, 38 and 70-99 days, respectively (15, 27, and 59 days in 2005; 40, 11, and 11-40 days in 2006). More than 145 hours of flight time was logged in tracking birds from Sullivan Island in Lynn Canal in the north to Wrangell in Sumner Strait and the southeast tip of Baranoff Island in Chatham Strait in the south.

The following accomplishment relates to Objectives 1 and 2:

3. Surveys of daily movements and activity patterns in both years indicated that radio-marked murrelets departed Port Snettisham in the evening and usually returned in the early to mid-morning hours (00:00-06:00). In 2005, 22 radio-marked murrelets stayed within a 50 km radius of Port Snettisham until mid-July and returned to the inlet at least every 1-9 days. In

T-1-16-1 Marbled murrelets
FY06 Performance report

2006, 12 murrelets left the area soon after marking (by 22 May), and 5 remained in the Port Snettisham area until at least 26 June.

The following relates to Objective 2:

4. In 2005, when our objective was to look at post-breeding dispersal, the number of radio-marked murrelets attending Port Snettisham declined steadily throughout the season, with half the birds leaving the inlet by 15 July, and all but 2 gone by 31 July. Dispersing radio-marked murrelets were found throughout the inner passages of SE Alaska; over 200 km (over water distance) into Glacier Bay in the north and 160 km in the direction of Chatham Strait in the south.

The following accomplishment relates to Objective 3:

5. In 2006, when our objective was to identify nesting habitat, 4 birds were detected inland and two active nests were found. One nest failed during incubation and the other was presumed successful. Remote habitat limited actual discovery of the nests. Both nests were located on steep cliffs with 25-75% vegetation cover along river valleys that drain into Port Snettisham (Prospect and Tease creeks). These sites were near but not in forested habitat (western hemlock *Tsuga heterophylla* Sitka spruce *Picea sitchensis* forest type). Aerial photographs were taken to document each nest area. Additional habitat details are forthcoming.

The following accomplishments relate to Objectives 4-8:

6. To our knowledge no murrelets died in 2005 as a result of our captures. In 2006, however, we lost 15 birds; at least 4 were taken by Bald Eagles (*Haliaeetus leucocephalus*) and the others died of unknown causes. This level of mortality has not been documented in previous MAMU telemetry studies despite capturing and marking hundreds of birds. Mortality was also high in other bird radio-telemetry projects in SE Alaska in 2006, indicating that environmental conditions (e.g., prey abundance, weather) could be contributing factors. An analysis of this high mortality is ongoing.
7. Analysis of blood samples is ongoing. Health assessments are forthcoming.

Significant Deviations:

1. In 2006, 2 of the 3 data loggers were not deployed until early June. We had planned to conduct boat surveys in the evening at the mouth of Port Snettisham, but when that proved dangerous, we ordered two new data loggers to collect similar data.
2. More money was spent on aerial telemetry flights and supplies than originally anticipated. Less money will be spent on these items in FY08, so we anticipate an offsetting cost-savings.

Actual Costs during this Report Period (*personnel plus all operating expense totals*):

Federal (from ADF&G):	Partner (nonfederal share):	Total:
\$ 64,361	\$ 21,454	\$ 85,815

Project Leader (*or Report Contact Person*): S. Kim Nelson or Scott Newman

Additional Information:

1. Is this project contributing samples to the Alaska Avian Influenza detection effort?
Several fecal samples were collected by veterinarian Katherine Savage (Juneau) during captures in 2006. These will be contributed to the Avian Influenza detection effort. We would be happy to contribute future samples if provided with the standardized protocols.