

May and June created turbid waters in Snettisham and nesting birds were flying farther to forage than in previous years.

JOB/ACTIVITY 3: Determine daily flight and foraging patterns of birds.

The combination of boat surveys and data logger stations allowed us to determine daily and seasonal activity patterns of murrelets foraging inside PS. As in previous years, the mouth of PS had significantly higher nighttime detection totals than daytime detection totals, demonstrating that many murrelets exit interior PS during the late evening hours where they congregate at the mouth of PS. Murrelets returned to interior PS early in the morning hours and many were found foraging and loafing near the juncture of the Whiting and Speel arms of PS. However, other than the Whiting River data logger no differences were found in the numbers of murrelets present during the day compared to night.

One possible explanation for this nocturnal redistribution is that murrelets move to take advantage of alternate or better feeding opportunities at night. However, results from this study suggest that murrelets are not redistributing themselves in response to changes in fish prey abundance at night. Fish prey were more abundant at the inner transect compared to the outer transect during both night and day periods. If murrelets were foraging on fish prey at night, they would be expected to remain in the inner region. A second possible explanation for the shift in distribution is predator avoidance. Moving to the mouth of Port Snettisham may provide murrelets with open water where they can rest while avoiding nocturnal predators.

JOB/ACTIVITY 4: Identify preferred foraging habitat during incubation, chick-rearing, and post-fledging periods.

Preferred foraging habitat changed throughout the season perhaps in response to changes in water turbidity and prey availability. During incubation and early chick-rearing, nesting birds stayed close to nesting sites as they had in 2007. However, when significant rains fell in June, birds moved to locations in Tracy/Endicott Arms where water was less affected by runoff. Post-breeders and failed breeders left the area entirely, foraging in Icy Strait, Glacier Bay and unknown locations (see below).

JOB/ACTIVITY 5: Determine post-breeding dispersal movements.

Post-breeding dispersal dates in 2008 were similar to 2007; however some birds left PS earlier and spent more time in nearby Stephen's Passage and the Tracy/Endicott Arm system than in previous years. As of 31 July and 12 August, only 9 and 6 birds, respectively, remained in PS and nearby areas. We were able to relocate two dispersed individuals, one near Point Adolphus in Icy Strait and one in lower Glacier Bay. Flights south to Kuiu Island and Frederick Sound produced no birds.

Significant Deviations: None to report.

Additional Information:

Reports:

Nelson, S.K., S.H. Newman, B.A. Barbaree, D.L. Whitworth, and H.R. Carter. 2009. Marbled Murrelet (*Brachyramphus marmoratus*) Breeding Ecology, Terrestrial Habitat Use, and Activity Patterns in Port Snettisham, Southeast Alaska, 2005-2007. Unpublished report prepared for the Alaska Department of Fish and Game by Wildlife Trust, New York, NY.

Newman, S. H., V.M. Padula, S.K. Nelson, and T.B. Haynes. 2008. Health Assessment of Marbled Murrelets in Port Snettisham, Southeast Alaska. Unpublished report prepared for the Alaska Department of Fish and Game by Wildlife Trust, New York, NY. 41pp.

Publications in Review:

Padula, V.M., S.H. Newman, S.K. Nelson, T.B. Haynes, and C. Cray. In review. Health assessment of Marbled Murrelets in Port Snettisham, Southeast Alaska. *Journal of Wildlife Diseases*.

Haynes, T.B., S.K. Nelson, F. Poulsen, and V.M. Padula. In review. At-sea habitat use and patterns in spatial distribution of Marbled Murrelets in Port Snettisham, Southeast Alaska. *Marine Ornithology*.

Haynes, T.B. and S.K. Nelson. In review. Diel shifts in Marbled Murrelet distribution at-sea in Port Snettisham, Southeast Alaska.

Presentations:

Newman, S.H., S.K. Nelson, D.L. Whitworth, H.R. Carter, and M. Kirchhoff. Marbled Murrelet activity patterns and health at Port Snettisham, Alaska. Poster, 2006 Pacific Seabird Group Annual Meeting.

Nelson, S.K., S.H. Newman, D.L. Whitworth, H.R. Carter, and M. Kirchhoff. Marbled Murrelet activity patterns and health at Port Snettisham, Alaska. Poster, 2006 North American Ornithological Conference.

Nelson, S.K., S.H. Newman, B.A. Barbaree, D.L. Whitworth, and H.R. Carter. Nesting habitat, activity patterns, and distribution of Marbled Murrelets at Port Snettisham, Southeast Alaska. Paper, 2008 Pacific Seabird Group Annual Meeting and 2008 Oregon Chapter of the Wildlife Society Annual Meeting.

Haynes, T.B., S.K. Nelson, F. Poulsen, and V.M. Padula. At-sea habitat use and patterns in spatial distribution of Marbled Murrelets in Port Snettisham, Southeast Alaska. Poster, 2009 Pacific Seabird Group Annual Meeting.