

2001-2002 Marbled Murrelet Surveys Summary
San Juan Island National Historical Park
Friday Harbor, Washington

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Summary of 2001 and 2002 Marbled Murrelet Surveys within San Juan Island National Historic Park

Introduction/Background

Surveys were conducted for Marbled Murrelets (*Brachyramphus marmoratus*) within National Park Service land on San Juan Island during the 2001 and 2002 nesting seasons. The San Juan Islands have an interesting and not entirely known place in the unique and unfolding story of the Marbled Murrelet. Relatively high numbers or concentrations of birds are found on the water in the San Juan Islands, particularly in some locations- such as the southern end of Lopez Island. However, murrelet use of forested areas of the San Juans is not as prevalent. There are many potential contributing factors to this. One is the lack of extensive suitable habitat- the San Juan Islands have seen logging and very little to no old growth forest remains throughout the islands. Areas with potential suitable habitat are small in size and might present edge effect situations. The elusive, secretive nature and general natural history of the Marbled Murrelet also make them difficult to study and garner definitive information.

Ralph et al (1995) opens with the statement, “The Marbled Murrelet (*Brachyramphus marmoratus*) has long been regarded as a bird of mystery in the Pacific Northwest because its nesting habits have remained largely unknown to ornithologists, and its nearshore feeding habits made it difficult to survey.” Murrelets were listed as a federally threatened species under the Endangered Species Act in 1992. They have state listed threatened status in Washington and Oregon and state endangered listing in California. The statewide breeding population for Washington is estimated to be 5,000 birds. Although this estimate is the most comprehensive to date, it is based largely upon data collected in the late 1970’s. Murrelet populations are currently believed to be in decline (USFWS 1997). The recovery plan cites the elimination of mature and old-growth forest, primarily by timber harvesting and urbanization, as the principle factor contributing to the decline of the marbled murrelet and the most significant impediment to recovery of the species. Mortality due to predation, impacts from the effects of oil spills, mortality due to entanglement in fishing gear, chronic water pollution, aquaculture and disturbance at nesting and foraging sites have also been identified as potential limiting factors.

In the fall of 1999 Shelley Hall, a wildlife biologist and murrelet specialist from Olympic National Park and Bill Ritchie, a wildlife biologist and murrelet specialist from the Washington Department of Fish and Wildlife completed an assessment of suitable habitat for marbled murrelets within San Juan Island NHP. They essentially did a tree by tree assessment, delineated the best or most suitable habitat, and recommended the best areas for conducting murrelet surveys. They recommended that Pacific Seabird Group Inland Survey protocol surveys be conducted in several portions of the park. They prioritized areas and came up with four different survey sites. Two were located at American Camp and two were located at English Camp. Surveys were conducted during the 2001 and 2002 breeding seasons, following the Pacific Seabird Group Inland Survey protocol.

Study Area

San Juan Island National Historical Park was established in 1966 to commemorate the historical events that occurred there during 1853 to 1871 in connection with the final settlement of the Oregon Territory boundary dispute. American Camp is comprised of 1,223 acres and English Camp is comprised of 529 acres. The areas include beach, dune, coniferous and deciduous forest, prairie, bedrock outcrops, Garry oak savannah, orchard, mowed lawn, wetlands, and saltwater lagoons. The murrelet survey sites were placed in areas of coniferous forest, or at forest edges where the surveyor

would have the best chance of seeing birds flying in and out of the forest. At English Camp the majority of trees with suitable nest platforms are large Douglas fir remnants. Most of the trees are deemed too isolated to be used by murrelets, but if surrounding forests are allowed to mature, one might see more areas of suitable habitat in the future- 50 years or more down the line. There are currently several patches of suitable trees that might be large enough to provide useful habitat. At American Camp most trees containing suitable murrelet platforms are isolated individual trees or small clumps. Some of the best habitat straddles the eastern boundary with state DNR land.

Four survey areas or sites were established. The two sites at English camp are shown on Map #1 attached; site 25 is 2.16 ha and site 22 is 7.70 ha. The two sites at American Camp are shown on Map # 2 attached; site 46 is 0.92 and site 48 is 3.64 ha. Two to five stations were established at each site.

Methods and Results

Surveys were conducted in accordance with the Pacific Seabird Group Inland Survey protocol (Evans et al 2000). Surveys began forty-five minutes before sunrise and ended one hour and fifteen minutes after sunrise. The surveyor remained at one site for the two hour time period, listening and looking for murrelets. In the event of fog, rain, or wind and the degree of it, protocol called for extending the survey or rescheduling it if conditions required. Surveys were scheduled to meet protocol timing requirements.

Surveys were conducted by a biological technician who was trained and certified by Washington Department of Fish and Wildlife. Since very few murrelets were detected at San Juan, protocol requires a mid-season follow-up survey to refresh surveyors' skills. In early July each year, the technician in this survey effort travelled to Olympic National Park to conduct a survey in an area of high murrelet activity.

In 2001, one audio detection was recorded at Jakle's Lagoon; this may have been a bird on the water.

2001 Results

Site Name	Officers	East Boundary	Bell Point	Jakle's Lagoon
Visits	11	11	11	11
Stations	2	5	4	3
Detections	0	0	0	1

Results from the 2002 breeding season included no detections.

2002 Results

Site Name	Officers	East Boundary	Bell Point	Jakle's Lagoon
Visits	13	13	13	14
Stations	2	5	4	3
Detections	0	0	0	0

Species of Concern and the presence or absence of corvids were also recorded. Ospreys, bald eagles, pileated woodpeckers, and common loons were observed as Species of Concern. Crows and ravens were noted corvid species in many surveys.

Discussion of Results

The waters of the San Juan Islands are used extensively by murrelets (Speich and Wahl 1995; Evans pers com). In fact, some of the highest numbers of murrelets in Washington have been documented within the waters of the San Juans (Speich and Wahl 1995). Since murrelets are capable of travelling up to 70 kms between foraging and nesting areas, these birds could be nesting as far away as the Olympic Peninsula, Vancouver Island, or the northern Cascades yet foraging in the San Juans.

Previous isolated and limited inland surveys in the San Juan Islands have not documented occupancy and indications of nesting have not been recorded in the islands (Ritchie pers comm). Our work is the first complete inland survey effort following PSG protocols in the San Juan Islands (Ritchie pers comm). As such, negative results are meaningful, and raise the question of why we didn't find murrelets using suitable inland sites located so close to intensively used foraging areas.

Hamer and Nelson (1995) found that the smallest stand associated with a known murrelet nest in the Pacific Northwest was 3 ha in size, most were much larger; distance to salt water was 1.6 km up to 40 km. Previous findings indicate that large stands are more likely to be occupied by murrelets than small stands (Miller and Ralph 1995; Nelson and Hamer 1995). In Oregon, occupied landscapes had less fragmented and isolated old-growth than unoccupied landscapes (Meyer and Miller 2002). The San Juan stands are very close to salt water, however the habitat patches are quite small. The four surveyed stands are between 0.92 and 7.70 ha in size; all are within 0.3 km of salt water. The landscape on San Juan Island is quite fragmented with a significant amount of development.

Murrelet nests are generally associated with moss-covered limbs, however nests have been found on limbs with little or no moss (Hamer and Nelson 1995; Hamer 1995). Moss is not prevalent in the relatively dry forests of the San Juan Islands; when present, moss is not thick.

Probable absence of murrelets from a site is very difficult to determine, especially in nesting areas with low murrelet use (Evans et al. 2000). There is a possibility that murrelets are nesting at one or more of the San Juan sites and we simply didn't detect them. However, we had good geographic coverage of the stands, adequate survey station placement, and conducted 11 to 14 survey visits per site each year. Therefore, we can be reasonably certain that had murrelets been present we would have detected them.

Recommendations for the Future

These surveys represent the breeding status of these sites for the time period during which the surveys were conducted (2001 - 2002). For probable absence sites, PSG protocol (Evans et al. 2000) suggests that if a period of five or more years occurs between protocol surveys and implementation of any habitat modifying activities, additional surveys may be appropriate. Based on results obtained in 2001 and 2002 at San Juan National Historical Park, the US Fish and Wildlife Service also recommends repeating protocol survey efforts again in five years (Lynch pers comm).

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