

MARbled MURRELET HABITAT ASSESSMENT
OF THE NORTH FORK OF GAZOS CREEK

Prepared for

The Sempervirens Fund
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INTRODUCTION

At the request of the Sempervirens Fund, a Marbled Murrelet (*Brachyramphus marmoratus*) breeding habitat assessment was done on the Ainsley property occupying the North Fork of Gazos Creek (see Figure 1) and one dawn survey was conducted. The studied property is located North of Gazos Creek Road and South of Butano State Park and encompasses much of the North Fork watershed.

Although this property has been logged more than once and most of the forest is comprised of second-growth trees, some larger, residual trees are known to be present. The purpose of this study was to determine the location and extent of these residual tree areas and to assess their potential to serve as nesting habitat for the Marbled Murrelet. To support murrelet nests, trees must have level or nearly level "platforms" within the live crown. In the Pacific Northwest, platforms as small as 4 inches in diameter have been used. In the Santa Cruz Mountains, where moss cover is thin or often lacking entirely, utilizable platforms are probably at least 7 inches in diameter. To date, no nests have been found in California on platforms less than 7 inches in diameter. Platforms are found in large Redwood or Douglas-fir trees and may consist of large horizontal branches, burls, basal stumps that form where several branches leave the bole at the same point, broken or damaged areas of bole or limb, and old squirrel nests.

No previous dawn surveys have been conducted on the property, although surveys have been done nearby on the main stem of Gazos Creek and at Butano State Park. Murrelets are known to nest in the park in old-growth stands remaining in the adjacent watersheds to the north and west. Murrelets have also been detected during dawn surveys along the main stem of Gazos Creek to the southwest (G. Strachan, pers. comm.).

HABITAT SUITABILITY

Two methods were used to evaluate habitat suitability. Aerial photos from 1981, 1984, and 1987 were examined under a stereoscope for the presence of old-growth stands or residual trees. An on-the-ground survey of the property was conducted to look for old-growth stands, residual trees, and the presence of 7 inch or larger platforms in trees using Pacific Seabird Group (P.S.G.) habitat assessment guidelines (see Appendix A). Both methods also utilized the existing Forest Cover map prepared by Pacific Meridian Resources.

Both evaluation methods lead to the same conclusion - suitable habitat is scarce on the property. The property does contain a small number of residual trees that are possibly suitable for nesting by murrelets, but the overall quality of habitat is only fair to poor. Figure 1 shows the location of larger second-growth trees and residual old-growth trees. Other findings are listed below:

- ** No old-growth stands remain on the property
- ** Some individual old-growth trees (residuals) do remain
- ** The south-facing slope of the canyon above the 1400 ft. contour is not suitable to support the growth of trees large enough to produce suitable platforms
- ** The only large opening in the North Fork watershed that might serve as a focal point for murrelet flight and vocalization interactions is the pond/play field area on Camp Villa Cathay

DAWN SURVEY

A single dawn survey was conducted by Steve Singer on August 4, 1996 following the existing P.S.G. protocol (Ralph et al. 1994). The survey was conducted on the play field area of Camp Villa Cathay about 1000 feet southwest of the point where the creek crosses the Ainsley property line. This survey station was selected for the following reasons:

- (1) It is the only large clearing near the creek on or near the study area, and consequently provides the best opportunity to sight flying murrelets.
- (2) The large grass field and adjacent large pond provide the type of landscape feature often used by murrelets as a focal point for their flight and vocalization behaviors - ie., as a gathering point for social interactions.
- (3) The station is far enough away from the stream to reduce background noise and allow for good audio detection conditions.
- (4) The station site is on the most likely flight corridor that murrelets would use in flying to or from possible nest sites on the Ainsley property.

Results of the survey confirm that this was a good location for the survey

station. However, this site had a few disadvantages. The first being that its location at the confluence of the North Fork and the main stem of Gazos Creek, makes it impossible to tell which canyon the birds are flying through. Secondly, it is 7500 feet downstream of the most likely potential nesting area on the property.

An alternative survey site located on a canyon-bottom landslide deposit about 6000 feet upstream would be much closer to the possible nesting area, but provides a more limited view of the sky and poor conditions for aural detections due to stream noise. However, this site could be used in the future to determine if any of the birds detected at Camp Villa Cathay are flying up the North Fork.

A summary of the dawn survey results is given in Table 1 below. Complete survey results can be found in Appendix B.

TABLE 1

<u>Dawn Survey Results - August 4, 1996</u>
Total Detections = 13
Total No. of Occupied Behaviors = 1
Total No. of Murrelets Detected Below Canopy = 0
Maximum No. of Murrelets Detected Simultaneously = 2

Although one occupied behavior was detected (a bird circling high above the canopy), none of the detections were highly indicative of nesting nearby since none occurred below canopy height.

The observation of 13 detections is a significant finding. Unfortunately, the location of the station at the confluence of the two forks of Gazos Creek makes it impossible to tell which direction the birds are heading. This number of detections occurring on a clear, sunny day near the end of the season suggests that a significant number of murrelets may pass over this survey station during the prime season. For comparison, murrelet surveys this month at the meadow in Big Basin Redwoods State Park, the inland site with the world record for the highest number of murrelet detections in any one day, resulted in only 11 detections on August 8, and zero detections on August 10.

CONCLUSION AND RECOMMENDATIONS

The quality of potential murrelet nesting habitat on this property is far from optimal as determined by the observed forest and tree conditions. On a scale that rated habitat as excellent, good, fair, or poor, the North Fork of Gazos Creek would rate as either fair or poor. This study did not determine if murrelets are actually using the property, but did suggest the possibility that a small number of birds might be doing so. Additional dawn surveys will be needed during the breeding season next summer to determine if this is the case. To prove the absence of murrelets from a site with a reasonable degree of accuracy, the P.S.G. protocol requires four dawn surveys to be conducted each year for two consecutive years. These surveys would best be conducted at a station near the area with possible nesting trees. The lack of forest openings in this area will make it difficult to find a suitable location, if indeed one does exist.

A more important consideration, in the conservation of Marbled Murrelets in the Santa Cruz Mountains is, I believe, the nature of their apparent use of the main stem of Gazos Creek. Is this a major flight corridor to Big Basin or possibly over the ridge to Butano? Is the playing field area at Camp Villa Cathay (which has no nesting habitat itself) an important socializing and gathering area for birds en route to other places? How many birds fly over this station during peak season? How many murrelets can be detected over the main stem of Gazos Creek to the west (lower Ainsley property)? These questions warrant further study.

If the Sempervirens Fund is interested in pursuing this work further, I would recommend conducting the following surveys next summer during the peak activity months of June and July:

- *** Two dawn surveys at the play field of Camp Villa Cathay (to determine the extent of murrelet activity in the general area)
- *** One survey on the lower, main stem of Gazos Creek
- *** One survey on the upper, main stem of Gazos Creek
- *** One survey on the Olmo Fire Road to see if birds are flying over the ridge toward Butano
- *** Two surveys at the alternate station site on the North Fork

To the extent feasible, two stations should be covered simultaneously each morning. Let me know if you are interested in continuing this research.

REFERENCES

1. Pacific Meridian Resources. 199?. Forest Cover Map of Ainley Corp. Property.
2. Ralph, C.J., S.K. Nelson, M.M. Shaughnessy, S.L. Miller, and T.E. Hamer. 1994. Methods for Surveying Marbled Murrelets in Forests. Technical Paper #1, Marbled Murrelet Technical Committee of the Pacific Seabird Group.
3. W.A.C. Corporation, 1984. Black and White Aerial Photos of San Mateo County, Scale 1:31,680. W.A.C. Corporation, Eugene, Oregon.

APPENDIX "A"

P.S.G. HABITAT ASSESSMENT GUIDELINES

(July 15, 1996 letter from T. E. Hamer and W. T. Everett of the Pacific Seabird Group)

APPENDIX "B"
(Marbled murrelet survey form for August 4, 1996)