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DRAFT

Summary of 2008 Marbled Murrelet Surveys
at “Girl Scout Creek” in Butano State Park,
San Mateo County, CA

Prepared for

California Department of Parks & Recreation

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Draft Report
May 14, 2009

INTRODUCTION

Dawn surveys for Marbled Murrelets (*Brachyramphus marmoratus*) were continued in 2008 at a parcel known as “Girl Scout Creek,” recently acquired by the California Department of Parks and Recreation and included within Butano State Park (Figure 1). Initial surveys conducted in 2002 had confirmed that murrelets were present at the site, and sub-canopy flight behavior classified the site as “occupied” habitat where murrelets were likely nesting (Mori 2002). Three years of additional surveys were begun in 2007 (Suddjian 2007).

STUDY AREA

The Girl Scout Creek parcel is 80 acres in the west ½ of the northeast ¼ of Section 20, Township 8 S, Range 4 West, approximately 4.7 air miles from the ocean (Figure 2). It is located on the upper half of a west-facing slope of the canyon of Butano Creek, a perennial stream that is as close as 0.28 mi. to the study area. Elevations in the study area range from approximately 560 to 980 feet above sea level. Slopes vary from moderate to steep, and a low ridge divides the parcel into northern and southern portions. The southern part is drained by the stream known as “Girl Scout Creek,” a small perennial tributary to Butano Creek; the northern part is drained by two smaller unnamed intermittent tributaries of Butano Creek.

Habitat conditions and human use patterns at the site were described in the 2007 summary report (Suddjian 2007); these remained unchanged in 2008.

METHODS

Survey methods followed the approved protocol to detect presence or occupancy of Marbled Murrelets in forests (Pacific Seabird Group 2003). Each survey began 45 minutes before sunrise and continued to at least 75 minutes after sunrise. In addition to information about murrelets, notes were kept on all bird species recorded, and additional information was recorded on locations, numbers and activities of any known murrelet predators (e.g., corvids and raptors). Two 10 minute-long unlimited distance point counts were made during each survey.

The two survey stations established in 2007 (#1 and #2) were surveyed again in 2008, and two other stations were added in 2008 (#3 and #4, Figure 2). The parcel’s closed forest canopy greatly limits options for suitable survey stations. The process of selecting additional stations was also hampered by a lack of demarcation of site boundaries (i.e., property lines) in the field and inadequacies of the U.S.G.S. topographic map.

Seven surveys were conducted at four stations in 2008, spanning May 9 to July 26 (Table 1). As per the recommendation in Suddjian 2007, a focus of effort was made at Station

#1. This location had significant murrelet activity in 2002 and 2007, and continued multiple surveys were conducted there to track changes in general levels of murrelet flight activity. Surveys at the three other stations were conducted in 2008 to sample more broadly on the site. All stations are located near potential murrelet nest trees. Station #1 has a decent view of the sky to the north of the station, looking toward the “Girl Scout Creek” drainage, where a tree fall has created a gap. It is surrounded by numerous potential nest trees. Station #2 has a more limited view of the sky, again to the north. Station #3 has a limited view of the sky toward the southwest, and is located in a tributary to “Girl Scout Creek”, just over a low ridge from Station #1. Station #4 is near Station #2, with a limited view of the sky.

RESULTS

Thirty-three species of birds were recorded during surveys in 2008 (Table 2). Marbled Murrelets were recorded on five surveys (Table 1), compared to seven surveys in 2007.

Marbled Murrelets

Station #1. Station #1 had low activity, with just 2-5 detections on three surveys and no detections on one survey (Table 1). Unlike 2002 and 2007, there was no significant murrelet activity recorded near the station in 2008. A single sub-canopy flight by two birds on May 9 was the only “occupied site” behavior observed all season on any of the seven surveys on the Girl Scout Creek site. The remaining nine detections recorded at Station #1 in 2008 were all auditory-only, mostly oriented to the west and northwest, and all but two were farther than 200 meters from the station.

Station #2.

The single survey at Station #2 had no murrelet detections.

Station #3.

The single survey at Station #3 had two auditory detections of birds calling in the distance, over 300 meters to the west and southwest. No activity was evident near the survey station.

Station #4.

The single survey at Station #4 had three detections. Two detections were auditory, of birds calling in the distance over 400 meters to the northwest. The other detection was a visual of a silent bird that passed in an arc over the station at about 1.7 canopy height, coming from the north and going off to the southwest. No other activity was evident near the survey station.

Murrelet Predators

Bird species that are known or potential murrelet predators recorded in the study area during 2008 were Sharp-shinned Hawk, Red-shouldered Hawk, Steller's Jay and Common Raven. Great Horned Owl was also heard, but far off to the west.

A Sharp-shinned Hawk was heard giving an alarm call to the north of Station #1 on May 9 and a male was seen flying over that station on June 10. Red-shouldered Hawks were heard on six of the seven survey mornings. Most registrations were probably of the same pair of hawks that held a territory along the western margin of the site, and they were recorded on several dates in or over the forest of the Girl Scout parcel, particularly near Station #1r the station; none were noted on other visits. Steller's Jay was recorded daily, with 3-5 individuals heard during the each dawn survey. The whole parcel probably supported 6 nesting pairs in 2008. A pair of Common Ravens was active in the southern half of the parcel (recorded from Stations #1 and #3) in May and June, but (as in 2007) no ravens were noted in July. The raven activity was mostly to the west of the stations, but on June 10 both ravens flew in below the canopy near Station #1 and were active down near the ground just northwest of the station.

DISCUSSION AND RECOMMENDATIONS

Murrelet activity was much lower in 2008 than in 2002 (Mori 2002) or 2007 (Suddjian 2007). Four dawn surveys conducted at Station #1 in July 2002 recorded consistent activity (4-59 detections) and also recorded sub-canopy flights and at least one tree landing. The four surveys at Station #1 in 2007 also had consistent activity, recording a total of 99 detections, with 33 sub-canopy flights. In contrast there were only 10 total detections at Station #1 in 2008, with just one sub-canopy flight.

Activity was also lower at the other stations in 2008 than in 2007. Three surveys at Station #2 in 2007 tallied a total of 35 detections and one sub-canopy flight, with activity noted on all surveys. Three surveys at Stations #2, #3 and #4 in 2008 had only five detections, no sub-canopy flights, and no activity on one of the mornings. Of all the detections recorded in 2008, only four involved birds that were actually over the Girl Scout Creek parcel; the rest were all distant to the southwest, west or northwest. Thus, while Marbled Murrelet continued present at the site, there was little indication that any nesting occurred or was attempted there in 2008.

Additional years of monitoring on the site would be needed to assess trends in murrelet activity, or to say whether 2008 was simply an "off year." Murrelet activity has been shown to be declining in other park lands (Suddjian 2009). However, since much of the interesting activity recorded in 2007 was thought to involve just two pairs of murrelets (Suddjian 2007), a change in their activity or nesting effort could have led to the marked reduction in activity recorded in 2008.

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Seven additional dawn surveys are planned to continue in 2009. It is recommended that coverage continue with four surveys at Station #1 to provide a reference for current activity levels. The remaining three surveys should be conducted at other locations to sample activity elsewhere in the parcel.

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Table 1. Summary of dawn murrelet surveys conducted at Girl Scout Creek in 2008.

Station	Date	Obs.	Cloud Cover	Precip.	Total # Dets.	# Occ.¹ Dets.
1	9 May 08	Suddjian	100%	fog	3	1
1	10 Jun 08	Suddjian	100%	none	0	0
1	9 July 08	Suddjian	100%	fog	2	0
1	26 July 08	Suddjian	100%	fog	5	0
2	20 May 08	Suddjian	0-100%	none	0	0
3	21 Jun 08	Suddjian	0%	none	2	0
4	13 July 08	Suddjian	100%	fog	3	0

1. Occ. Dets. = occupied site detection, i.e., detection murrelet(s) flying below the forest canopy or landing in trees.

Table 2. Bird species recorded during surveys at the Girl Scout Creek study area in May to July 2008.

Turkey Vulture (<i>Cathartes aura</i>) *	Hutton's Vireo (<i>Vireo huttoni</i>) *
Sharp-shinned Hawk (<i>Accipiter striatus</i>) *	Steller's Jay (<i>Cyanocitta stelleri</i>) **
Red-shouldered Hawk (<i>Buteo lineatus</i>)	Common Raven (<i>Corvus corax</i>)
Marbled Murrelet (<i>Brachyramphus marmoratus</i>) *	Violet-green Swallow (<i>Tachycineta thalassina</i>)
Band-tailed Pigeon (<i>Patagioenas fasciata</i>) **	Chestnut-backed Chickadee (<i>Poecile rufescens</i>) **
Mourning Dove (<i>Zenaida macroura</i>) *	Pygmy Nuthatch (<i>Sitta pygmaea</i>) *
Western Screech-Owl (<i>Megascops kennicotti</i>) **	Winter Wren (<i>Troglodytes troglodytes</i>) **
Northern Pygmy-Owl (<i>Glaucidium gnoma</i>)	Golden-crowned Kinglet (<i>Regulus satrapa</i>) *
Great Horned Owl (<i>Bubo virginianus</i>) [only heard far to west of study area]	Hermit Thrush (<i>Catharus guttatus</i>) *
Northern Saw-whet owl (<i>Aegolius acadicus</i>) **	American Robin (<i>Turdus migratorius</i>) *
Allen's Hummingbird (<i>Selasphorus sasin</i>) *	Wrentit (<i>Chamaea fasciata</i>) *
Acorn Woodpecker (<i>Melanerpes formicivorus</i>) *	Hermit Warbler (<i>Dendroica occidentalis</i>) *
Hairy Woodpecker (<i>Picoides villosus</i>) **	Wilson's Warbler (<i>Wilsonia pusilla</i>) **
Northern Flicker (<i>Colaptes auratus</i>)	Spotted Towhee (<i>Pipilo maculatus</i>) *
Pileated Woodpecker (<i>Dryocopus pileatus</i>) *	Dark-eyed Junco (<i>Junco hyemalis</i>) **
Pacific-slope Flycatcher (<i>Empidonax difficilis</i>) *	Purple Finch (<i>Carpodacus purpureus</i>) *
	Pine Siskin (<i>Carduelis pinus</i>) *

** Evidence of confirmed nesting in the study area observed in 2008

* Observations suggested species likely nests in the study area, but direct evidence was not obtained

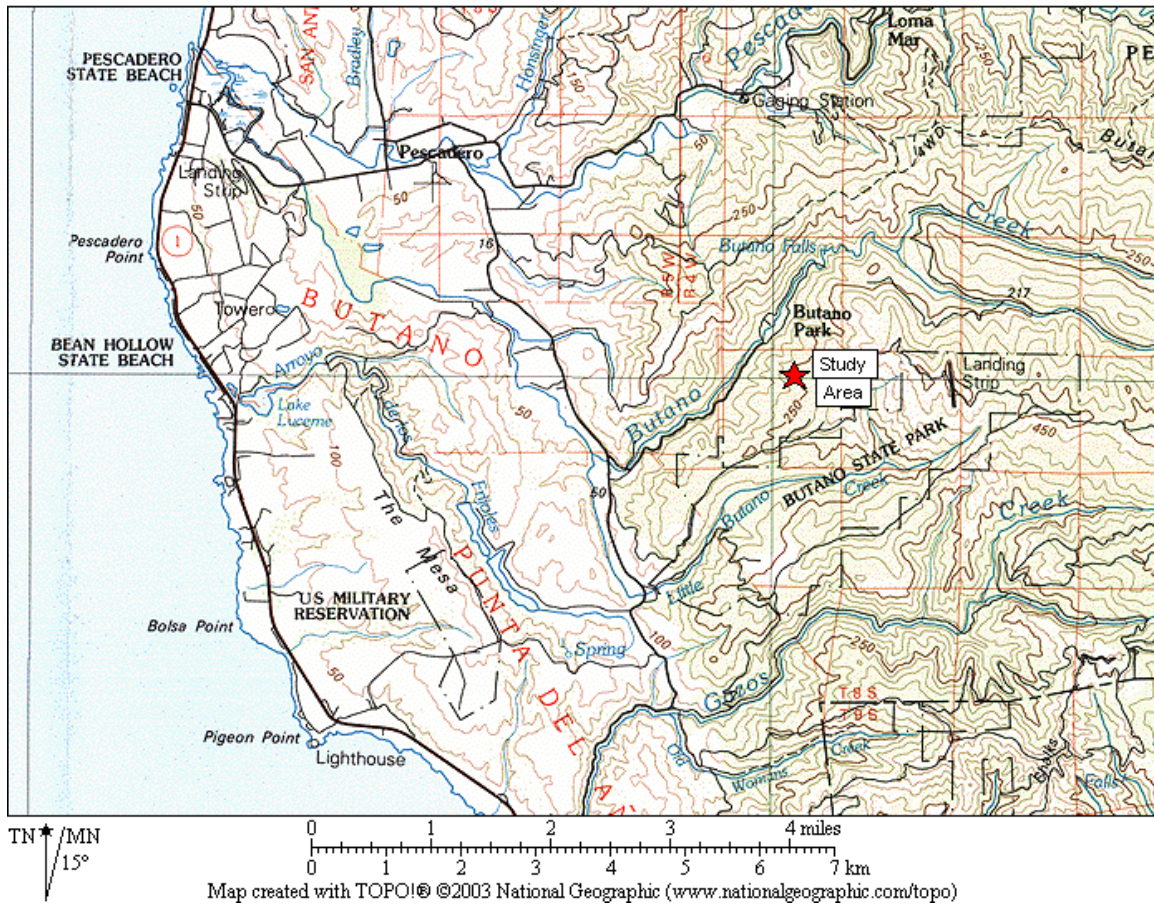


Figure 1. General location of the Girl Scout Creek study area (star).

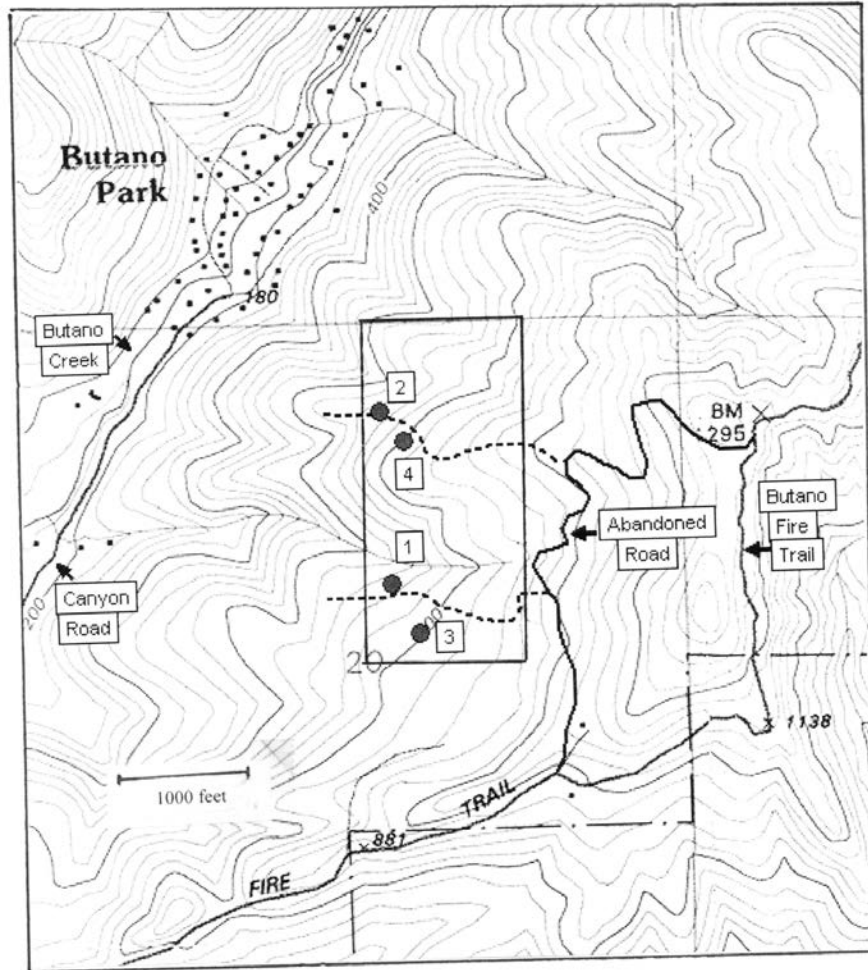


Figure 2. Girl Scout Creek study area, showing location of murrelet survey stations (circles) and the approximate routes of two existing trails on the site (dashed lines).