

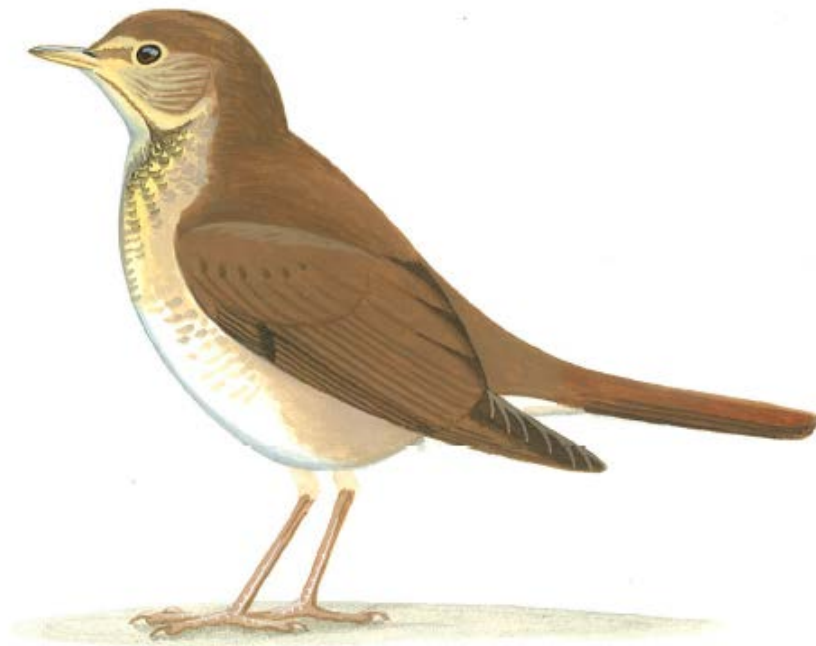


Riparian Landbird Monitoring in Golden Gate National Recreation Area and Point Reyes National Seashore

Progress Report for 2011-12

Natural Resource Data Series NPS/SFAN/NRDS—2014/709

prbo



ON THE COVER
Swainson's Thrush
Artwork by: Alan Pearson

Riparian Landbird Monitoring in Golden Gate National Recreation Area and Point Reyes National Seashore

Progress Report for 2011-12

Natural Resource Data Series NPS/SFAN/NRDS—2014/709

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U.S. Department of the Interior
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The National Park Service, Natural Resource Stewardship and Science office in Fort Collins, Colorado, publishes a range of reports that address natural resource topics. These reports are of interest and applicability to a broad audience in the National Park Service and others in natural resource management, including scientists, conservation and environmental constituencies, and the public.

The Natural Resource Data Series is intended for the timely release of basic data sets and data summaries. Care has been taken to assure accuracy of raw data values, but a thorough analysis and interpretation of the data has not been completed. Consequently, the initial analyses of data in this report are provisional and subject to change.

All manuscripts in the series receive the appropriate level of peer review to ensure that the information is scientifically credible, technically accurate, appropriately written for the intended audience, and designed and published in a professional manner.

This report received informal peer review by subject-matter experts who were not directly involved in the collection, analysis, or reporting of the data. Data in this report were collected and summarized using methods based on established, peer-reviewed protocols and were analyzed and interpreted within the guidelines of the protocols.

Views, statements, findings, conclusions, recommendations, and data in this report do not necessarily reflect views and policies of the National Park Service, U.S. Department of the Interior. Mention of trade names or commercial products does not constitute endorsement or recommendation for use by the U.S. Government.

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Executive Summary

This document contains a brief progress report for landbird monitoring conducted in 2011 in riparian habitats in Point Reyes National Seashore and Golden Gate National Recreation Area as part of the National Park Service's Inventory and Monitoring Project, and following protocols established for this purpose (Gardali et al. 2010).

Monitoring was conducted by PRBO Conservation Science (formerly Point Reyes Bird Observatory) at 15 locations within the parks using one or both of two methods, point counts and mist netting. Point count surveys were conducted during the breeding season of 2011, while mist netting was conducted during the breeding season and fall migration at four sites and also during winter at two sites. Of the 132 bird species detected, 31 were California Partners in Flight Focal Species, and 5 were also California Bird Species of Special Concern. Site narratives were updated to reflect changes in vegetation and other environmental factors. Public outreach is an important component of PRBO's mist netting programs; a total of 701 members of the public viewed mist netting at these sites between 1 May 2011 and 30 April 2012 through organized class visits, and many more as drop-in visitors.

A separate Analysis and Synthesis Report (Humple and Porzig 2014) examines patterns at these study sites from 1997-2011, whereas this progress report details the activities to date and basic summaries for 2011.

Acknowledgments

We thank the National Park Service, and especially Point Reyes National Seashore and Golden Gate National Recreation Area and their staff, for support of this monitoring program. We acknowledge PRBO biologists E. Porzig, T. Gardali, S. Roberts, and T. Gardali for collecting point count data in 2011; numerous PRBO interns and banding supervisors R. Cormier and M. Dettling for mist netting efforts; and T. Gardali for overseeing this project as PRBO's Pacific Coast and Central Valley Group Director. We thank T. Gardali, D. George, M. Herzog, M. Koenen, D. Press, W. Merkle, S. Allen, and M. Denn for their contributions to the development and/or implementation of the riparian monitoring plan.

Introduction

Landbirds were monitored in 2011-2012 in riparian habitat of Point Reyes National Seashore and Golden Gate National Recreation Area as part of the National Park Service's Inventory and Monitoring Program. The objectives of this ongoing monitoring are to monitor productivity and survival of bird populations, to detect any trends in these populations due to natural or human-caused environmental changes, and in certain circumstances to monitor the effects of management actions (Gardali et al. 2010). Landbirds are recognized as indicators of changing ecosystems (Carignan and Villard 2002) and climate (MacMynowski et al. 2007). They are also relatively easy to monitor and allow for monitoring a suite of species (Ralph et al. 1993, Hutto 1998) representing diverse ecological requirements. Finally, landbirds are an important natural resource, engendering a great deal of public interest. Several landbird species that occur regularly in the Point Reyes National Seashore (PORE) and Golden Gate National Recreation Area (GOGA) are state species of special concern or California Partners in Flight Focal Species (Shuford and Gardali 2008).

This document reports on the monitoring effort in PORE and GOGA from 1 May 2011 through 30 April 2012. Two methods were used in this monitoring: point counts and mist netting. This time period was the first breeding season in which the full suite of point counting was conducted since release of the protocol detailed in Natural Resource Report NPS/SFAN/NRR—2010/207 (Gardali et al. 2010). We report mist netting for that season and the following fall and winter. Mist netting took place at established locations where PRBO Conservation Science conducts ongoing long-term monitoring. Point counts were conducted both at sites that are monitored annually, and those which were surveyed historically but not recently and were selected to be surveyed through this protocol every third year. Continuing monitoring at these sites for which we have extensive data increases our power to detect long-term trends (Gardali et al. 2010).

Here we report species lists and numbers of individuals monitored by both methods, noting which species have special conservation status. We also describe changes to the protocol that were made during the time period of interest, especially to point count site narratives. A separate Analysis and Synthesis Report (Humple and Porzig 2014) summarizes the results from 1997-2011, whereas this report details the activities and basic summaries for 2011.

Methods

Protocol for this monitoring project is described fully in Gardali et al. (2010). Briefly, monitoring was conducted at established sites throughout Point Reyes National Seashore (PORE) and Golden Gate National Recreation Area (GOGA; Figure 1). Sites were predominantly located within willow-alder riparian areas, and all sites had been surveyed previously for inventory or other purposes. The point count transects were chosen from a larger number of historically surveyed sites based on habitat type and the existence of historical data (Table 1). Two exceptions were: 1) the inclusion of mist netting at the Palomarin Field Station in PORE, where habitat is predominantly coastal scrub, Douglas-fir, and mixed evergreen hardwood forest; this site is not included in the Analysis Report (Humple and Porzig 2014); and 2) the inclusion of mist netting and point counting at Pine Gulch, a riparian site on Marin County Open Space District (MCOSSD) land. Both sites are included in the monitoring protocol (Gardali et al. 2010) and are PRBO long-term monitoring sites, so are relevant to use.

Table 1. Point count (PC) and mist net (MN) sites in PORE and GOGA, Marin County, CA. Year begun refers to PC and MN, respectively; and number of years surveyed refers to PC.

Site Name	Code	# pts	Season	Method	Year begun	# yrs surveyed (PC) ^a
GOGA						
Lagunitas Creek	LACR	18	Breeding, Fall	PC, MN	1997, 2001	15
Gerbode Valley	GERB	18	Breeding	PC	1997	4
Redwood Creek (lower + upper)	RECR	24	Breeding, Fall	PC, MN	1997, 2001	15
Tennessee Valley	TEVA	13	Breeding	PC	1997	3
PORE						
Abbott's / Kehoe	ABKE	16	Breeding	PC	1997	3
Arroyo Honda	ARHO	7	Breeding	PC	1997	15 ^b
Bear Valley	BEVA	16	Breeding	PC	1997	3
Coast Camp	COCA	8	Breeding	PC	1996	4 ^b
Coast Trail Laguna	CTLA	13	Breeding	PC	1997	4
Lower Olema Creek	LOOL	11	Breeding	PC	1997	8
M Ranch	MRAN	8	Breeding	PC	1997	3
Muddy Hollow	MUHO	15	Year-round	PC, MN	1997, 1995	14
Upper Olema	UPOL	13	Breeding	PC	1997	4
Other						
Palomarin (PORE)	PALO	13	Year-round	MN	1966	
Pine Gulch	PIGU	5	Year-round	PC, MN	1997, 1994	15
Total Points		198				

^a Mist netting was conducted yearly since it was begun at each site; point counting was not done every year.

^b This is for years 1997-2011; ARHO and COCA also had some point count surveys done <1997 (not included herein).

The Variable Circular Plot method (SOP 6, Gardali et al. 2010) was used for all point count surveys. We surveyed 15 transects, each with 6-24 points and totaling 198 points. Surveys began 15 minutes after local sunrise and were completed within four hours, when bird activity is generally the highest. Each point was surveyed for a 5-minute sampling period. Individuals of all species detected were recorded as occurring in distance intervals from the point: 0-10 meters (m), 10-20m, 20-30m, 30-50m, 50-100m, and >100m. Biologists with experience identifying birds of the region by sight and sound conducted all point counts. Point count surveys were conducted twice during the peak landbird breeding season, between 1 May and 30 June, with a minimum of 10 days between the two visits. Redwood Creek is effectively split into subtransects (Lower and Upper; see Appendix A) as it requires two days to complete.

For mist netting, we generally followed the nationally standardized Monitoring Avian Productivity and Survival protocols (MAPS; DeSante et al. 2000); SOP 7 of the riparian monitoring protocol (Gardali et al. 2010) defines fully how PRBO protocols differ from MAPS protocols. At Palomarin, nets were run six days per week May through November and three days per week December through April, weather permitting. At all other sites, nets were run approximately once every 10 days November through mid-August, and once every seven days mid-August through October, to reduce the chance of missing pulses of migrating birds. The mist netting stations at Redwood and Lagunitas creeks were operated 1 May through 31 October; all other stations were operated year-round. There were 20 nets at Palomarin, 11 at Redwood Creek, and 10 at each of the other sites. All birds captured were identified to species, age, and sex using criteria in Pyle (1997) and most were banded with a uniquely numbered aluminum band provided by the Bird Banding Laboratory of the U.S. Geological Survey/Biological Resources Division. Some species (e.g., gamebirds; hummingbirds at sites other than Palomarin) were not banded due to permitting or other constraints. Mist netting was conducted primarily by PRBO interns who received at least two weeks training in safe capture, handling and measuring techniques by their staff supervisor, and by the staff supervisor.

For both methods, work was not conducted during periods of rain, high wind, or other adverse weather conditions, as these can affect bird behavior, capture rates, and detectability, and in the case of mist netting can affect bird safety.

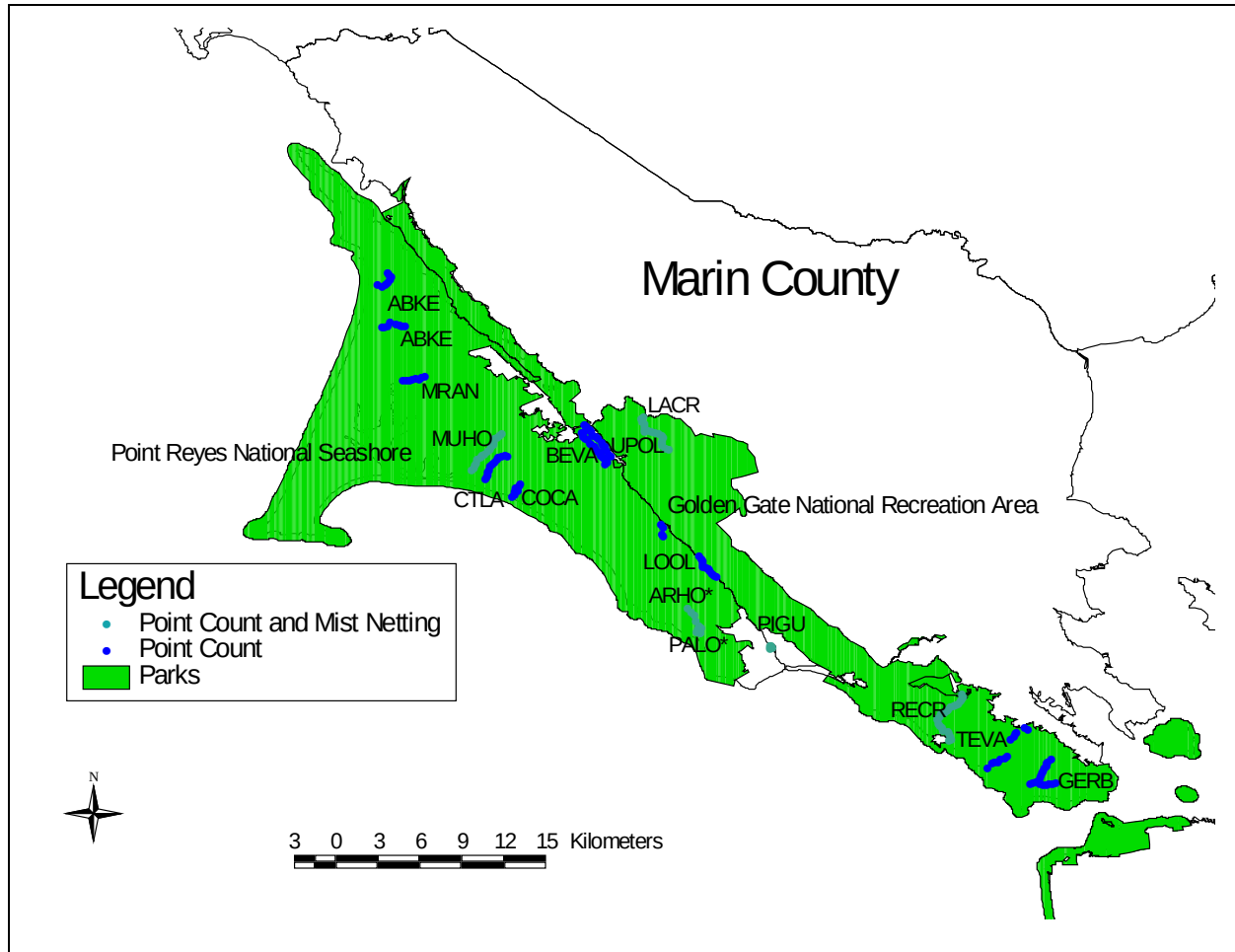


Figure 1. Locations of point count and mist netting stations in PORE and GOGA, Marin County, CA. Full site names are in Table 1. *Arroyo Hondo (ARHO, point count) and Palomarin (PALO, mist netting) are adjacent to each other and do not survey the same habitat as do the other point count-mist net sites.

Results

Six biologists conducted point counts and 20 biologists conducted mist netting between 1 May 2011 and 30 April 2012 (Table 2). Point count surveys were conducted during May (visit 1) and June (visit 2) 2011 (Table 3). In order to correct captures for varying effort among years, the amount of time mist nets are operated is recorded for each site and season (Table 4).

A total of 132 species were detected by point counts and mist netting combined (Table 5). Of these, 35 were detected by mist netting only, 40 by point counts only, and the remaining 57 species by both methods. Thirty-one species detected are California Partners in Flight Focal Species (CalPIF 2012) and of these, five are also California Bird Species of Special Concern (Table 5, Shuford and Gardali 2008).

The ten most-commonly detected species during point counts, in decreasing order of abundance, were Song Sparrow, Swainson's Thrush, Wilson's Warbler, Wrentit, Spotted Towhee, American Goldfinch, Chestnut-backed Chickadee, California Quail, Bewick's Wren, and Orange-crowned Warbler (Table 6). Of the 98 species detected during point counts, 43 species had ten or fewer individuals detected (Table 6).

The ten most-commonly detected species during mist netting, in decreasing abundance, were Song Sparrow, Wilson's Warbler, Swainson's Thrush, Wrentit, Fox Sparrow, Hermit Thrush, Chestnut-backed Chickadee, Ruby-crowned Kinglet, Purple Finch and Oregon Junco (Table 7). Of the 93 species captured during mist netting, 48 had 10 or fewer individuals caught (Table 7).

Table 2. Observers who conducted field work, Marin County PORE/GOGA/MCOSD sites, 2011.

Name	Role	Method*	Year
Diana Humple	Project Lead	PC, MN	2011, 2012
Scott Jennings	PC Field Lead	PC, MN	2011
Renée Cormier	MN Field Lead	PC, MN	2011, 2012
Tom Gardali	Project Lead	PC	2011
Elizabeth Porzig	Technician	PC, MN	2011
Sam Roberts	Intern	PC, MN	2011
Amanda Gallinat	Intern bander	MN	2011
Maria Costantini	Intern bander	MN	2011
Kathleen Grady	Intern bander	MN	2011
Cara Whalen	Intern bander	MN	2011
Talal Baniowda	Intern bander	MN	2011
Xeronimo Castaneda	Intern bander	MN	2011
Melissa Brady	Intern bander	MN	2011
Dan Lipp	Intern bander	MN	2011, 2012
Luke Musher	Intern bander	MN	2011, 2012
Cory Ritter	Intern bander	MN	2011, 2012
Francesca Massarotto	Intern bander	MN	2011, 2012
Robyn Smith	Intern bander	MN	2012
Kate Freeman	Intern bander	MN	2012
Mike Krzywicki	Intern bander	MN	2012
Lara White	Intern bander	MN	2012

*PC= point count; MN= mist netting

Table 3. Dates of point count surveys by transect, Marin County PORE/GOGA/MCOSD sites, 2011.

Transect	Station Code	Visit 1	Visit 2
Abbot's/Kehoe	ABKE	5/25/2011	6/15/2011
Arroyo Hondo	ARHO	5/11/2011	6/19/2011
Bear Valley	BEVA	5/21/2011	6/23/2011
Coast Camp	COCA	5/20/2011	6/24/2011
Coast Trail Laguna	CTLA	5/12/2011	6/12/2011
Gerbode Valley	GERB	5/20/2011	6/9/2011
Lagunitas Creek	LAGU	5/26/2011	6/13/2011
Lower Olema Creek	LOOL	5/25/2011, 5/26/2011*	6/10/2011
M Ranch	MRAN	5/20/2011	6/16/2011
Muddy Hollow	MUHO	5/10/2011	6/7/2011
Pine Gulch	PIGU	5/11/2011	6/16/2011
Redwood Creek**	RECR	5/9/2011, 5/16/2011	6/2/2011, 6/22/2011
Tennessee Valley	TEVA	5/20/2011	6/27/2011
Upper Olema Creek	UPOL	5/27/2011	6/14/2011

* Visit conducted over two days for logistical reasons.

** Redwood Creek transect is subdivided into two subtransects (Upper and Lower; see Appendix A) due to the number of points, thus multiple survey dates.

Table 4. Number of mist net hours by station, Marin County PORE/GOGA/MCOSA sites, 1 May 2011 - 30 April 2012. One mist net-hour is one 12-meter mist net operated for 1 hour.

Station	Summer 2011	Fall 2011	Winter 2011-12
Palomarin	9336	8073	10437
Pine Gulch	608	639	993
Muddy Hollow	574	682	907
Redwood Creek*	640	732	0
Lagunitas Creek*	635	716	0

*Stations operated 1 May - 31 Oct.

Table 5. All species recorded by point count and mist netting, Marin County PORE/GOGA/MCOSA sites combined, May 2011 through April 2012.

Common Name	Latin Name	Method***
Canada Goose	<i>Branta canadensis</i>	PC
Gadwall	<i>Anas strepera</i>	PC
Mallard	<i>Anas platyrhynchos</i>	PC
Cinnamon Teal	<i>Anas cyanoptera</i>	PC
Surf Scoter	<i>Melanitta perspicillata</i>	PC
Common Merganser	<i>Mergus merganser</i>	PC
California Quail	<i>Callipepla californica</i>	PC, MN
Common Peafowl	<i>Pavo cristatus</i>	PC
Wild Turkey	<i>Meleagris gallopavo</i>	PC
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	PC
Green Heron	<i>Butorides virescens</i>	PC
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	PC
Turkey Vulture	<i>Cathartes aura</i>	PC
Osprey	<i>Pandion haliaetus</i>	PC
Northern Harrier *, **	<i>Circus cyaneus</i>	PC
Sharp-shinned Hawk	<i>Accipiter striatus</i>	MN
Cooper's Hawk	<i>Accipiter cooperii</i>	PC, MN
Red-shouldered Hawk	<i>Buteo lineatus</i>	PC, MN
Red-tailed Hawk	<i>Buteo jamaicensis</i>	PC
American Kestrel	<i>Falco sparverius</i>	PC
Virginia Rail	<i>Rallus limicola</i>	PC
Killdeer	<i>Charadrius vociferus</i>	PC
Wilson's Snipe	<i>Gallinago delicata</i>	MN
Western Gull	<i>Larus occidentalis</i>	PC
Caspian Tern	<i>Hydroprogne caspia</i>	PC
Common Murre	<i>Uria aalge</i>	PC
Band-tailed Pigeon	<i>Patagioenas fasciata</i>	PC, MN
Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	PC
Mourning Dove	<i>Zenaida macroura</i>	PC, MN
Broad-billed Hummingbird	<i>Cynanthus latirostris</i>	MN
Anna's Hummingbird	<i>Calypte anna</i>	PC, MN
Rufous Hummingbird	<i>Selasphorus rufus</i>	MN
Allen's Hummingbird	<i>Selasphorus sasin</i>	PC, MN
Acorn Woodpecker *	<i>Melanerpes formicivorus</i>	PC
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	MN
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>	MN

Table 5. All species recorded by point count and mist netting, Marin County PORE/GOGA/MCOSA sites combined, May 2011 through April 2012 (continued).

Common Name	Latin Name	Method***
Nuttall's Woodpecker *	<i>Picoides nuttallii</i>	PC
Downy Woodpecker	<i>Picoides pubescens</i>	PC, MN
Hairy Woodpecker	<i>Picoides villosus</i>	PC, MN
Northern Flicker	<i>Colaptes auratus</i>	PC
Northern Flicker (Yellow-shafted)	<i>Colaptes auratus auratus</i>	MN
Northern Flicker (Red-shafted)	<i>Colaptes auratus cafer</i>	PC, MN
Olive-sided Flycatcher *, **	<i>Contopus cooperi</i>	PC, MN
Pileated Woodpecker *	<i>Dryocopus pileatus</i>	MN
Western Wood-Pewee	<i>Contopus sordidulus</i>	PC, MN
Hammond's Flycatcher	<i>Empidonax hammondi</i>	MN
Dusky Flycatcher	<i>Empidonax oberholseri</i>	MN
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>	PC, MN
Western Flycatcher	<i>Empidonax difficilis/occid.</i>	MN
Black Phoebe	<i>Sayornis nigricans</i>	PC, MN
Say's Phoebe	<i>Sayornis saya</i>	MN
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>	PC
Hutton's Vireo	<i>Vireo huttoni</i>	PC, MN
Warbling Vireo *	<i>Vireo gilvus</i>	PC, MN
Philadelphia Vireo	<i>Vireo philadelphicus</i>	MN
Steller's Jay	<i>Cyanocitta stelleri</i>	PC, MN
Western Scrub-Jay *	<i>Aphelocoma californica</i>	PC, MN
American Crow	<i>Corvus brachyrhynchos</i>	PC
Common Raven	<i>Corvus corax</i>	PC
Tree Swallow *	<i>Tachycineta bicolor</i>	PC, MN
Violet-green Swallow	<i>Tachycineta thalassina</i>	PC
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	PC
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	PC, MN
Barn Swallow	<i>Hirundo rustica</i>	PC, MN
Chestnut-backed Chickadee	<i>Poecile rufescens</i>	PC, MN
Oak Titmouse *	<i>Baeolophus inornatus</i>	PC
Bushtit	<i>Psaltiriparus minimus</i>	PC, MN
Red-breasted Nuthatch *	<i>Sitta canadensis</i>	MN
Pygmy Nuthatch	<i>Sitta pygmaea</i>	PC
Brown Creeper *	<i>Certhia americana</i>	PC, MN
Bewick's Wren	<i>Thryomanes bewickii</i>	PC, MN
House Wren	<i>Troglodytes aedon</i>	PC, MN
Pacific Wren	<i>Troglodytes pacificus</i>	PC, MN
Marsh Wren	<i>Cistothorus palustris</i>	PC, MN
Blue-gray Gnatcatcher *	<i>Polioptila caerulea</i>	MN
Golden-crowned Kinglet *	<i>Regulus satrapa</i>	PC, MN
Ruby-crowned Kinglet	<i>Regulus calendula</i>	MN
Wrentit *	<i>Chamaea fasciata</i>	PC, MN
Western Bluebird *	<i>Sialia mexicana</i>	PC
Swainson's Thrush *	<i>Catharus ustulatus</i>	PC, MN
Hermit Thrush	<i>Catharus guttatus</i>	PC, MN
American Robin	<i>Turdus migratorius</i>	PC, MN
Varied Thrush	<i>Ixoreus naevius</i>	MN

Table 5. All species recorded by point count and mist netting, Marin County PORE/GOGA/MCOSA sites combined, May 2011 through April 2012 (continued).

Common Name	Latin Name	Method***
Northern Mockingbird	<i>Mimus polyglottos</i>	MN
European Starling	<i>Sturnus vulgaris</i>	PC, MN
Cedar Waxwing	<i>Bombycilla cedrorum</i>	PC
Tennessee Warbler	<i>Oreothlypis peregrina</i>	MN
Orange-crowned Warbler	<i>Oreothlypis celata</i>	PC, MN
Nashville Warbler	<i>Oreothlypis ruficapilla</i>	MN
Yellow Warbler *, **	<i>Setophaga petechia</i>	PC, MN
Yellow-rumped Warbler (Myrtle)	<i>Setophaga coronata coronata</i>	MN
Yellow-rumped Warbler (Audubon's)	<i>Setophaga coronata auduboni</i>	MN
Black-throated Gray Warbler *	<i>Setophaga nigrescens</i>	MN
Townsend's Warbler	<i>Setophaga townsendi</i>	MN
Hermit Warbler	<i>Setophaga occidentalis</i>	MN
Ovenbird	<i>Seiurus aurocapilla</i>	MN
MacGillivray's Warbler *	<i>Geothlypis tolmiei</i>	PC, MN
Common Yellowthroat *	<i>Geothlypis trichas</i>	PC, MN
Wilson's Warbler *	<i>Cardellina pusilla</i>	PC, MN
Yellow-breasted Chat *, **	<i>Icteria virens</i>	PC, MN
Spotted Towhee	<i>Pipilo maculatus</i>	PC, MN
Rufous-crowned Sparrow *	<i>Aimophila ruficeps</i>	PC
California Towhee	<i>Melospiza crissalis</i>	PC, MN
Chipping Sparrow	<i>Spizella passerina</i>	PC
Clay-colored Sparrow	<i>Spizella pallida</i>	MN
Lark Sparrow *	<i>Chondestes grammacus</i>	PC
Savannah Sparrow *	<i>Passerculus sandwichensis</i>	PC, MN
Grasshopper Sparrow *, **	<i>Ammodramus savannarum</i>	PC, MN
Nelson's Sparrow	<i>Ammodramus nelsoni</i>	MN
Fox Sparrow *	<i>Passerella iliaca</i>	MN
Song Sparrow *	<i>Melospiza melodia</i>	PC, MN
Lincoln's Sparrow	<i>Melospiza lincolni</i>	MN
Swamp Sparrow	<i>Melospiza georgiana</i>	MN
White-throated Sparrow	<i>Zonotrichia albicollis</i>	MN
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	PC
White-crowned Sparrow (Gambel's)	<i>Zonotrichia leucophrys gambelii</i>	MN
White-crowned Sparrow (Puget Sound)	<i>Zonotrichia leucophrys pugetensis</i>	MN
White-crowned Sparrow (Nuttall's) *	<i>Zonotrichia leucophrys nuttalli</i>	PC, MN
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	MN
Oregon Junco	<i>Junco hyemalis oregonus</i>	PC, MN
Western Tanager *	<i>Piranga ludoviciana</i>	PC, MN
Black-headed Grosbeak *	<i>Pheucticus melanocephalus</i>	PC, MN
Lazuli Bunting	<i>Passerina amoena</i>	PC, MN
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	PC, MN
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	PC
Brown-headed Cowbird	<i>Molothrus ater</i>	PC, MN
Purple Finch	<i>Carpodacus purpureus</i>	PC, MN
House Finch	<i>Carpodacus mexicanus</i>	PC, MN
Pine Siskin	<i>Spinus pinus</i>	PC, MN
Lesser Goldfinch	<i>Spinus psaltria</i>	PC, MN

Table 5. All species recorded by point count and mist netting, Marin County PORE/GOGA/MCOSA sites combined, May 2011 through April 2012 (continued).

Common Name	Latin Name	Method***
American Goldfinch	<i>Spinus tristis</i>	PC, MN
House Sparrow	<i>Passer domesticus</i>	PC

* = California Partners in Flight Focal Species.

** = California Bird Species of Special Concern.

***PC = point count and MN = mist netting.

Table 6. Number of individuals of each species detected during point counts, Marin County PORE/GOGA/MCOSA sites, 2011. Includes observations at all distances (not just within 50m) and both visits, so count may not represent actual abundance.

Common Name	Latin Name	PC Count
Canada Goose	<i>Branta canadensis</i>	1
Gadwall	<i>Anas strepera</i>	1
Mallard	<i>Anas platyrhynchos</i>	17
Cinnamon Teal	<i>Anas cyanoptera</i>	2
Surf Scoter	<i>Melanitta perspicillata</i>	1
Common Merganser	<i>Mergus merganser</i>	1
California Quail	<i>Callipepla californica</i>	223
Common Peafowl	<i>Pavo cristatus</i>	1
Wild Turkey	<i>Meleagris gallopavo</i>	7
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2
Green Heron	<i>Butorides virescens</i>	2
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	1
Turkey Vulture	<i>Cathartes aura</i>	23
Osprey	<i>Pandion haliaetus</i>	3
Northern Harrier	<i>Circus cyaneus</i>	5
Cooper's Hawk	<i>Accipiter cooperii</i>	1
Red-shouldered Hawk	<i>Buteo lineatus</i>	8
Red-tailed Hawk	<i>Buteo jamaicensis</i>	21
American Kestrel	<i>Falco sparverius</i>	1
Virginia Rail	<i>Rallus limicola</i>	3
Killdeer	<i>Charadrius vociferus</i>	3
Western Gull	<i>Larus occidentalis</i>	19
Caspian Tern	<i>Hydroprogne caspia</i>	5
Common Murre	<i>Uria aalge</i>	10
Band-tailed Pigeon	<i>Patagioenas fasciata</i>	52
Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	33
Mourning Dove	<i>Zenaida macroura</i>	104
Anna's Hummingbird	<i>Calypte anna</i>	87
Allen's Hummingbird	<i>Selasphorus sasin</i>	60
Acorn Woodpecker	<i>Melanerpes formicivorus</i>	9
Nuttall's Woodpecker	<i>Picoides nuttallii</i>	8
Downy Woodpecker	<i>Picoides pubescens</i>	32
Hairy Woodpecker	<i>Picoides villosus</i>	18
Northern Flicker	<i>Colaptes auratus</i>	15
Red-shafted Flicker	<i>Colaptes auratus cafer</i>	36

Table 6. Number of individuals of each species detected during point counts, Marin County PORE/GOGA/MCOSA sites, 2011. Includes observations at all distances (not just within 50m) and both visits, so count may not represent actual abundance (continued).

Common Name	Latin Name	PC Count
Olive-sided Flycatcher	<i>Contopus cooperi</i>	41
Western Wood-Pewee	<i>Contopus sordidulus</i>	66
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>	136
Black Phoebe	<i>Sayornis nigricans</i>	18
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>	17
Hutton's Vireo	<i>Vireo huttoni</i>	50
Warbling Vireo	<i>Vireo gilvus</i>	178
Steller's Jay	<i>Cyanocitta stelleri</i>	86
Western Scrub-Jay	<i>Aphelocoma californica</i>	147
American Crow	<i>Corvus brachyrhynchos</i>	114
Common Raven	<i>Corvus corax</i>	97
Tree Swallow	<i>Tachycineta bicolor</i>	81
Violet-green Swallow	<i>Tachycineta thalassina</i>	30
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	2
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	133
Barn Swallow	<i>Hirundo rustica</i>	18
Chestnut-backed Chickadee	<i>Poecile rufescens</i>	232
Oak Titmouse	<i>Baeolophus inornatus</i>	1
Bushtit	<i>Psaltirparus minimus</i>	83
Pygmy Nuthatch	<i>Sitta pygmaea</i>	6
Brown Creeper	<i>Certhia americana</i>	6
Bewick's Wren	<i>Thryomanes bewickii</i>	210
House Wren	<i>Troglodytes aedon</i>	1
Pacific Wren	<i>Troglodytes pacificus</i>	93
Marsh Wren	<i>Cistothorus palustris</i>	70
Golden-crowned Kinglet	<i>Regulus satrapa</i>	14
Wrentit	<i>Chamaea fasciata</i>	389
Western Bluebird	<i>Sialia mexicana</i>	5
Swainson's Thrush	<i>Catharus ustulatus</i>	532
Hermit Thrush	<i>Catharus guttatus</i>	1
American Robin	<i>Turdus migratorius</i>	89
European Starling	<i>Sturnus vulgaris</i>	51
Cedar Waxwing	<i>Bombycilla cedrorum</i>	10
Orange-crowned Warbler	<i>Oreothlypis celata</i>	185
Yellow Warbler	<i>Setophaga petechia</i>	3
MacGillivray's Warbler	<i>Geothlypis tolmiei</i>	6
Common Yellowthroat	<i>Geothlypis trichas</i>	158
Wilson's Warbler	<i>Cardellina pusilla</i>	452
Yellow-breasted Chat	<i>Icteria virens</i>	2
Spotted Towhee	<i>Pipilo maculatus</i>	295
Rufous-crowned Sparrow	<i>Aimophila ruficeps</i>	1
California Towhee	<i>Melospiza crissalis</i>	63
Chipping Sparrow	<i>Spizella passerina</i>	1
Lark Sparrow	<i>Chondestes grammacus</i>	1
Savannah Sparrow	<i>Passerculus sandwichensis</i>	9
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	3

Table 6. Number of individuals of each species detected during point counts, Marin County PORE/GOGA/MCOSA sites, 2011. Includes observations at all distances (not just within 50m) and both visits, so count may not represent actual abundance (continued).

Common Name	Latin Name	PC Count
Song Sparrow	<i>Melospiza melodia</i>	857
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	42
White-crowned Sparrow (Nuttall's)	<i>Zonotrichia leucophrys nuttalli</i>	28
Oregon Junco	<i>Junco hyemalis oregonus</i>	22
Western Tanager	<i>Piranga ludoviciana</i>	2
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	120
Lazuli Bunting	<i>Passerina amoena</i>	3
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	118
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	55
Brown-headed Cowbird	<i>Molothrus ater</i>	76
Purple Finch	<i>Carpodacus purpureus</i>	110
House Finch	<i>Carpodacus mexicanus</i>	13
Pine Siskin	<i>Spinus pinus</i>	7
Lesser Goldfinch	<i>Spinus psaltria</i>	8
American Goldfinch	<i>Spinus tristis</i>	244
House Sparrow	<i>Passer domesticus</i>	2

Table 7. Number of individuals of each species captured during mist netting, Marin County PORE/GOGA/MCOSA sites combined, 2011.

Common Name	Latin Name	MN Count
California Quail	<i>Callipepla californica</i>	16
Sharp-shinned Hawk	<i>Accipiter striatus</i>	14
Cooper's Hawk	<i>Accipiter cooperii</i>	2
Red-shouldered Hawk	<i>Buteo lineatus</i>	2
Wilson's Snipe	<i>Gallinago delicata</i>	2
Band-tailed Pigeon	<i>Patagioenas fasciata</i>	1
Mourning Dove	<i>Zenaida macroura</i>	8
Anna's Hummingbird	<i>Calypte anna</i>	45
Rufous Hummingbird	<i>Selasphorus rufus</i>	3
Allen's Hummingbird	<i>Selasphorus sasin</i>	89
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	1
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>	5
Downy Woodpecker	<i>Picoides pubescens</i>	15
Hairy Woodpecker	<i>Picoides villosus</i>	16
Yellow-shafted Flicker	<i>Colaptes a. auratus</i>	1
Red-shafted Flicker	<i>Colaptes a. cafer</i>	10
Pileated Woodpecker	<i>Dryocopus pileatus</i>	1
Olive-sided Flycatcher	<i>Contopus cooperi</i>	2
Western Wood-Pewee	<i>Contopus sordidulus</i>	2
Hammond's Flycatcher	<i>Empidonax hammondi</i>	1
Dusky Flycatcher	<i>Empidonax oberholseri</i>	1
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>	63
Western Flycatcher	<i>Empidonax difficilis/occid.</i>	25
Black Phoebe	<i>Sayornis nigricans</i>	11
Say's Phoebe	<i>Sayornis saya</i>	1

Table 7. Number of individuals of each species captured during mist netting, Marin County PORE/GOGA/MCOSA sites combined, 2011 (continued).

Common Name	Latin Name	MN Count
Hutton's Vireo	<i>Vireo huttoni</i>	25
Warbling Vireo	<i>Vireo gilvus</i>	31
Philadelphia Vireo	<i>Vireo philadelphicus</i>	1
Steller's Jay	<i>Cyanocitta stelleri</i>	25
Western Scrub-Jay	<i>Aphelocoma californica</i>	7
Tree Swallow	<i>Tachycineta bicolor</i>	2
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	1
Barn Swallow	<i>Hirundo rustica</i>	11
Chestnut-backed Chickadee	<i>Poecile rufescens</i>	131
Bushtit	<i>Psaltirparus minimus</i>	64
Red-breasted Nuthatch	<i>Sitta canadensis</i>	4
Brown Creeper	<i>Certhia americana</i>	18
Bewick's Wren	<i>Thryomanes bewickii</i>	75
House Wren	<i>Troglodytes aedon</i>	3
Pacific Wren	<i>Troglodytes pacificus</i>	71
Marsh Wren	<i>Cistothorus palustris</i>	1
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>	1
Golden-crowned Kinglet	<i>Regulus satrapa</i>	16
Ruby-crowned Kinglet	<i>Regulus calendula</i>	120
Wrentit	<i>Chamaea fasciata</i>	262
Swainson's Thrush	<i>Catharus ustulatus</i>	283
Hermit Thrush	<i>Catharus guttatus</i>	153
American Robin	<i>Turdus migratorius</i>	56
Varied Thrush	<i>Ixoreus naevius</i>	18
Northern Mockingbird	<i>Mimus polyglottos</i>	1
European Starling	<i>Sturnus vulgaris</i>	2
Tennessee Warbler	<i>Oreothlypis peregrina</i>	1
Orange-crowned Warbler	<i>Oreothlypis celata</i>	86
Nashville Warbler	<i>Oreothlypis ruficapilla</i>	1
Yellow Warbler	<i>Setophaga petechia</i>	14
Myrtle Warbler	<i>Setophaga coronata coronata</i>	35
Audubon's Warbler	<i>Setophaga coronata auduboni</i>	6
Black-throated Gray Warbler	<i>Setophaga nigrescens</i>	1
Townsend's Warbler	<i>Setophaga townsendi</i>	39
Hermit Warbler	<i>Setophaga occidentalis</i>	2
Ovenbird	<i>Seiurus aurocapilla</i>	1
MacGillivray's Warbler	<i>Geothlypis tolmiei</i>	4
Common Yellowthroat	<i>Geothlypis trichas</i>	38
Wilson's Warbler	<i>Cardellina pusilla</i>	391
Yellow-breasted Chat	<i>Icteria virens</i>	1
Spotted Towhee	<i>Pipilo maculatus</i>	72
California Towhee	<i>Melospiza crissalis</i>	5
Clay-colored Sparrow	<i>Spizella pallida</i>	1
Savannah Sparrow	<i>Passerculus sandwichensis</i>	1
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	1
Nelson's Sparrow	<i>Ammodramus nelsoni</i>	1
Fox Sparrow	<i>Passerella iliaca</i>	185
Song Sparrow	<i>Melospiza melodia</i>	435

Table 7. Number of individuals of each species captured during mist netting, Marin County PORE/GOGA/MCOSD sites combined, 2011 (continued).

Common Name	Latin Name	MN Count
Lincoln's Sparrow	<i>Melospiza lincolnii</i>	44
Swamp Sparrow	<i>Melospiza georgiana</i>	2
White-throated Sparrow	<i>Zonotrichia albicollis</i>	3
White-crowned Sparrow (Gambell's)	<i>Zonotrichia l. gambelii</i>	1
White-crowned Sparrow (Puget Sound)	<i>Zonotrichia l. pugetensis</i>	18
White-crowned Sparrow (Nuttall's)	<i>Zonotrichia l. nuttalli</i>	12
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	51
Oregon Junco	<i>Junco h. oregonus</i>	100
Western Tanager	<i>Piranga ludoviciana</i>	2
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	6
Lazuli Bunting	<i>Passerina amoena</i>	4
Brown-headed Cowbird	<i>Molothrus ater</i>	4
Purple Finch	<i>Carpodacus purpureus</i>	105
House Finch	<i>Carpodacus mexicanus</i>	3
Pine Siskin	<i>Spinus pinus</i>	27
Lesser Goldfinch	<i>Spinus psaltria</i>	2
American Goldfinch	<i>Spinus tristis</i>	63

Discussion

We do not present any trends or figures, or discuss the above results in any depth, as the separate Analysis and Synthesis Report (Humple and Porzig 2014) includes in-depth analyses and discussion.

Changes to the Monitoring Protocol

Biologists created narratives (site descriptions) for four point count transects for which narratives did not exist (Abbotts/Kehoe Beach, Coast Camp, Gerbode Valley, and Tennessee Valley). For all other point count transects, biologists updated route descriptions to reflect current vegetation, trail, etc. conditions to improve navigation to points. GPS coordinates were also corrected where site descriptions were unambiguous but GPS coordinates were incorrect. In rare instances, substantial changes to plant growth occurred since the points were established. Accessing these points would have required a level of disturbance to the area that may have altered bird behavior and compromised the survey, and would have been unreasonable within the time frame of point count surveys. In these cases the points were relocated to sites which were as similar as possible to the original site, new GPS coordinates were recorded, and site descriptions were edited to reflect the change. All changes to narratives were described in the “revision history” imbedded within each of the narratives. Appendix A contains the modified Standard Operating Procedure 4, including all changes described above.

An additional clarification should be made to the monitoring protocol (Gardali et al. 2010), although it does not require any changes to Standard Operating Procedures. On page 18, under Sampling Frequency and Schedule, it states that point count surveys should be conducted “between late May and June”. However, this sampling frequency is incorrect, and in SOP 6 (Conducting Variable Circular Plot Point Count Surveys) it correctly states that the first visit is to be conducted in May and the second visit in June. The latter is more biologically and logistically appropriate and is the sampling frequency guideline we followed in 2011 (and in recent years), and intend to follow in future years.

The above requires physically changing the overall protocol, tracking the changes that occurred, changing the protocol from Version 4.4 to Version 4.5, and disseminating as appropriate. Those changes have not yet been made.

Data Management and Availability

Point count data discussed in this report are available to download from the California Avian Data Center (CADC), a regional node of the Avian Knowledge Network (AKN) hosted by PRBO Conservation Science. The data are available there under projects CNPSM and PALO, for all SFAN partners (contact Diana Humple for additional personnel access, dhumple@prbo.org). Updated GPS points can be downloaded from CADC in a variety of formats for mapping or uploading to GPS receivers; GPS points are also listed in Appendix A of this document.

To access point count data through CADC, once you have access, go to <http://data.prbo.org/cadc2/>, then follow the steps below:

1. Click “Go” in the red My CADC box on the right-hand side of the page.
2. Select “I want to log in to my MyCADC account”
3. Select “Analysts Tools”
4. Enter your user name, click enter, then enter your password and click Log In.
5. Click Point Counts, then select the project you wish to view or download data for (CNPSM or Palo)
6. You will then have a variety of options for selecting and filtering the data you want to download. Once you have selected the locations, time span, and other parameters, you can choose “Get selected data as - CSV file” to download all the data; or you can use the analysts tools to view various summaries of the data.

To download GPS points for study sites:

1. Follow steps 1 and 2 above.
2. Select “Biologists”
3. Select “Get maps and coordinates”
4. Select the appropriate project as in 5 above.
5. You will then be able to select which locations you want to download coordinates for, and to select a variety of formats to download them in.

Electronic databases of all mist netting data, along with scans of point count raw data sheets, will be provided on a supplemental CD.

Public Outreach

PRBO invites school and other groups to view mist netting at Palomarin and Muddy Hollow, and occasionally the other riparian sites. From 1 May 2011-30 April 2012, 24 classes and other groups visited PRBO Marin County mist-netting sites, including 18 school or university groups and 9 community groups. In total, 701 people visited the mist-netting sites through these organized visits, and many more visited as drop-in visitors. Members of the public also viewed mist netting at Redwood Creek as part of International Migratory Bird Day (IMBD) celebrations that are held at Muir Woods National Monument on 14 May, 2011; approximately 30 visitors viewed the mist netting as part of IMBD.

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Appendix A. Standard Operating Procedure (SOP) 4: Marking and Relocating Sampling Plots V2.1.

Revision History Log

Prev. Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #
1.0	Oct. 2006	T. Gardali	Minor wordsmith and suggestions	NPS internal review comments	2.0
2.0	June 2012	S. Jennings, D. Humple, R. Cormier, L. Porzig	Updated point count station narratives (locations and descriptions); created some that were missing	GPS coordinate did not match landscape; vegetation or other feature prevented access to original station	2.1

This Standard Operating Procedure explains the procedure for establishing and marking sampling plots to (1) locate point count stations, (2) locate net lanes, and (3) establish, modifying and mark point count stations. Detailed descriptions of all sampling sites are provided.

Locating Point Count Stations

All pre-existing point count stations are relocated with a combination of means: (1) they are previously marked with colored flagging for visual location and are re-flagged each field season if flagging has ripped, faded, or been removed; (2) GPS coordinates; (3) a narrative is written for each transect describing any details and important features useful for relocating the points; and (4) maps showing location of entire transect and individual points.

Locating Net Lanes

All pre-existing net lanes, where possible, are relocated through (1) permanent nets; (2) permanent net equipment (net poles, ropes); (3) marked flagging identifying both ends of the net lane; (4) maps revealing locations of net lanes; and (5) GPS locations of net lanes. However, net lanes are relocated only by experienced banders with knowledge of those net lanes in order to avoid minor movements of mist-nets.

Modifying and Marking Point Count Stations

- Point count stations are already established and selected. Consideration to add new point count stations will require modification of this SOP.
- Occasionally biologists will encounter previously established point count stations for which (1) the GPS coordinates do not appear as accurate as possible (due to suboptimal conditions when coordinates were originally recorded), and (2) for which physical features have changed and therefore the narrative is either misleading or requires updating. If coordinates appear inaccurate and current conditions appear optimal for recording new coordinates, the biologist will record the updated coordinates and provide them to the PRBO GIS Specialist and the SFAN Data Manager, change the coordinates on the narrative, and change them in any GPS units that contain them. When

narratives need to be updated, the biologist will make sure this is changed for all locations of the narrative (keeping the retired version in an electronic folder specifically for this purpose).

Abbott's Lagoon/Kehoe Ranch (ABKE), Point Reyes National Seashore, Marin County, CA

Project: Coastal NPS Monitoring (CNPSM)

No. Points: 16

Getting there: Points 9-16 are near Abbott's Lagoon. Drive past the parking lot for the lagoon and park on the left at the single car parking spot (kayaking entrance), across from the reddish shed and before mile marker 3.62 (parking area often not mowed; alternate parking in Abbott's lot or pullout near bathroom). Points 1-8 are at the Kehoe Ranch. Continue on in car in direction of Tomales Point. Park at the Kehoe Ranch sign (mile marker 5.56). For efficiency, start count at either pt 16, 8, or 1.

Notes: Points are approximately 200 meters apart. Degrees are relative to magnetic, not true, north. Transect is in 2 sections, and you must drive between the two.

Points 9 – 16 are near Abbott's Lagoon. Points 9 and 10 are on left side of road; 11-16 are on right side of road (if you were heading towards Tomales Point).

10: Walk up mound on "trail". Point # 10 is before you reach the lagoon, on south side of swampy area. Point between lupine and low-growing coyote bush.

9: Go straight up the slope along a path, heading uphill from and parallel to the patch of willows. Point is at the uphill side of the far edge of the last willow clump along the lagoon, about 7 up from willow edge.

11: Go to right side of road, point is along the willows about 20 meters in from the road, on south side of willows.

12: Go back to road and access the north side of the willows. Walk east along edge, going past patch of thistles. Point is 65° and about 20 meters from the corner in cow yard fence.

13: Continue in same direction along willow edge, crossing the fence and the levee. Keep straight, heading towards leftmost (northmost) willow patch, point is at beginning edge of the patch. Pt13 is about 290 meters from pt 12.

14: Continue on. Point is along willows immediately after crossing next fence.

15: Continue on in same direction. Point is about 30 meters after the next willow patch begins, along willow edge.

16: Continue in same direction. Pass smaller willow patch, and point is at beginning of the last willow patch you will come to before the 2nd "pond".

Points 1-8 are at the Kehoe Ranch. Points 1 and 2 are on left side of road; points 3 – 8 are on right side of road.

1: Take trail on left side of the road. Cross through the cattle gate further up the trail, then go 105 meters; point is on your left along the willow edge. Point is off trail about 10m.

2: This point is actually back toward the road. At the (WEST?) edge of the cypresses and privy, cut in heading left (south) to the willows. Follow along the west edge of the willows, and go about 2/3 of the way to the other side. Point is on this west edge of the willows.

- 3:** Go back to road and walk north up the road about 75 meters and go under fence where it is flagged. Walk up creek. Point is at a right-bend in the creek. Steep bank down to creek; point b/w willow and hemlock.
- 4:** Continue in same direction along creek towards salmonberry patch. Salmonberry is marked but walk in about 10 meters towards the edge of the bank to do the point at willow edge.
- 5:** Continue along creek. Point is at the start of the next willow patch almost immediately after crossing the fence.
- 6:** Continue onwards. Point is on a willow in the 2nd grassy cove, just past where creek is carved out away from willows at tiny “peninsula”. There is an orange stake in the ground.
- 7:** Continue along creek, crossing fence. Point is just before the ranch, is along the creek, and is just beyond the corroding car which is in the creek itself. Just before pipe (RLC didn’t find car in 2011) – used GPS as willows on edge too dense to see a car.
- 8:** Continue up the trail towards the ranch, crossing the creek at a path before hitting the fence. The point is in the middle of a small willow patch, on the south side of the patch. There is an orange stake in ground. Point 8 ends near road at historic J Ranch. If starting at pt 8, go down road at small white house and cross 2 fences.

Coordinates: dd, WGS84/NAD83

ABKE_1	38.15338	-122.94260	ABKE_9	38.12574	-122.94002
ABKE_2	38.15191	-122.93953	ABKE_10	38.12588	-122.93784
ABKE_3	38.15351	-122.93778	ABKE_11	38.12673	-122.93608
ABKE_4	38.15461	-122.93613	ABKE_12	38.12866	-122.93414
ABKE_5	38.15620	-122.93483	ABKE_13	38.12792	-122.93092
ABKE_6	38.15801	-122.93392	ABKE_14	38.12756	-122.92866
ABKE_7	38.15983	-122.93540	ABKE_15	38.12707	-122.92668
ABKE_8	38.16072	-122.93631	ABKE_16	38.12660	-122.92460

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
1998?	2011	Humple	Standardization	Needed coordinates/map
2011	Aug 2011	Cormier	Updated veg changes & re-gps'd pt 2.	
	Sep 2011	Jennings	Updated pt 2 coords in CAD/C	

Map:



Arroyo Hondo (ARHO), Point Reyes National Seashore, Marin County, CA

Project: Palomarin

No. Points: 6

Getting there: Up arroyo trail from Palo.

Notes: Flagged in red (1999). Narrative written by someone for whom which 100 paces=65 meters; 100 meters=161 paces.

14: 230 paces from gate, heading up arroyo on dirt road/trail. Opposite from bank of thimbleberry and buckeye tree. At *Ceanothus* tree on the right beneath a Doug Fir, just before (15 m) road goes under “bridge” of ceanothus and oaks on either side of road; lots of *Equisetum* (horsetail) nearby. Also 50 m before “bridge” of two large bay laurels.

15: 220 paces from point count 14. Look for Douglas fir tree straight up the road at 306 degrees. Point is just past gentle right hand curve (through grove of bays and Doug Firs) in clearing just at the start of a line of elderberries on the left.

16: 10 m before rocky cut in hill on the right (with small rock slide). Canyon narrow. Open view of creek on the left. Road is in direction of 321 degrees; tied into young Douglas fir, 8 meters high.

17: 475 paces from point 16. Cross the river twice. Point is 30 m past 2nd xing just before small clearing. At this point the road travels in a direction of 353 degrees, almost due north. Lots of sword ferns on steep bank on east side of road.

18: 200 paces from point 17. On top of small rise in road. Flag is tied to maple tree. Plastic pullout marker with reflector on left. 20 m past drainage with metal pipe across the left side of it.

19: Very topmost reach of the water road near entrance of foot trail, blue and red flags tied to bay tree on dirt bank on the right. New “parking area” as of 6/25/97 – a cleared space about 4meters in diameter.

Coordinates, WGS84/NAD83, dd

ARHO_14	37.93301	-122.73456
ARHO_15	37.93440	-122.73613
ARHO_16	37.93769	-122.73840
ARHO_17	37.94087	-122.73916
ARHO_18	37.94300	-122.74106
ARHO_19	37.94528	-122.74321

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
??	2005	Viola Toniolo	Undocumented	Undocumented
2005	2008	Humple	Changed into correct format with project, revision history, etc.	Hadn't been converted yet; still needs more by someone who has point counted it.
2008	2010	Humple	Added coordinates & map. CADC current	Lacked them

Map:



PRBO Conservation Science Point Count Directions [see next page for coordinates, revision history & map]

Bear Valley (BEVA), Point Reyes National Seashore, Marin County, CA

Project: Coastal NPS Monitoring (CNPSM)

No. Points: 16

Getting there: From Point Reyes NS, head N on Bear Valley Road. The first point is just past Marsh Road but before Limantour Split.

Notes: Original documentation in 1997. Runs parallel to Upper Olema Creek transect; potential for coordination with person counting that transect.

BEVA 30: At intersection, Limantour Road and Bear Valley Road, on willow at gravel drainage ditch.

BEVA 31: Walk along horse trail - marker in small Live Oak along trail indicates that point is back along riparian vegetation about 15 meters off trail.

BEVA 32: Continue along horse trail - at overhanging vegetation, old oak and Bay, point is on left side of trail.

BEVA 33: Continue along horse trail, go left under oaks and up the meadow. Pt is at end of meadow by willows.

BEVA 34: Back to the trail then off trail as meadow opens up. Point is set back in nook, before first willow “gate.”

BEVA 35: Through first willow “gate,” point is halfway to second willow “gate,” behind big sawgrass patch

(Next three points can also be accessed from the trail in a very wet year)

BEVA 36: Through second willow gate, behind sawgrass patch - there is a patch of coyote bush here, next to sawgrass. Point is on willow.

BEVA 37: Through third willow “gate,” at edge of cattail marsh.

BEVA 38: Cross through alder that’s across marsh from point #37. Continue up drainage to small cattail marshes, just past clump of Bays.

BEVA 39: On small alder, across creek from wooden post in new chain-link maintenance yard fence.

BEVA 40: Small oak behind offices, where lawn borders riparian zone.

BEVA 41: At barn corral, on willow.

BEVA 42: At end of corral, in alders, off paved “Earthquake Trail”, down towards creek.

BEVA 43: Follow paved trail until it curves around, get off and follow riparian zone - point is on alder between two Bays.

BEVA 44: Cut through field and large oaks - point is along grazed riparian, on alder across from solitary huge oak.

BEVA 45: 100 meters up Olema Marsh Road.

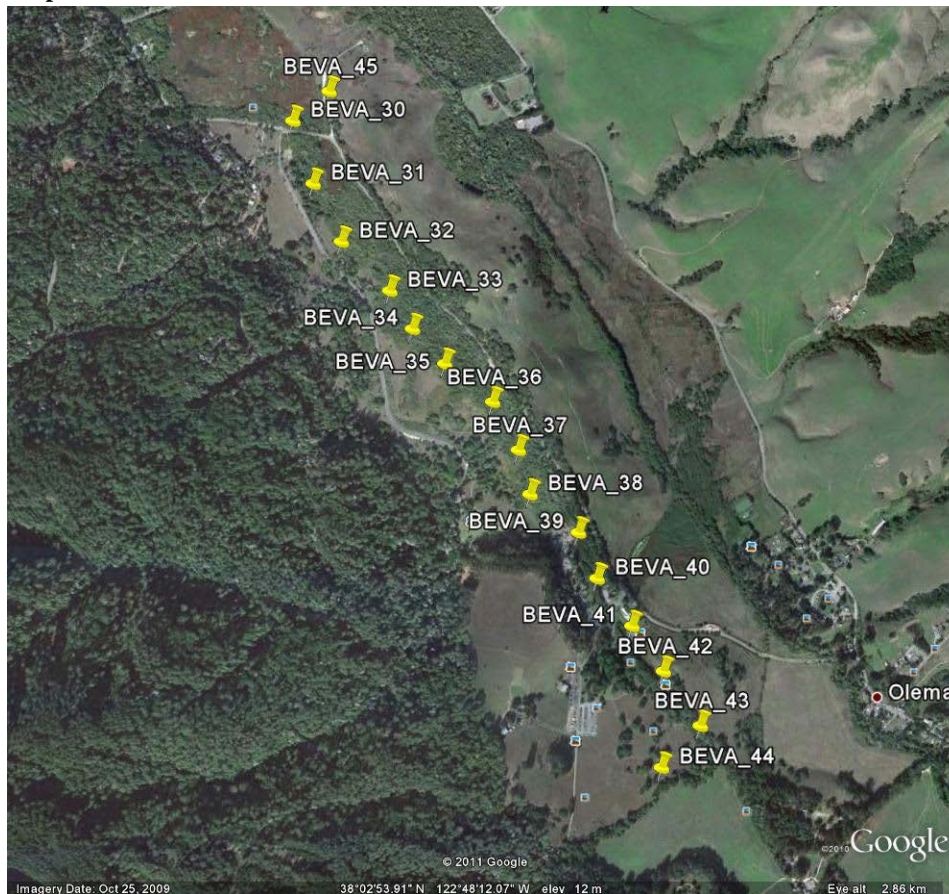
Coordinates: UTM, WGS84/NAD83

BEVA_30	38.05809	-122.81108	BEVA_38	38.04657	-122.80176
BEVA_31	38.05618	-122.81049	BEVA_39	38.04539	-122.79986
BEVA_32	38.05436	-122.80917	BEVA_40	38.04399	-122.79914
BEVA_33	38.05343	-122.80768	BEVA_41	38.04252	-122.79778
BEVA_34	38.05167	-122.80637	BEVA_42	38.04114	-122.79656
BEVA_35	38.05059	-122.80510	BEVA_43	38.03947	-122.79512
BEVA_36	38.04941	-122.80322	BEVA_44	38.03821	-122.79665
BEVA_37	38.04793	-122.80221	BEVA_45	38.05901	-122.80965

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
1998?	2011	Humple	Standardization	Added coordinates/map
2011	2011	Porzig	corrected descriptions; updated 33 - previous now inaccessible- CADC point updated	Changes had occurred

Map:



PRBO Conservation Science Point Count Directions [see next page for coordinates, revision history & map]

Coast Camp (COCA), Point Reyes National Seashore, Marin County, CA

Project: Coastal NPS Monitoring (CNPSM)

No. Points: 8

Getting there: From Bear Valley Rd take Limantour Spit Road toward Limantour Beach. After 6.4 mile the road makes a steep descent and there is a 4-way intersection before a steep ascent. Take a left at this intersection onto Limantour Spit Road (approximately ¼ mile before the beach and opposite from the Estero Trail).

If biking (2.7 miles), park in one of the narrow pullouts at the gate for Coast Trail and bike out the Coast Trail to Coast Camp. There are bike racks at the camp where the trail heads down to the beach; in 2011 I felt comfortable NOT locking my bike here, but these racks accommodate locking if you want.

If hiking (1.8 miles), continue driving past Coast Trail and park at the Clem Miller Environmental Center. Hike out Laguna then Firelane trails to Coast camp.

Points 93-98 are off trail along the eastern side of the main riparian corridor. Transect was originally laid out to travel into the main riparian corridor; thick veg now makes it easier to climb out of the riparian to the grassy hillsides to get between points. GPS is good for all points.

There is relatively easy travel between the campground and point 98 by climbing the tall ridge just inland from the camp and heading inland above the side gullies that head east from the main riparian corridor.

Notes: This is a semi-poison oak transect; you'll probably want to have a spare set of clothes in the car.

COCA_91: Easy to find, on the last bend before the trail dumps out onto the beach.

COCA_92: Also easy, on the second curve up from the creek on the campground side of the creek.

COCA_93: From COCA_92, walk up trail toward campsites nearest the creek. Past the first camp site on the left, when the scrub thins enough to do so, leave the trail and climb the small hill between the camp sites and the creek. Drop down the creek side of this hill into thick Ceanothus and other shrubs, using your GPS to navigate to the point. No landmarks to make finding this point easy- just use GPS as best you can.

COCA_94: From COCA_93, climb back up the hill between camp and creek, then head inland along this hill/ridge. This ridge is split by a shallow low spot just inland from the last campsite. Cross this low spot then continue NNW on this ridge (don't go NE up the big ridge) to where it drops steeply back down into the riparian. Point is at the top of this drop-off near a dead Bishop Pine. GPS good.

COCA_95: From point 94 head east into the small side canyon. Navigate through thick brush to point which is on a small flat area just south of the actual creek in this side drainage. No good landmarks; GPS good.

COCA_96: From COCA_94, head north across the side creek and climb the other side to an old road bed. Turn left onto this road bed and follow it up and around this hillside then follow your GPS back down into the riparian corridor. Vegetation is thick again, and there is a barbed wire fence hidden about 40m before you reach the point. GPS works fairly well under the 4m ceanothus canopy.

COCA_97: Get back up out of the riparian the way you came in, and continue inland once you get out of thick brush and into grass head inland around the point of this ridge. Point is on the southern rim of the next side gully to the main riparian corridor, amongst some tallish ceanothus. GPS good.

COCA_98: Moved this point due to heavy vegetation at original location. From COCA_97, head eastish along the rim of the side gully until you see a place where it looks crossable. After crossing, follow GPS inland to point on the rocky south rim of the 3rd side gully. New coordinates: 38.02542/ -122.85075 (UTM: 513100/4208646). Old coordinate: 38.02553/-122.85049. DEJU has been updated for this change.

Coordinates: DD, WGS84/NAD83

COCA_91	38.01716	-122.85604	COCA_95	38.02095	-122.85238
COCA_92	38.01855	-122.85484	COCA_96	38.02308	-122.85380
COCA_93	38.01989	-122.85461	COCA_97	38.02384	-122.85174
COCA_94	38.02131	-122.85428	COCA_98	38.02542	-122.85075

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
1998?	2011	Humple	Created this year; original narrative not located	Added map/coordinates
2011	2011	Jennings	Added narrative info. Moved revision history below map. CADC updated	None existed

Map:



Coast Trail/Laguna (CTLA), Point Reyes National Seashore, Marin County, CA

Project: Coastal NPS Monitoring (CNPSM)

No. Points: 13

Getting there: Once in Point Reyes NS, take Limantour Spit Road toward Limantour Beach (direction of Muddy Hollow). Approximately ¼ mile before the beach and opposite from Muddy Hollow, take a Left onto side road, signed for hostel and Clem Miller Education Center. If starting at 17, continue past the hostel, turn right into parking area for Laguna Trailhead; if starting at 29, park on side of road by Coast Trailhead (near pt 19). ~35 min from Bolinas.

Notes: Bring rubber boots and dress seriously for poison oak (bring tecnu!). Points are on or off Coast Trail (not Laguna Trail). Points ~200m apart.

Points 17-19 are across from hostel off road between parking lot and Coast Trailhead, off road; **points 20-29** are on or off Coast Trail

17: Access via pseudo-path down to creek before bridge that leaves parking lot (on left side of bridge when facing road with back to rest of parking lot), and walking creek up to get as close as you can to point.

18: Walk back way you came and walk road towards hostel / Coast Trail. Walk into riparian from road when get close to point, which is at edge of willows and marshy spot, next to grassy hummocks.

19: Head back to road and continue in same direction, then follow footpath to left just before metal culvert down into riparian (footpath is for daffodils which bloom across creek) crossing gulch on the way. Point is at overlook area above creek and ropes.

20: Head back to road and continue, then take Coast Trail to the left. Point is along trail at start of scrub on left side of trail.

21: Continue on trail. Point is off trail, to access look for animal trail in even if overshoot point. Point is on riparian side of first (more northerly) of 2 lone alders in meadow.

22: Continue on trail, point is off-trail at largest alder at edge of swamp and at far end of meadow. Can't see swamp from trail. Get down at more open forby spot ~20m before brown culvert marker and before nearest spot to point, via animal paths and bushwacking as best you can.

23: Continue on trail, point is off-trail on willow in alder patch. Head to riparian on animal path ~10m before brown flexi-plastic culvert markers..

24: Continue on trail, point is on trail at willow amidst alder patch, at unmarked brown culvert marker.

25: Continue on trail, point is 25m off trail under alders at edge of riparian amidst small cattail marsh. Access 30m after brown culvert marker via animal path (bushwacking).

26: Continue on trail, point along trail 4m before culvert and brown culvert marker, at end of twinberry patch, at coyote bush.

27: Continue on trail, point ~10m off trail (to right of trail) in cattail area ~20m after far end of bend in trail [note: trail may have moved since 2002, since old narrative does not match up with reality or GPS location].

28: Continue on trail, point off trail 15m to right on large alder.

29: Continue on trail, point off trail ~40m before trail starts to bend left and along last stretch of alders, go in 15m to right.

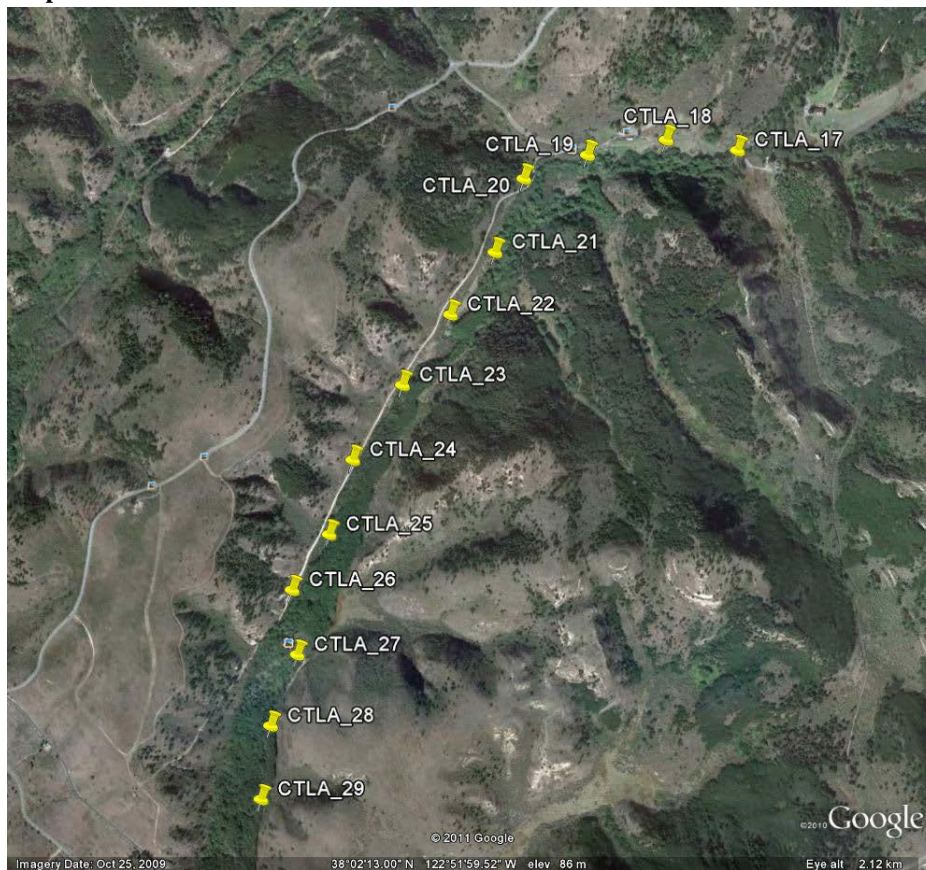
Coordinates: UTM, WGS84/NAD83

CTLA_17	38.04337	-122.85883	CTLA_24	38.03616	-122.87023
CTLA_18	38.04363	-122.86093	CTLA_25	38.03441	-122.87094
CTLA_19	38.04328	-122.86325	CTLA_26	38.03310	-122.87204
CTLA_20	38.04273	-122.86514	CTLA_27	38.03158	-122.87189
CTLA_21	38.04103	-122.86599	CTLA_28	38.02989	-122.87270
CTLA_22	38.03957	-122.86731	CTLA_29	38.02815	-122.87299
CTLA_23	38.03792	-122.86874			

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
1997	??		Note: original documentation in 1997	
2002?	2011	Humple	Standardization, and fine-tuning of point descriptions. CADC current	Added map/coordinates; changed details since had been so long

Map:



PRBO Conservation Science Point Count Directions [see following pages for coordinates, revision history & map]

Gerbode Valley (GERB), Golden Gate National Recreation Area, Marin County, CA

Project: Coastal NPS Monitoring (CNPSM)

No. Points: 18

Getting there: Marin Headlands, 2nd Sausalito exit: right off exit, through underpass, left to headlands through tunnel with 5-minute light; take Bunker Road from the tunnel. Pts 20-25 are along or near Bunker Road and can be done by car; 8-19 done on foot with pts 8-13 on or off Miwok/Bobcat Trails, and pts 14-19 continue along riparian from pt 13 but off-trail entire time. ~20 min from Mill Valley (1 hour from Bolinas).

Notes: Bring compass and rubber boots. Rain pants helpful. Very windy area so helpful to check weather for wind predictions before choosing the best day to count. Not oaky.

25: Along Bunker Road, 1st point you come to from 101. Either park at point on right side of road if coming from 101 (no pullout but car fits) or park at pullout by side road by Equestrian Xing sign (near point 24); tag on coyotebush which is 2m after 3rd telephone pole when back on Bunker Road from side road. 3rd telephone pole is off-road 29m before cypress tree.

24: Continue west on Bunker Rd, park at side road / pullout by Equestrian Xing sign, on right. Point is off the side road in coyote bush which is 5m before metal stake (if still there – much construction in 2011) which is on same side of road that point is.

23: Continue west on Bunker Rd, park at large turnaround/parking area on right. Take 2nd dirt road in walking 80m from entrance, point is across from locust tree.

22: Continue west on Bunker Rd, take side road that goes off from turnaround where you pull in for pt 23, side road parallels Bunker Rd and is very close to it. Park at pt, which is 302 deg 18m from sickly Doug fir across side road.

21: Continue west on Bunker Rd, turn off Bunker Rd onto side road across from stables. 61 deg 16m from citrus-type tree which is on left side of road if walking from pt 20 to pt 21. Pt by twinberry.

20: Continue on side road across from stables past point 21. Go in westerly direction on side road, pt is on Rodeo Creek across from first Cyprus tree off Bunker Rd

For 8-19: continue driving west past pt 20 on Bunker Rd, pass Field Rd, cross bridge, park behind NPS trailers near trailhead, and hike in.

8: 3 minutes from trailhead, and 50m after marsh where riparian corridor begins. Pt off trail to right at riparian edge.

9: Walk along trail to just past willow clump that crosses trail. Then walk off-trail to right along far edge of willows to point, just past 90 degree bend in willows.

10: Continue on trail. 75 m further from brown stake on left side of trail, bend in trail, and trail sign/intersection. 30m from isolated willow clump on left of trail with white stake. Point is off-trail to right across marsh to riparian edge.

11: Continue on trail. At 1st trail junction go right on Bobcat Trail; at next junction veer left. Point on left just off-trail, 10m in from willow edge at spot where willows slightly leave road edge (may need to do point from edge, very dense).

12: Continue on trail, then head left off-trail just before trail bends slightly left. Go through meadow to willow edge above creek.

13: Go back to trail and continue. Point is off-trail 85m to left near riparian edge, 294 deg at 125m from solo euc and cypress trees, which are past euc grove. May need to do point from edge of riparian. **Note: after pt 13 do not return to trail but walk along riparian corridor to pts 14-19.**

14: Walk parallel to riparian for 200m, point is just after gully on north side, on willow edge. Restoration flagging in area in 2011 due to restoration.

15: Continue along riparian edge. Point ~7m in but do from willow edge, across from patch of coyote bush 30m from edge.

16: Continue along riparian edge; point is here willows come to a point; 126deg 90m from isolated willow patch to east and on westerly side of trail. To get to point, walk through coyote bush zone and PC is just around the corner.

17: Continue along riparian edge, and through thick coyote bush patch. Pt at edge of riparian by huge coyote bush (can't get all the way to point, do from edge).

18: Continue along riparian edge staying on the riparian drainage that heads NE (drainage splits here); point on willow in front of lone oak that's within willows that's 330 deg 10m behind point.

19: Continue on same side of riparian, point is the last point on the Gerbode drainage, on a willow where the valley narrows and the riparian corridor curves east. In line with a large oak with flat canopy on western hillside. Bushwack through coyote bush to reach pt.

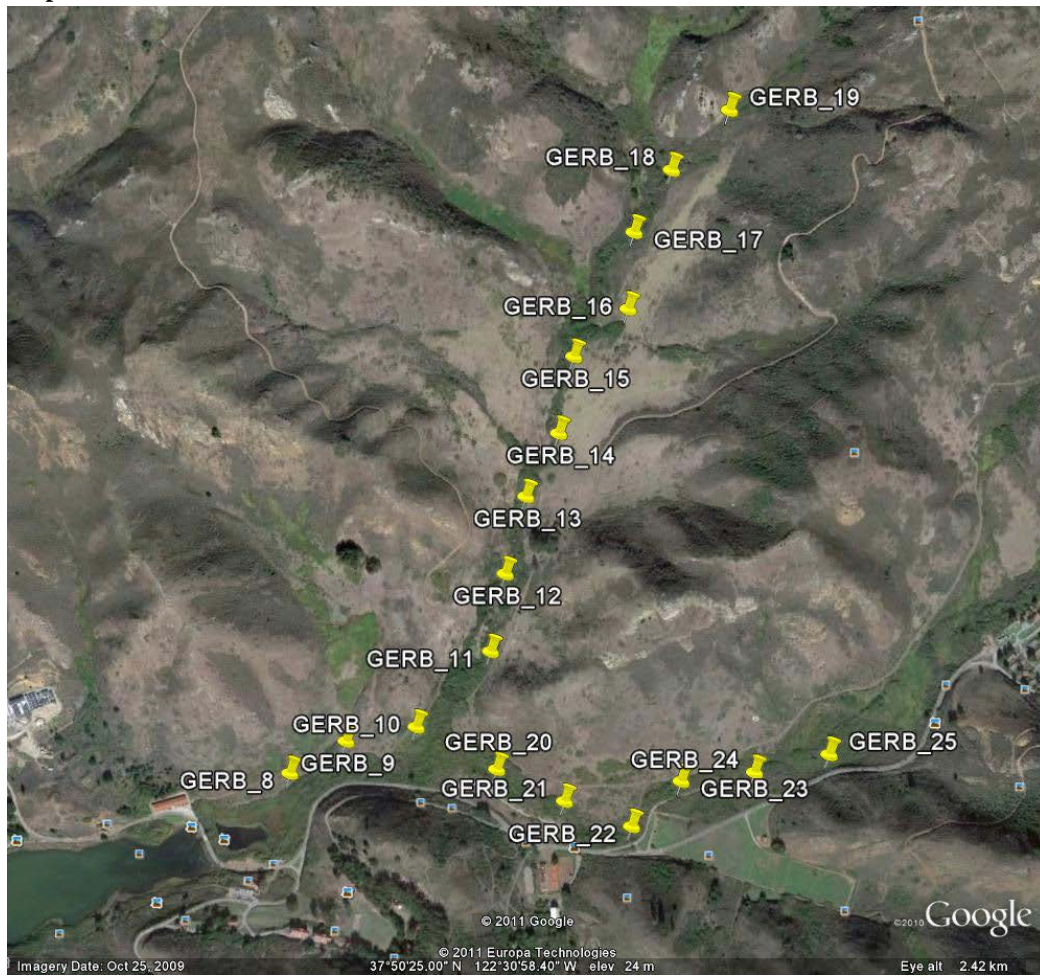
Coordinates: UTM, WGS84/NAD83

GERB_8	37.83315	-122.52359	GERB_17	37.84601	-122.51318
GERB_9	37.83392	-122.52188	GERB_18	37.84745	-122.51208
GERB_10	37.83426	-122.51975	GERB_19	37.84880	-122.51039
GERB_11	37.83608	-122.51749	GERB_20	37.83327	-122.51730
GERB_12	37.83794	-122.51704	GERB_21	37.83251	-122.51525
GERB_13	37.83978	-122.51642	GERB_22	37.83194	-122.51323
GERB_14	37.84128	-122.51543	GERB_23	37.83302	-122.51175
GERB_15	37.84310	-122.51498	GERB_24	37.83325	-122.50955
GERB_16	37.84421	-122.51335	GERB_25	37.83369	-122.50733

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
1998?	2011	Humple	Standardization & Word version created; modified point descriptions due to changes that had occurred. CADC current	Needed map/coordinates; site changes had occurred and/or details different

Map:



PRBO Conservation Science Point Count Directions [see following pages for coordinates, revision history & map]

Lagunitas Creek (LACR), Golden Gate National Recreation Area, Marin County, CA

Project: Palomarin (PALO)

No. Points: 18 points

Getting there: To begin at point 65, park at Platform Bridge Rd/Sir Francis Drake Blvd. and walk up the bike path. To begin at point 62, park in the large turnout on Platform Bridge Rd. at this point. Points 48-62 are all located on the west (riparian) side of Platform Bridge Rd.

Notes: 200 meter interval. Points 63-65 on the Cross Marin Trail. Historically marked with pink/black or orange flagging and tree tags. Can easily bike transect if you're comfortable leaving bike by side of road at the handful of points that you have to go in towards the creek to do. Rain pants not necessarily (helpful only at a couple points) and thick pants helpful (blackberry). Rubber boots not necessary. Can avoid oak. Lots of car noise.

#65) The point is 400 meters down the bike path trail, the tag is on a willow across from a willow patch. Willows on both sides of trail – point at brown plastic stake/marker

#64) Backtrack on bike trail. The tag is on the creek side of the path, on a large old, spindly, 4m-tall coyote bush (*Baccharus pilularis*) across from an alder grove.

#63) Located before the bike trail goes under the bridge if walking from pt #64 to pt #63. The tag is on an oak (*Quercus agrifolia*) on the creek side of the bike path, directly across from a cement retaining wall.

#48) Go north on Platform Bridge Rd. The point is on a roadside willow located about 10 meters before beginning of the gravel turnout with the gate and road into the meadow (banding station).

#49) Go through the gate, towards the riparian until you hit the gravel wash, and walk north on the gravel wash. The tag is on a large willow in a small group of large willows. Across the wash is a patch of small willows. Net # 5. Area changes annually!

#50) Tough point - best to approach by going back up to the road at your first opportunity and then back towards the creek. A good spot to enter is a little after you pass the closest spot to point if coming from 49 (watch for low barbed wire at base of slope!). Point on large alder with has metal tag amidst a group of large alders right at the creek edge.

Check GPS coordinates in 2012: find tree tag, and if current GPS coordinates off and the following ones fit, change (10S 0521123 4211961).

#51) Go back up to the road. The point is at a box elder (*Acer negundo*) which is down the bank of the creek visible from the road. Do point on road – point across from telephone pole with metal #13 on it.

#52) Go back to the road and continue northward. Look for the pink flagging on the barbed wire fence (directly across from a telephone pole #16) walk through the barbed wire and straight towards the creek, the point is on large willow with split broken trunk. Need to crash through willows to get to point. The point is before the open field. Possibly can't get all the way to point anymore (do from willow edge).

#53) Continue along road to the solitary bay past the powerpole with a transformer. Go towards the creek. The point is @ engineered salmon logs at the edge of the creek, directly in from the bay.

#54) Continue on the road, go to riparian creek edge at forby spot before the white barn, which is the last structure before the road curves. The tag is on a large alder tree. Point @ 6 large/close-growing alders with poison oak growing up them.

#55) Continue on the road, past the bend to just past mile marker 1.35. The point is on a roadside Oregon ash.

#56) Walk on the road. Can find point by walking down steep bank at the large turnout.

#57) Go back out to the road, continue for 200 m. Point is on a bay with an NPS boundary sign.

#58) Continue along road for 200 m. Head in toward creek 25m past mile marker 1.04. Walk 25 m. in towards creek to the point.

#59) Point on road, 200 meters further (25 m. before mile marker with .88 and 1.416).

#60) Continue 200 meters further along road. Point is across from an oak tree. ~28m before mile marker 0.74.

#61) Continue 200 meters further along road. Point is 20 meters before the 30 mph sign.

#62) Continue 200 meters further. Point is at the end of the turnout on willow tree next to buckeye.

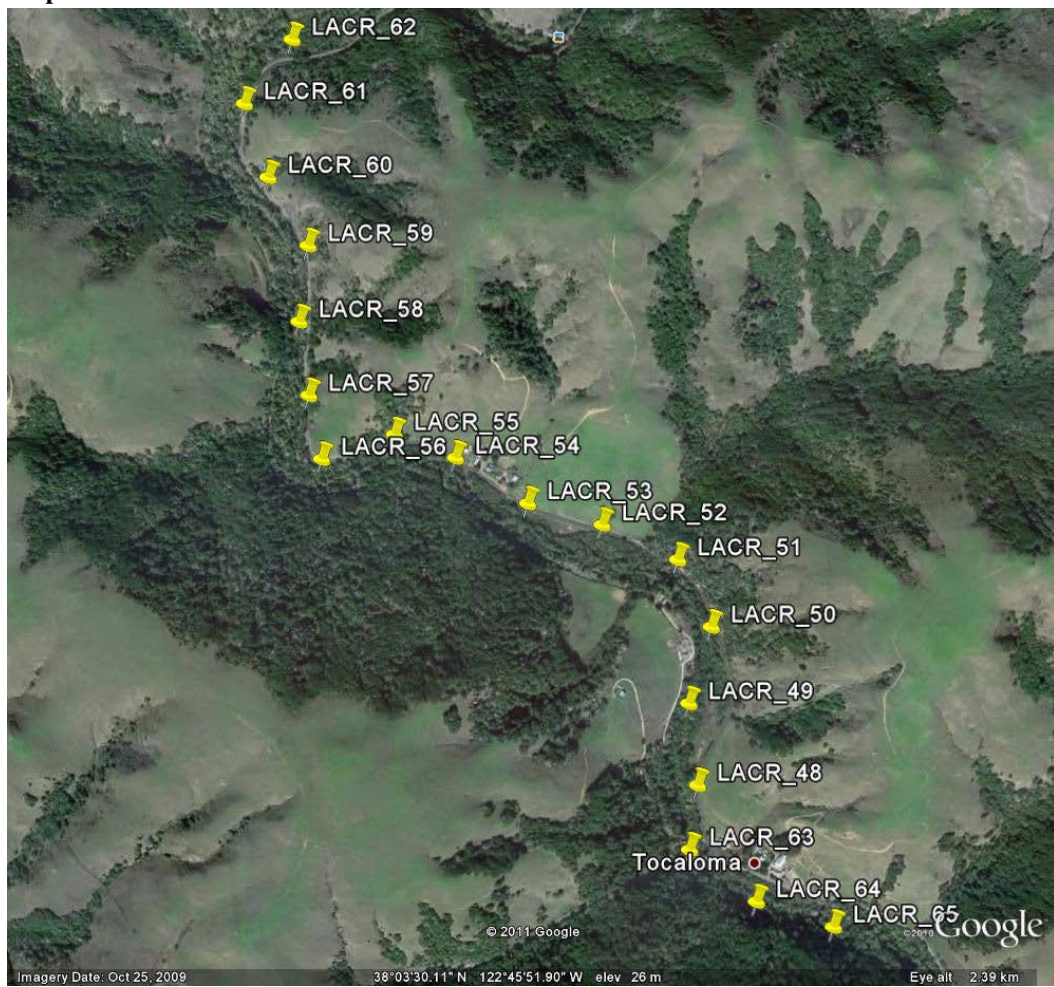
Coordinates: dd, WGS84/NAD83

LACR_48	38.05128	-122.75968	LACR_57	38.06039	-122.77122
LACR_49	38.05318	-122.75993	LACR_58	38.06212	-122.77152
LACR_50	38.05497	-122.75927	LACR_59	38.06389	-122.77124
LACR_51	38.05654	-122.76026	LACR_60	38.06549	-122.77243
LACR_52	38.05736	-122.76251	LACR_61	38.06723	-122.77316
LACR_53	38.05786	-122.76472	LACR_62	38.06873	-122.77173
LACR_54	38.05893	-122.76687	LACR_63	38.04978	-122.75992
LACR_55	38.05947	-122.76868	LACR_64	38.04857	-122.75794
LACR_56	38.05890	-122.77085	LACR_65	38.04800	-122.75568

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
2008?	2010	Gardali & Humple	point & route descriptions updated (Gardali); format changed, and added map, revision history log, and coordinates (Humple)	It was time!
2011	2010	Humple	Fine-tuned point descriptions and notes.	Helpful
	2011	Jennings	Confirmed DEJU has right coordinates	

Map:



PRBO Conservation Science Point Count Directions [see next page for coordinates, revision history & map]

Lower Olema Creek (LOOL), Point Reyes National Seashore, Marin County, CA

Project: Coastal NPS Monitoring (CNPSM)

No. Points: 11 (plus 4 historic ones not being currently surveyed)

Getting there: These points are located off Highway 1 between Dogtown and Five Brooks. They can be accessed from PRBO's Hagmaier facility (next to the NPS Pacific Learning Center) or the Bat House. Hagmaier is in the middle of the transect.

Notes: Points are approximately 200 meters apart. Degrees are relative to magnetic, not true, north. Rubber boots are helpful on this route. Fair amount of Poison Oak. Historic points 57-60 are not being surveyed as part of the monitoring, are at Five Brooks, and must be driven to. See older versions of narratives for details if you need them.

LOOL 46: Across from first euc tree to the northerly end of white "bat house" on Hwy. 1, at willow edge across street.

LOOL 47: Walk south along riparian corridor. Point in line with 4th telephone pole after bat house, at willow edge; right after "turn out" sign.

LOOL 48: Walk south along riparian corridor, point directly in line with last oak in line with oaks along road.

LOOL 49: You can bushwhack, OR go the longer, easier way: to the road, then take the new Olema Valley Trail. The point is just off the trail right before the bridge. Point is 240° at 17 meters from lone doug fir. Point is across a grassy patch from the fir, to willow edge.

LOOL 50: Walk 200 m, following the riparian (you can still see the old trail bed in 2011). From #49 point is at end of U shaped corridor, 220° 25 m. from low flat coyote bush on mound. Point is along willow edge.

LOOL 51: Follow old trail bed. Pt is between willow patch and riparian.

LOOL 52: Out to the trailhead, along the Hwy and back in the Hagmaier driveway. Point is ~20 m north of driveway along willows. There are no trees between the point on the willow and the highway.

LOOL 53: Cross driveway. Follow the edge of the willows left of and around the big willow clump ahead. The point is 10m from the creek next to a coffeeberry just past 1st old euc grove (all stumps), about 80m past PRNS building.

LOOL 54: Cross creek next to pt #53 (toward young eucs). Follow deer trails on the other side of the creek through scrub, up small hill, and back down to riparian strip. Follow riparian edge to lone bay tree. Point is 7 m. at 374° from bay tree which is approx. 5m tall.

LOOL 55: Point is 62°, 3m. from big oak tree at edge of riparian. Tag on alder. There is a dense poison oak/blackberry thicket in the way, so if you want to avoid it you can go around this thicket (to the right) and come back to the riparian on the other side, where access to the point is much easier.

LOOL 56: Walk past treeless part of creek, point at beginning of last large willow patch. (Pass smaller willows and coyotebush). Point is on south side of creek and fence. Corresponds approximately to mile marker 19.87, and also to sign with Horse & Rider Crossing symbol (can park here).

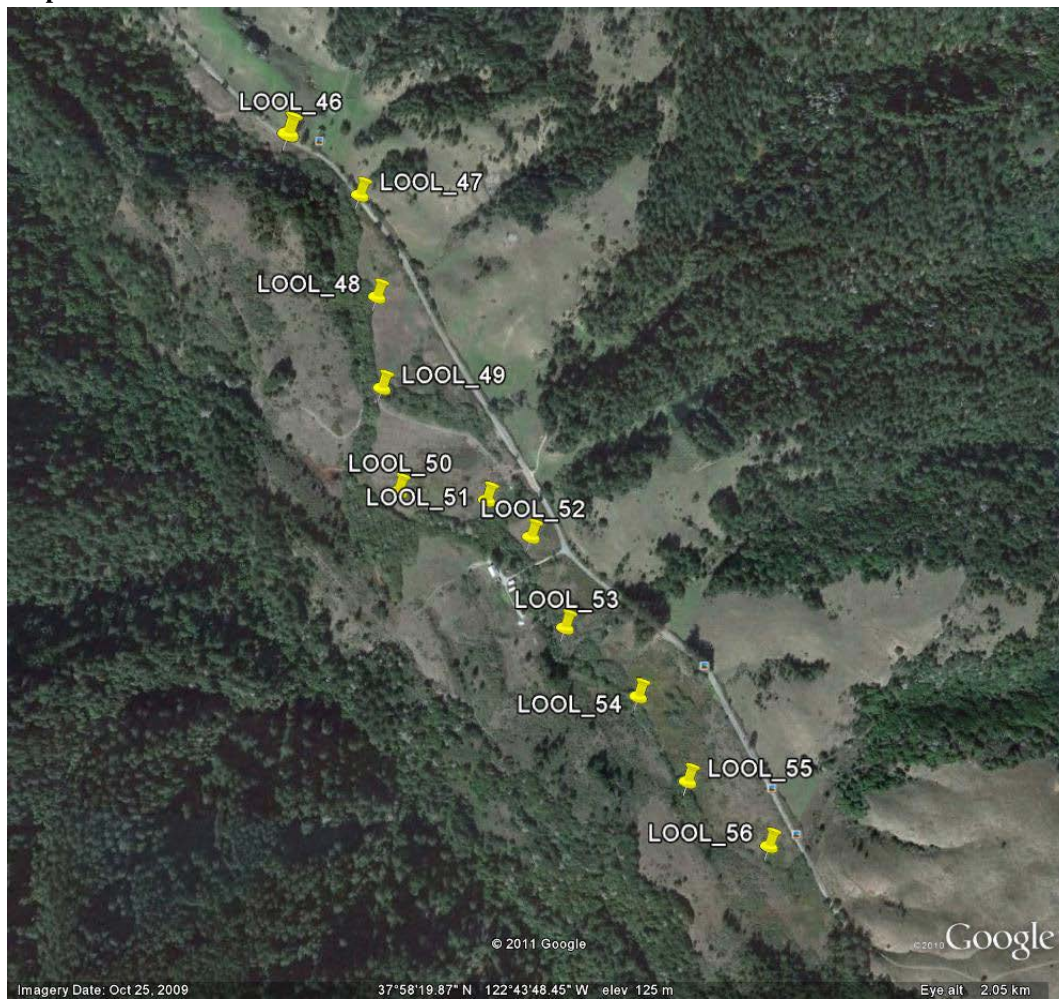
Coordinates: UTM, WGS84/NAD83

LOOL_46	37.97881	-122.73628	LOOL_52	37.97127	-122.73043
LOOL_47	37.97770	-122.73454	LOOL_53	37.96958	-122.72963
LOOL_48	37.97578	-122.73412	LOOL_54	37.96829	-122.72789
LOOL_49	37.97406	-122.73400	LOOL_55	37.96672	-122.72672
LOOL_50	37.97212	-122.73360	LOOL_56	37.96552	-122.72480
LOOL_51	37.97196	-122.73149			

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
2005	2011	Humple	Created standardized document. Also, 57-60 were not in most recent version.	Need maps / coordinates / and to reinstate pts 57-60
2011	2011	Porzig	Updated narrative. CADC current	Trail re-routed

Map:



M Ranch (MRAN), Point Reyes National Seashore, Marin County, CA

Project: Coastal NPS Monitoring (CNPSM)

No. Points: 8

Getting there: Park at the big pullout at the “School Bus Stop 400 Feet” sign, just before you reach Drakes Bay Oyster Farm sign when heading out from Inverness towards the Lighthouse.

Notes: All the points are near the riparian vegetation along the creek, but are to be surveyed from the road due to the marshy nature of the vegetation. From point one simply pace go back along the road headed toward Inverness to reach points two through eight. Do the point from the side of the road that the riparian habitat is on; when it crosses the road, you should do the same.

MRAN 1: The first point (point #1) is at the edge of the pullout (the furthest edge from the oyster farm sign; i.e., the first end you reach).

MRAN 2: This point is just after the power-line crosses the road, but before it crosses back (by about 50 m) to the riparian side.

MRAN 3: This point is about eight meters past the first pole, once the power-line crosses across from the riparian (adjacent to the 2nd reflector on the riparian side).

MRAN 4: Directly across the rd. from the drainage with pine trees. Again in a spot where the powerline begins crossing back to the riparian side.

MRAN 5: At dead tree

MRAN 6: Across from ranch/pasture. This point is about 10 m. upstream of the culvert where it goes under the road.

MRAN 7: This point is at the road for the estero. I counted this in 1998 (for lack of any narrative) on the estero rd., on the ranch side of the creek.

MRAN 8: Just before an alder on the creek side, and a pine across the street. This spot is primarily willow. On the hillside above the creek are several pines.

Coordinates: UTM, WGS84/NAD83

MRAN_1	38.09158	-122.92609	MRAN_5	38.09285	-122.91808
MRAN_2	38.09141	-122.92402	MRAN_6	38.09277	-122.91596
MRAN_3	38.09188	-122.92199	MRAN_7	38.09364	-122.91404
MRAN_4	38.09235	-122.92014	MRAN_8	38.09488	-122.91239

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
1998?	2011	Humple	Standardization	Needed map/coordinates
	2011	Jennings	CADC current	

Map:



Muddy Hollow (MUHO), Point Reyes National Seashore, Marin County, CA

Project: Palomarin (PALO)

No. Points: 15 (originally 17 but points 76 and 77 have not been repeated since 1998, due to the thickness of the off-trail vegetation post-fire, which causes quite a disturbance plus takes a long time to navigate through. Please see older narratives if interested in the location of these points.

Getting there: On road to Limantour, turn right at sign for Muddy Hollow (left is Youth Hostel and Clem Miller Environmental Center), park in lot. Points are in both directions from Muddy Hollow parking lot. Points #70 - #61 are south, down Muddy Hollow Trail. Points #71 - #77 are north, up the Bayview Trail. Have to return to parking lot between each of the two sets of points.

Notes: Because of the nature of the post-burned habitat, some of the landmarks may have changed - i.e. snags fallen down, heavy vegetation growth, etc. Points ~200 m apart. Some flagging missing (**REFLAG IN 2012!**). Need rubber boots as some areas extremely flooded. Degrees relative to magnetic not true north. Note that trail rerouting (and lack of old trail maintenance) will influence points 65-66 & may make access difficult in future. Rain pants helpful for those pts. Not oaky.

MUHO 70: Through gate at parking lot, point is about 50 meters down trail, left side of trail on large horizontal willow. Is about 20 meters beyond the first telephone pole. Is just before willow immediately to right of trail that has a huge and odd-growing base.

MUHO 69: Point is ~12m just before 3rd pole, left side of trail on mid-sized alder (closest alder to trail).

MUHO 68: Right side of trail, in a patch of shrubs across the road from low willow patch. Halfway between the 4th and 5th telephone poles, and ~40m before turn off to Estero Trail on right. Point is at shrubby/willow patch between separated alders, ~50m past 4th pole.

MUHO 67: 20 meters before the pump shed on the right side of the road. Point is 10 meters off the road to the right at the elbow of the "L" of the elderberry patch and by coyotebush.

MUHO 66: Continue straight from pt 67 on OLD trail following powerline [i.e., do not take trail to left]; b/c not maintained may take longer to access in future. Just before end of alders on right side of road. About 20 m beyond the 2nd telephone pole after the pump shed. Point is about 5 m off the trail to the right.

MUHO 65: Narrative changed from historical description due to major change in vegetation. Follow GPS. Continue on old trail/powerline and go off to right of trail in alder forest. Note: understory vegetation, retired trail location, and slough locations subject to seasonal changes due to extensive winter flooding in this area as well as extreme mud deposition. In 2011: point in sedge marsh in dying alder forest.

MUHO 64: Narrative AND location changed from historical description/old narrative, due to changes in trail system and flooding. Go back the way you came along trail and take new bridge/trail to right between points 66 + 67 (was to your left when you were walking to point 66), which will get you on the far side of the riparian. Decent walk between points 65 and 64. Point is just below a huge *Ceanothus* that is in scrub and just to right of trail and above the riparian; however may be hard to get to it b/c the NPS has put a lot of brush cutting obstacles to keep people from accessing the old trail (which the point is on)...may need to consider moving point to above *ceanothus* if cannot get to.

MUHO 63: Continue along main trail. Point is at break in willows where can see the marsh/sedge area to your right. Willow just after this break is flagged. Just after you get out of alders that are directly along trail.

MUHO 62: Continue on main trail. Point is about 25 meters before lone fir tree on left, and flagged on large alder to right.

MUHO 61: Dead leaning S-shaped willow at edge of pond, just before full view of open area pond (what used to be pond; now post-restoration is more a series of channels, highly variable). Aluminum tag is visible on second dead willow from the end of willows, right side of trail.

The following points once again start from the Muddy Hollow parking lot, but are along the Bayview Trail to the north (pt 74 is actually before the trail).

MUHO 71: Along Muddy Hollow Road walking towards Bayview Trailhead, at the first scrubby clearing on right, turn in as if walking to net 10 - point is about 25 meters into clearing, along willows. Is about 15 meters from the 1st pole of net 10, about 10m before big alder, and adjacent to large coyote bush.

MUHO 72: From 71, walk back to fire road, then turn off road to your right up the signed Bayview Trail. Go through cypresses, point is on right side of trail at the 2nd drainage that crosses the trail and goes to the creek once you hit the red elderberry shrubs lining the trail, and before you pass the first large live alder directly on the left.

MUHO 73: After you've come down hill, point is at beginning of big scrub meadow to the right of the trail and at middle of the smaller first distinct and bowl-shaped part of the meadow; is across from the buckeye patch, point is set back about 10-15 meters off trail to right.

MUHO 74: At first bridge, left side of trail before crossing creek.

MUHO 75: About 20 meters before fork in trail, point is on large alder just to right of trail, at point where trail goes uphill about 3 feet.

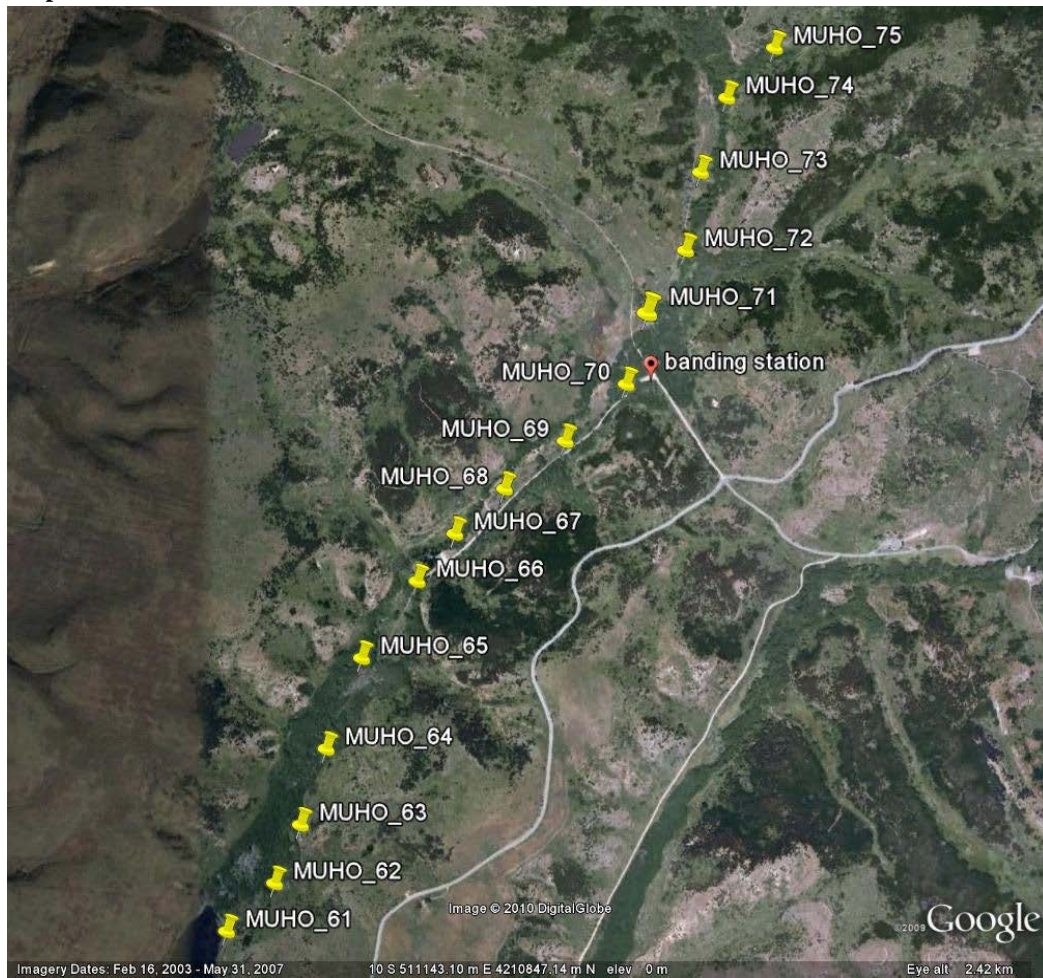
Coordinates: UTM, NAD83, Zone 10S

MUHO61	510319	4209648	MUHO69	511224	4210941
MUHO62	510448	4209775	MUHO70	511387	4211091
MUHO63	510517	4209930	MUHO71	511440	4211271
MUHO64	510585	4210130	MUHO72	511545	4211444
MUHO65	510680	4210369	MUHO73	511585	4211650
MUHO66	510828	4210572	MUHO74	511655	4211847
MUHO67	510929	4210697	MUHO75	511783	4211978
MUHO68	511062	4210815			

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
2005	2006	Humple	Redid narrative style to match new one; updated details, especially veg, at a few pts.	Change in narrative protocol; veg changes
2006	2007	Humple	Made just a few changes	Improvements to point descriptions
2007	2008	Humple	Made one change to point 73	Improvements to point descriptions
2008	2010	Humple	Access details for points 61-66; added map	Trail rerouting and restoration
2010	2011	Humple	Added map and fine-tuned details as per current conditions	Map and site changes

Map:



Marin County Open Space

Pine Gulch (PIGU)

No. of points: 5

Pine Gulch (PIGU), Marin County Open Space, Marin County, CA Project: Palomarin (formerly Coastal NPS Monitoring, even though not on NPS land)

Getting there: Park at pullout on Olema-Bolinas Road next to Pine Gulch Forest, and take trail into forest. Same location as mist-netting station

PIGU01 - At end of net number one (end that is closer to net 2 than net 5).

PIGU02 - At end of net number 2, closer to trail that you walk into Pine Gulch on then to the end that is nearer to net 1.

PIGU03 - Follow path through willow swath by net 10; trail turns into opening, and head left into willows about 20 feet to do point.

PIGU04 - At “far” end of net number 9 (end that is furthest from trail).

PIGU05 - At “far end of net number 6 (end that is furthest from trail).

Coordinates WGS84/NAD83, dd

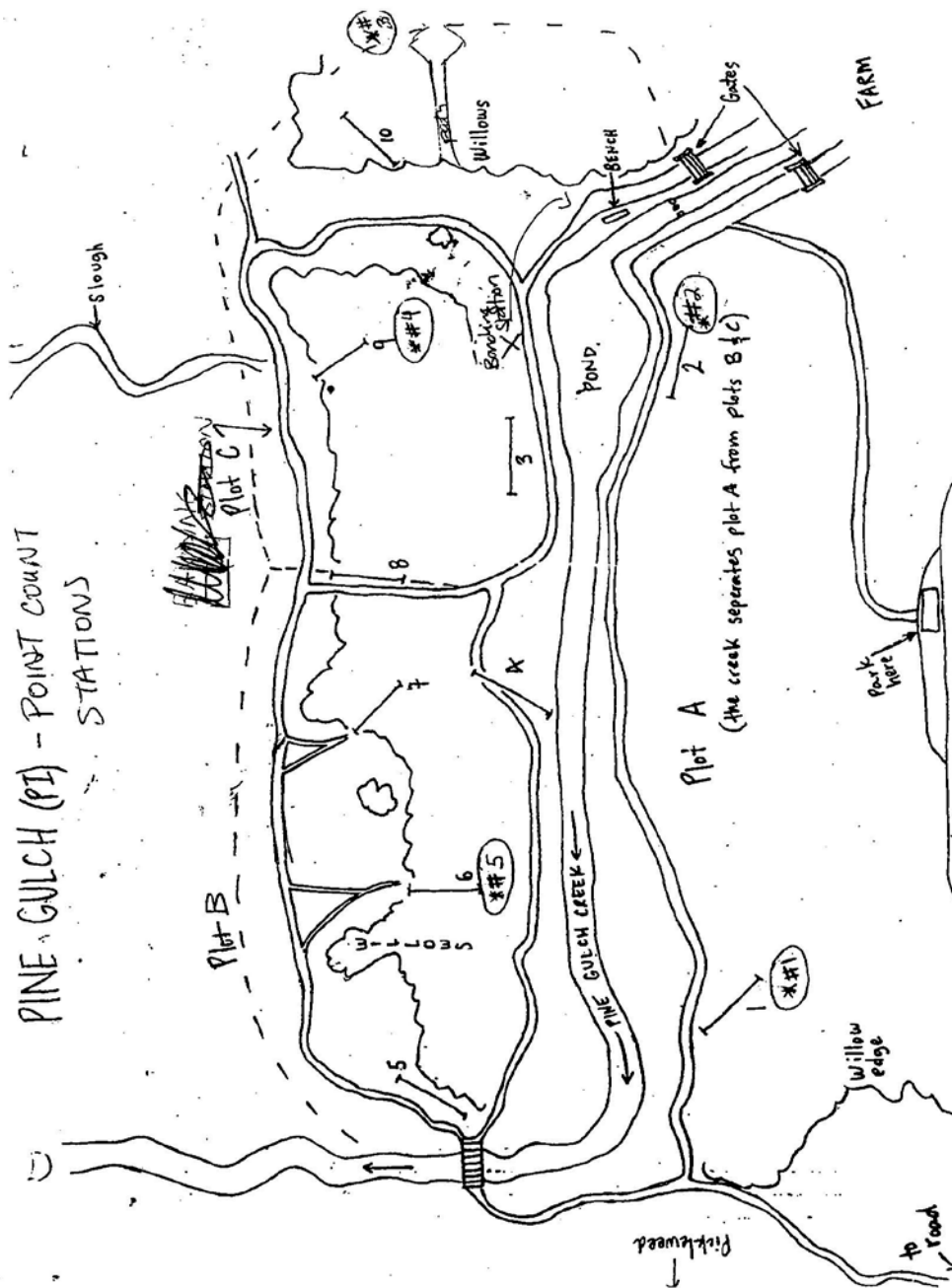
****NOTE: most people do not use coordinates to find points, but use map with net locations**

PIGU_1	37.92141	-122.69075
PIGU_2	37.92010	-122.69095
PIGU_3	37.91917	-122.69028
PIGU_4	37.92042	-122.68904
PIGU_5	37.92133	-122.68957

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
2005?	2006	Humple	Complete re-do; added map to same document as narrative; added coordinates	Old and outdated
2006	2008	Humple	Changed project to Palomarin	All Palo-run transects now in project=Palomarin
2008	2010	Humple	Added coordinates & checked them in google earth that seem correct	

Map:



PRBO Conservation Science Point Count Directions [see following pages for coordinates, revision history, & map]

Redwood Creek (RECR), Upper Section, Golden Gate National Recreation Area, Marin County, CA

Project: Palomarin (formerly Coastal NPS Monitoring)

No. Points: 14

Getting there: ~35 min. drive from Bolinas. From Hwy 1 head S from Bolinas; turn left onto Muir Woods Road at town of Muir Beach just past the dirt road to the RECR banding station. The lower end of transect (pt. 45) is just up Muir Woods Rd from volleyball net area you will see on your left; park at Santos Meadow a little further up road. The upper end of it (pt 47) is by NPS greenhouse area on left, park across road from greenhouses at pullout on right before No Parking/Fire Lane sign

Notes: Flags generally orange and red; intervals ~200m. Rubber boots required. Veg makes access difficult at some points. Done as a separate transect from the “Lower Section”; numbers unique, but all are called RECR. Points unusually ordered!

RECR 47: Cross road, go toward riparian at “No Parking Fire Lane” sign on left; go past and in to right of green house. Cross the small field with coyote bush and in hemlock and some red restoration flags. The point is under a large buckeye that is beneath a huge alder, after

RECR 46: Walk back out to road, then towards Hwy 1 along dirt road/path that runs along Muir Woods Rd (opposite side of road from parking spot). The point is 252 deg. from large Doug fir before you reach a telephone pole across road (basically on other side of fir from path). Can be hard to access because of vegetation, and may need to do point on path-side of fir.

RECR 36: Continue down road. Go in toward riparian from Muir Woods Rd at buckeye which is 114 deg. at 11m from C107 M1.99 k M3.202 sign across road. Go beneath buckeye; point is 16 deg. at 17m from open patch; the tag is on a small willow attached to the tree with wire. **Moved point toward road slightly due to thick veg. New UTM 538051/4193438. This new UTM doesn’t reconcile with DEJU/Google earth map.**

RECR 35: Continue down road; go down Miwok trail (to left of paved road when heading down to Hwy 1; across from fire road). Point is about 50m down trail from road, and 8m from the trail, to right, where vegetation opens up a bit. **Note: after this point whenever trail forks, never take trail that goes to road; stay for the most part along creek.**

RECR 37: Continue along trail. 22m after bridge; tag on a large buckeye on right side of the trail before a large redwood tree.

RECR 38: 294 deg. and ~20m from Muir Beach/Hwy 1 trail marker; on right, on other side of little meadow that is separated from trail by border of coyotebush.

RECR 39: Continue on trail; do not fork left (if coming from pt. 38), stay on RECR Trail. Is on the creek bank in the alder grove to right of trail and before solid willow patch. Across meadow from the near edge of buckeye. Note: used to be near lone coyotebush but meadow being taken over by coyotebush.

RECR 40: Continue on trail. Fork left (staying on RECR trail). Is down creek bank at level ground in an alder patch before the creek. On trail, turn in before coyote brush patch that comes out to trail on the right.

RECR 41: Continue on trail. 9m past southerly wall of abandoned building (on far side if coming from pt 40); at willow edge.

RECR 42: Continue on trail. Cross bridge and pass short spur trail to road. 178 deg. 20m from Doug fir (in 2011 I couldn't reconcile these 2 pieces of info; was 40m via rangefinder from tree when at GPS point and 178 heading) that is past spur trail, at willow clump near the trail on the left side of trail.

RECR 66: Continue on trail. Go down bank on left of trail to level alder patch which is directly across from willow patch adjacent to Muir Woods Rd (road to right of trail). Go into herbaceous area, point on left-most of 3 huge alders.

RECR 43: Cont on trail. Go left towards the creek at willows ~15 m before bridge at junction of the trail that goes toward the road. (no longer a well established trail).

RECR 44: Continue, cross bridge (taking left fork of trail immediately after bridge). At Coastal Trail / Muir Beach sign, bear to the right; continue walking parallel to riparian corridor. The point is approx. 15m past the sign and 7m in from the trail, on right. Marked on trail near point as well. If doing transect in reverse order, can access points 44 and 45 from a horse trail next to road not far from point 44, or can climb down under bridge from the road (which can be more difficult).

RECR 45: From point 44, continue down trail to creek, turn left, then walk along creek toward bridge. The point is on the 3rd alder before auto bridge on left. To get out, climb up beneath this bridge to the road, or retrace your steps and find horse trail that takes you out to road across from Santos Meadow (it's near where you first hit the creek when coming from 44 to point 45). If starting at this point, cross road from Santos Meadow and walk in the Frank Valley Horse Camp Spur trail and down to creek, then walking in creek towards bridge (to the right) until you get to point.

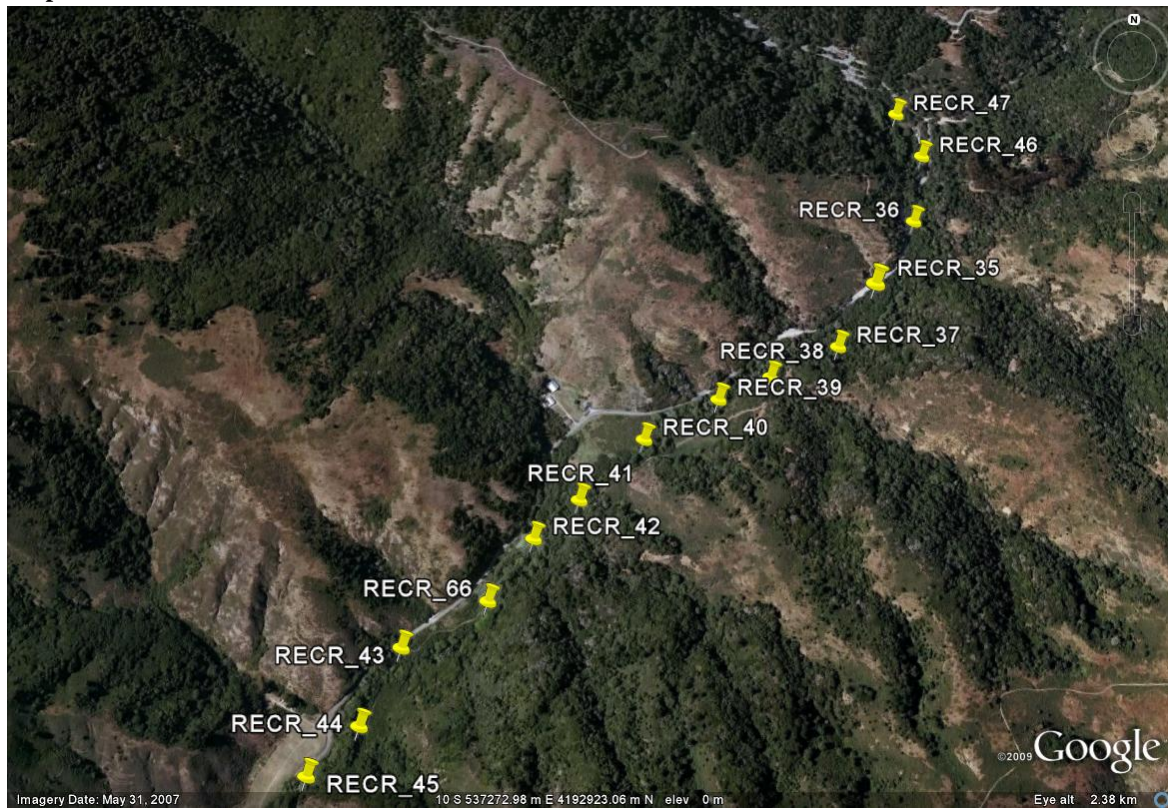
Coordinates: UTM, NAD83, Zone 10S

RECR35	537948	4193235	RECR42	537148	4192564
RECR36	538046	4193412	RECR43	536864	4192299
RECR37	537858	4193074	RECR44	536787	4192123
RECR38	537694	4192987	RECR45	536681	4192011
RECR39	537570	4192924	RECR46	538069	4193592
RECR40	537395	4192815	RECR47	538004	4193706
RECR41	537249	4192661	RECR66	537053	4192415

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
2005	2006	Humple	Redid narrative style to match new one; updated information at a few points.	Change in narrative protocol; some changes observed
2006	2007	Humple	Updated information on a few points	To make it easier to find points, especially with vegetation changes.
2007	2008	Humple	Changed project to Palomarin	Changed long-term Palo run sites to project=Palomarin
2008	2010	Humple	Updated information on a few points; added map	To make it easier to find points, especially with vegetation changes.
2010	2011	Jennings	Moved point 36. CADC updated	Couldn't get to original point anymore

Map:



Redwood Creek (RECR), Lower Section, Golden Gate National Recreation Area, Marin County, CA

Project: Palomarin (formerly Coastal NPS Monitoring)

No. Points: 10

Getting there: ~35 min drive from Bolinas. Points 32-34 and 68-69 are around Muir Beach, the rest follow creek upstream. Take Hwy 1 S from Bolinas to town of Muir Beach. For lower points, if being dropped off turn right at Muir Beach Rd. just after the Pelican Inn, and get dropped off at Muir Beach parking lot. There is no public parking on Muir Beach Road in early morning, so if you are driving and starting at the lower end or the middle, instead park in the middle: turn left off (if coming from N) Hwy 1 onto the banding station dirt road, and park on pullout on right (putting you in middle of transect). To start at the upstream end, turn left off Hwy 1 up Muir Woods Road and park on left at pullout above the volleyball net area along creek (if you hit Santos Meadow you've gone too far). **Rain pants are a good idea!**

Notes: Flagging if present is usually orange (**re-flag in 2012**); intervals ~200 meters. This is done as a separate transect from the RECR "Upper Section", and numbers are unique. Rubber boots are needed. Points 70-73 are part of restoration, so landmarks, especially vegetation, are changing. Rainpants are helpful! Not oaky.

RECR 32: Walk on fire road before Muir Beach parking lot (to left on way to parking lot). Tag on a dead willow branch; may not be visible. Flagging on large horizontal willow. About 50 m in from gate, & across fire road from telephone pole.

RECR 33: Continue walking on fire road. Point on riparian side of trail just before pond on left (site description changed due to restoration).

RECR 34: From 33, continue on trail; turn right when trail forks (2x), cross foot bridge, and walk edge of riparian forest that is near herbaceous area directly across from parking lot to your left, before boardwalk takes you to parking lot. This point moved ~15m in 2010 after Big Pond Restoration b/c of flooding: Point is on the NW edge of the alder grove inside the grove, at the pond channel edge (if high water) by felled willow, as close as you can get to the point without getting wet

RECR 68: Point is ~100m in from Muir Beach Rd along "trail" (an exaggeration, as it's barely a trail and there are many other barely-trails around). Go in just past the Pelican Inn Carpark (if you were heading towards Muir Beach from Highway 1), between the two no parking signs, following "trail" in on the Pelican Inn side of the road. Following yellow flagging, basically you have to maneuver your way in the direction of your point, which is straight in from the entry point off the road, along whatever trail-like vegetation breaks you can find. Use GPS. If doing the transect from upstream to downstream, still approaching point #68 this way as trying shortcuts will just cause frustration. May not be able to all the way reach point.

RECR 69: From 68, go back to Muir Beach Rd, Pelican Inn and Hwy 1, walk N on Hwy 1. Take 1st dirt road to left (NOT the dirt driveway into a van parking area); residential addresses posted at the beginning of the dirt road (e.g., 1821, 1795). Point is at 1st tall elderberry near base of large snag, at beginning of riparian forest, next to log.

RECR 70: Follow the dirt road to the Hwy, go left (north) along the Hwy to the private road on right (road to banding station). Continue ~130m up road and head towards creek. Point is on an alder, about 5 m from creek side of net #9, in direction of Hwy 1, on 3rd alder over.

RECR 71: Go back out to the road. Follow the road until the creek turns. Turn right into the grass and continue paralleling the creek. Point is in what used to be a eucalyptus grove (where restoration work began 2003), on one of last remaining mature alders on creek bank, on same side of creek as you have been walking. 15 m before net 1.

RECR 72: Continue to parallel creek for another 200m through grass, ivy and other veg. Point on a dead and very big alder at a very narrow area of mature dying or dead alders. Now lots of young alders growing, widening the riparian swath. Across field from house.

RECR 73: Continue to parallel creek. ~50 m past telephone pole, walk down to creek to right, and cross creek to reach point. Point is on the far side of the creek hanging from a skinny alder limb 10m upstream from 6-trunked alder that's also on far side of creek. [note: this point used to use dilapidated car as the landmark but it is no longer there, and restoration has altered the vegetation landmarks]

RECR 74: >200m from last. From 73, go back so you're walking as you have been in to the left of the creek, and continue along creek. Walk almost all the way to the cypresses at end of valley, then cross the human area with wooden structures to your right. Flagging is hanging from low willow limb adjacent to field (possibly mowed), ~15m in from elbow (L-shape) of willow patch. If you are accessing point #74 first in your transect order, via the volleyball/junkyard parking area, you will have to cross a walking bridge to get to this point.

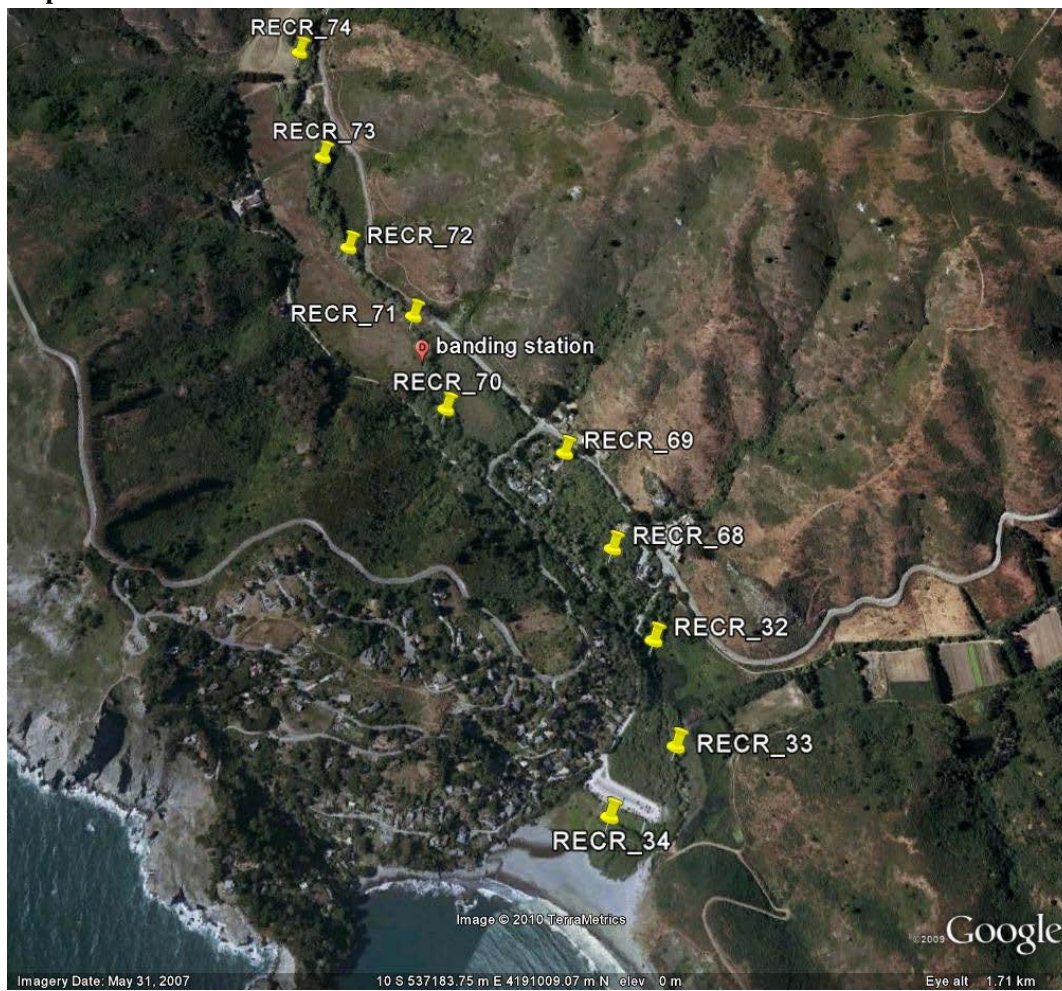
Coordinates: UTM, NAD83, Zone 10S

RECR32	537394	4190728	RECR70	536984	4191145
RECR33	537439	4190543	RECR71	536908	4191329
RECR34	537326	4190418	RECR72	536769	4191465
RECR68	537313	4190893	RECR73	536700	4191658
RECR69	537216	4191070	RECR74	536629	4191890

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
2005	2006	Humple	Redid narrative style to match new one.	Change in narrative protocol
2006	2007	Humple	Added details to point descriptions; changed parking instructions	Details will help find people points; parking instructions updated since can't park at lower end of transect anymore
2007	2008	Humple	Added details and modifications to point descriptions; changed project to Palomarin	Details will help find people points; changed some (e.g., point 73) for which landmarks had changed; changed long-term Palo run sites to project=Palomarin
2008	2010	Humple	Added details and modifications to point descriptions; changed coordinates for point 34; added map	Changed some for which landmarks had changed. Also, point 34 had to move 15m due to flooding and channelization from restoration at Big Lagoon; changed coordinates.
2010	2011	Humple	Added map and fine-tuned some details	Needed map and observed some changes at points plus restoration

Map:



Tennessee Valley (TEVA), Golden Gate National Recreation Area, Marin County, CA

Project: Coastal NPS Monitoring (CNPSM)

No. Points: 13

Getting there: Take Hwy 1 to Mill Valley. Turn south on Tennessee Valley Road. Park where the road ends at the Miwok Livery Stables. Points 1-7 are separated from points 26-31; it's handy to bike between the sections, but you'll have to ditch your bike in the bushes; both sections are on no-bike-allowed trails.

Notes: point 67 established and surveyed in 1998 only, dropped from transect afterwards and not included here.

TEVA 28: From the main parking lot, take the Miwok trail for a few dozen meters; get off the trail before the riparian and walk parallel up the riparian corridor (upstream).

TEVA 29: Back on the trail. Take Rhubarb trail which parallels Tennessee Valley Road.

TEVA 30: Trail goes in gully; the pt is after the gully between the euc groves

TEVA 31: The tag is on a euc tree which is part of the first euc grove on the trail side of the riparian.

Walk up (north) Tennessee Valley Road and cross the road. There are two Oakwood Valley Trails to your right.

TEVA 27: Take the second Oakwood Valley Trail (more north). Take side trail where plum trees are. Tag is on incense cedar (2011: did not find tag, but there are cedars)

TEVA 26: Continue up Oakwood Valley Trail. Point on oak tree in middle of Euc grove

Points 7-1: Head back to the parking lot and down Tennessee Valley

TEVA 7: On left of trail, across from where side drainage meets main riparian.

TEVA 6: Just after trail intersection, walk down into riparian.

TEVA 5: At Monterey Pine

TEVA 4: take trail across creek. Point is on east side of the creek, just off trail

TEVA 3: down riparian corridor across from coyote bush clump on east side of creek

TEVA 2: On east side of creek at edge of cattails

TEVA 1: More than 200m from Pt 2, east side of trail, just past willows.

Coordinates: UTM, WGS84/NAD83

TEVA_1	37.84326	-122.55145	TEVA_26	37.86815	-122.52536
TEVA_2	37.84643	-122.54851	TEVA_27	37.86908	-122.52706
TEVA_3	37.84683	-122.54662	TEVA_28	37.86157	-122.53598
TEVA_4	37.84741	-122.54453	TEVA_29	37.86316	-122.53442
TEVA_5	37.84845	-122.54268	TEVA_30	37.86473	-122.53348
TEVA_6	37.84904	-122.54032	TEVA_31	37.86612	-122.53233
TEVA_7	37.85057	-122.53887			

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
1998?	2011	Humple	Standardization & Word version created	Needed map/coordinates
2011	2011	Porzig	Updated narrative. CADC current	outdated

Map:



Upper Olema Creek (UPOL), Point Reyes National Seashore, Marin County, CA

Project: Coastal NPS Monitoring (CNPSM)

No. Points: 13

Getting there: To get to point 78 from Olema, go 1.9 miles to intersection with Hwy 1, turn L on Sir Francis Drake, and first point is 0.3 miles after the intersection (park at large turnout / parking area for Olema Trail on L side of road). To get to point 90 from Olema, turn L towards PRNS HQ, and park at large pullout on R ~0.4 m from Hwy 1.

Notes: Runs parallel to Bear Valley (BEVA) transect; potential for coordination with person counting that transect. Points are 200-250m apart. Need rubber boots. Some poison oak (rain pants helpful). Transect is not along a trail, and some points require serious bushwacking, so start early and prepare for a long survey. Potentially do points 89 + 90, then drive further up road to park on other side of marsh to access 88, and do 88-78 on foot from there.

UPOL 90: Across pasture from large pullout on Bear Valley Road between Olema and Bear Valley Headquarters. Can access meadow from road from deer trail just before pullout (other side of willow). Do point from willow edge.

UPOL 89: Go downstream; point at edge of riparian and huge cattail marsh.

UPOL 88: Crossing marsh from pt 89 is strongly inadvisable. Quickest to return to vehicle from points 89/90, drive or walk further up road past PRNS HQ, and park on R at pullout at yellow bicycle / share the road sign across from white & green park buildings. Cross gate and walk on far side of marsh edge back toward riparian. Point at lone piece of wooden fence at riparian edge well before large live oak.

UPOL 87: Continue along riparian edge, head upslope from oaks, then head through riparian to pt. Point in willow patch near edge of grassy meadow on other side of riparian (meadow to East of point, and another riparian swath to East of meadow). Unsure of best way to get from 88 to 87.

UPOL 86: Continue downstream. As soon as can (most efficiently), cross creek to west side of riparian again. Pt in willows is back on West side of creek and near riparian edge, point is where alder, live oak, and willow come together.

UPOL 85: Walk along West edge of riparian and continue North along riparian/meadow edge. Point Beneath live oak.

UPOL 84: Continue same direction. Point on metal fencepost at North/far end of meadow.

UPOL 83: Difficult access. Continue downstream along creek (even in creek when possible), and as soon as possible get above riparian (W. side) and continue along edge of meadow. On giant Live Oak that is along fence.

UPOL 82: Continue downstream along riparian/meadow edge. Cross fence, drainage, and second fence (or go up and around both). Stay high above creek and eventually follow deer trail for a good way (maybe old cattle trail; well established). Point on willow at P.O. clump, where trail goes into open meadow.

UPOL 81: Continue on riparian edge, cross 2 fences (or go up and around both) and continue along edge to point. Point along willows and fence on side of grassy hill, 40 m upstream from distant fence (that's perpendicular to riparian edge and fence you've been following).

UPOL 80: Continue NW and cross fence, then cross edge of swallow box meadow, staying along riparian W. Edge, but ducking through willows into the next meadow when possible. Point on alder among willows, in willow cove. Do from willow edge.

UPOL 79: Continue along riparian edge of bird box meadow. At 2nd telephone pole after (downstream of) house, turn into riparian at opening. Point on willow near blackberry clump..

UPOL 78: Go back out to riparian edge by second telephone pole downstream of house and head N. along edge, passing ponds. At far (downstream/N) end of 2nd pond, turn into to R (NE). At corner where willows along stream meet willow along road. Do from willow edge. Note, to get out to road from here (or to get to the point from the road), from 78 come out via old 2-track / trail just W of where telephone wire you've followed intersects with road and telephone wire along road. To return to your car at other end of transect, take Olema Trail South (this is the trail / 2-track) and then turn L when hit road and walk along road.

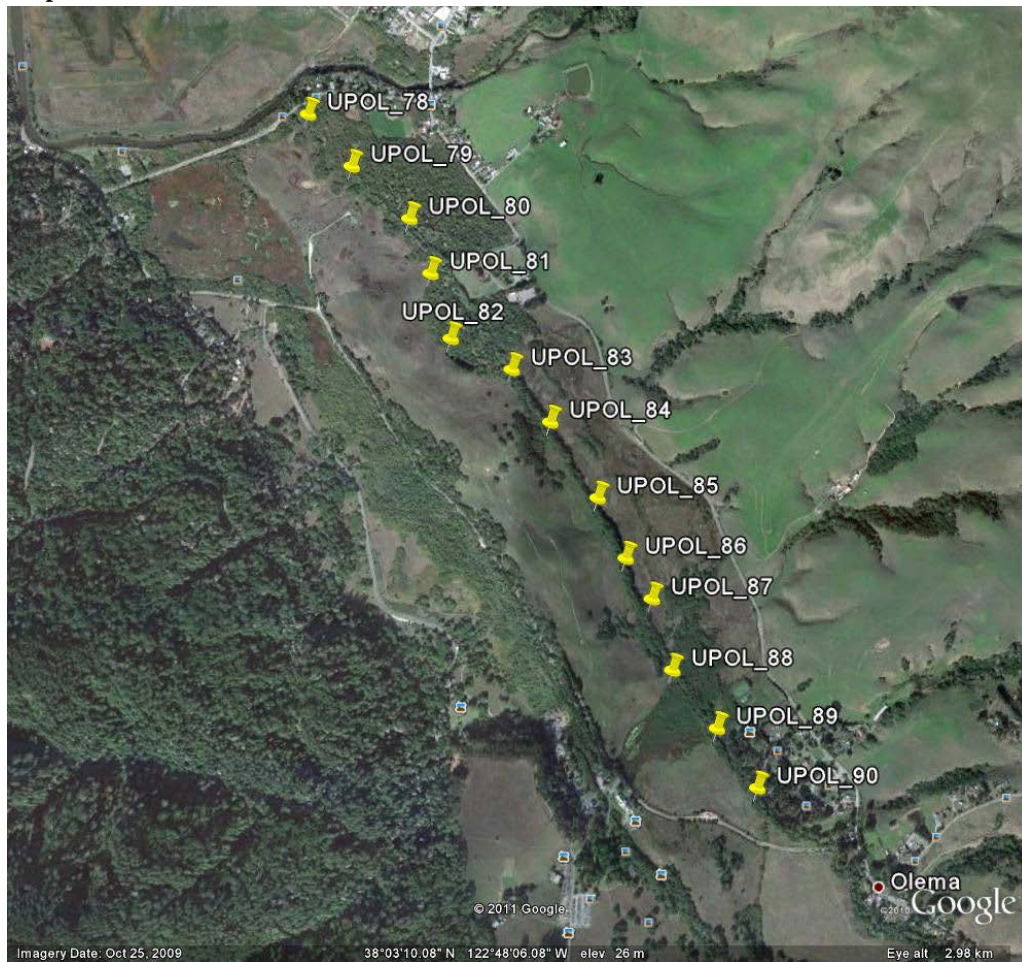
Coordinates: UTM, WGS84/NAD83

UPOL_78	38.06346	-122.80996	UPOL_85	38.05194	-122.79888
UPOL_79	38.06190	-122.80829	UPOL_86	38.05014	-122.79781
UPOL_80	38.06033	-122.80607	UPOL_87	38.04892	-122.79682
UPOL_81	38.05867	-122.80527	UPOL_88	38.04679	-122.79604
UPOL_82	38.05672	-122.80449	UPOL_89	38.04505	-122.79435
UPOL_83	38.05579	-122.80217	UPOL_90	38.04327	-122.79281
UPOL_84	38.05422	-122.80069			

Revision History Log:

Previous Version Year	Revision Year	Author	Changes Made	Reason for Change
2005?	2011	Humple	Standardization; changed site descriptions as per habitat changes. CADC current	Needed map/coordinates; habitat change

Map:



The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

NPS 641/126786, October 2014

National Park Service
U.S. Department of the Interior



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