



Principal Investigators - please use this form to submit your MPA Baseline Program project annual report, including an update on activities completed over the past year and those planned for the upcoming year. This information will be used by the MPA Baseline Program Management Team to track the progress of individual projects, and will be provided to all MPA Baseline Program PIs and co-PIs prior to the Annual PIs workshop to facilitate discussion of project integration. Please submit this form to California Sea Grant when complete (sgreport@ucsd.edu, Subject [Award Number, project number, PI, "Annual Report"].)

Project Information

Project Year 2011 Study Region North Central Coast

Project Title & Number Baseline Characterization of Newly Established Marine Protected Areas within North Central California Study Region - Seabird Colony and Foraging Studies; R/MPA-6B

PI name Gerry McChesney Co-PI name Dan Robinette

PI Contact Info Co- PI Contact Info (please list additional PIs and contact info in the "Project Personnel" section if necessary)

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Project Goals & Objectives

Provide a characterization of seabird breeding populations within the MLPA-NCCSR, including comparisons inside and outside of MPAs, with a focus on species likely to benefit from MPAs, by: estimating annual productivity; assessing breeding population sizes and distribution; estimating foraging rates; and assessing human disturbance. Part of the characterization will include assessments of effects of ocean conditions versus other potential factors that may affect these parameters. Focal species include Pelagic Cormorants, Brandt's Cormorants, Common Murres, and Pigeon Guillemots, although other species are also being examined for comparison.

Summary of Project Activities Completed to Date

Overview of Project Year 2__ Activities, including progress towards meeting goals & objectives

This study is being conducted in cooperation with Dan Robinette of PRBO Conservation Science. However, we are conducting studies at different locations. This report summarizes the McChesney portion only.

Seabird Productivity

Seabird productivity, measured as the numbers of chicks fledged per breeding pair, was studied from mid-April until August at three seabird colony complexes: Point Reyes; Drakes Bay; and Devil's Slide. Species included Common Murre, *Uria aalge*; Brandt's Cormorant, *Phalacrocorax penicillatus*; Pelagic Cormorant, *Phalacrocorax pelagicus*; Western Gull, *Larus occidentalis*; and Black Oystercatcher, *Haematopus bachmani*. In addition, we monitored productivity of Pigeon Guillemots (*Cephus columba*) at Point Reyes within artificial nest boxes established in 2010.

Seabird Breeding Population Sizes

To assess relative breeding population sizes at focal colony complexes (Point Reyes; Drakes Bay; and Devil's Slide), land-based nest and/or bird counts of Brandt's Cormorants, Pelagic Cormorants, Black Oystercatchers, Western Gulls, Common Murres and Pigeon Guillemots were conducted weekly during the breeding season (Table 4). To provide more complete colony coverage, single day boat surveys were conducted at each colony complex during the peak of the breeding season in June.

During the month of June, boat surveys of most of the NCCSR seabird colonies were conducted to provide updated population size and distribution information for the baseline characterization. These surveys had been planned for 2010 but were postponed because of unfavorable El Niño conditions and a delayed breeding season. In 2011, the entire nearshore coast of the NCCSR was surveyed except for colonies between Sea Ranch and Timberland Cove (Sonoma County) and Pillar Point Harbor to Pigeon Point, which were not completed because of rough sea conditions.

Seabird Foraging

We conducted our second year of land-based seabird foraging studies both within and outside MPAs at Point Reyes and Millers Point Rocks (Marin County).

Boat Disturbance

We examined boat disturbance at all focal seabird colony complexes, including Point Reyes, Drakes Bay, and Devil's Slide, including newly-established Special Closures at Point Reyes Headlands, Point Resistance, Stormy Stack, and Devil's Slide Rock. Data collected included all boats approaching within 1,500 feet (457 m) of a study colony or within a Special Closure, numbers of birds disturbed, and type of disturbance.

Highlights from project progress so far, such as successes achieved or interesting stories from the past year

Based on seabird productivity, 2011 appears to have been an average to somewhat below average year overall. The Gulf of the Farallones Brandt's Cormorant population showed partial recovery following a population crash that began in 2008, although productivity for this species was still relatively low. Surveys of colonies throughout the NCCSR found that Common Murres appear to be expanding their breeding range in the region, with apparently new colonies at Fish Rocks (Mendocino County) and Gualala Point Island (Sonoma County). If breeding is confirmed, this would be a new breeding species for Sonoma County. These new colonies are likely associated with a southward range expansion in Mendocino County that has been ongoing for the last three decades.

Additional use of the Pigeon Guillemot nest boxes occurred in 2011 at the Point Reyes Fish Dock. Twenty nest boxes were established in 2010 to monitor guillemot productivity. Only one box was used in 2010 but four boxes had eggs laid in 2011, with two chicks fledged. This species normally breeds in nearly inaccessible rock crevices in cliffs or offshore rocks, so over time the boxes should provide a means to better study this species.

Description of any unforeseen events and substantial challenges, and resulting effect on data collection

Rough sea conditions and a boat accident in June 2011 made completion of NCCSR-wide seabird colony surveys difficult to complete. However, all but two sections were completed (see above). Because of difficulty identifying Pigeon Guillemot prey items and difficulty accessing Brandt's Cormorant breeding areas, we were unable to collect diet information on these species as proposed.

Data status (i.e., paper/raw format or digitized; if digitized, what format?)

Data have been entered onto both paper forms and into an MS ACCESS database.

Activities Planned for following Project Year __ (if applicable) – Please describe remaining work and approximate timelines for completing that work, including any anticipated budget variances necessary to complete the project.

In June 2012, we will attempt to survey seabird colonies in the remaining two portions of the NCCSR not completed in 2011: Sea Ranch to Timberland Cove and Pillar Point Harbor to Pigeon Point. No other data collection is planned. We will finalize databases, including metadata, and work on final report.

Project Personnel – Please indicate additional project personnel involved in your MPA baseline project, including students and volunteers, or additional PI contact information if necessary.

	<i>Students Supported</i>	<i>Student Volunteers</i>
<i>K-12</i>		
<i>Undergraduate</i>		
<i>Masters</i>		
<i>PhD</i>		

Number of other Volunteers not counted above:

Additional PI contact info not listed on first page:

Cooperating Organizations and Individuals - Please list organizations or individuals (e.g., federal or state agencies, fishermen, etc.) that provided financial, technical or other assistance to your project since its inception, including a description of the nature of their assistance.

<i>Name of Organization or Individual</i>	<i>Sector (City, County, Fed, private, etc.)</i>	<i>Nature of cooperation (If financial, provide dollar amount.)</i>
<i>Humboldt State University Sponsored Programs Foundation</i>	<i>State</i>	<i>Technical assistance, field staff for seabird colony monitoring.</i>
<i>Carter Biological Consulting</i>	<i>Private</i>	<i>Staff and technical assistance with NCCSR-wide seabird colony surveys</i>

Additional Information – Please provide any other project-relevant information, such as descriptions of attached materials, media coverage your project has received, etc.