Proposed Seabird Monitoring Within the North Central Coast Study Region of the Marine Life Protection Act Initiative

Plan of Work

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The Seabird component of the NCCSR baseline monitoring will be accomplished through four main tasks: disturbance monitoring, foraging monitoring, colony monitoring, and a NCCSR-wide breeding population census for four species lacking recent baseline data.

Disturbance Monitoring. The disturbance monitoring will focus on Special Closures to be established within the NCCSR. Data on colony disturbances have been collected at all four mainland Special Closures since at least 2005 and, in some cases, since 2001. Data has also been collected at the existing Southeast Farallon Islands State Marine Conservation Area, but with a different protocol than mainland sites. All existing data will be compiled and included within our baseline assessment. Additionally, new data will be collected to assess efficacy of Special Closures and ensure better standardization between mainland and island Special Closure monitoring.

Foraging Monitoring. We will use the protocol established by PRBO for monitoring at the Vandenberg State Marine Reserve. We will follow the BACI design outlined within our Project Scope and monitor foraging distributions at three MPA clusters: Bodega Head SMR/SMCA, Point Reyes SMR/SMCA, and Montara SMR/Pillar Point SMCA. Since no foraging data currently exist for these sites, only newly collected data will be used for the baseline assessment.

Colony Monitoring. The colony monitoring will focus on the five 'species likely to benefit' outlined in our Project Scope: Pigeon Guillemot, Pelagic Cormorant, Brandt's Cormorant, Common Murre, and Black Oystercatcher. For all species except Pigeon Guillemots, nest sites will be located and enumerated to determine population size and contents of visible nests will be checked at least every 7 days to follow colony productivity throughout the breeding season. For the crevice-nesting Pigeon Guillemots, standardized early-morning counts of birds rafting on the water will provide information on population size. Productivity will be monitored at the Point Reyes Headlands by checking the contents of nest boxes developed specifically for this study. Observations on guillemot diet will be made at the Point Reyes Headlands and other colonies where chick provisioning can be observed. Regurgitations from cormorant colonies will be collected if the colony is accessible, but these samples will not be processed until additional funding can be secured.

NCCSR-wide Population Census. We will use a combination of boat- and land-based surveys to establish a NCCSR-wide baseline of population size and distribution for three of the focal species plus one additional species that are in need of updated baseline information: Pelagic Cormorant; Pigeon Guillemot; Black Oystercatcher; and Western Gull. This census will be attempted in 2011. However, the 2009-10 El Niño event can potentially have a negative impact on 2010 breeding efforts. If this is the case, we will delay the NCCSR-wide survey until 2011. Survey data will be combined with other recent surveys of Double-crested Cormorants, Brandt's Cormorants, and Common Murres for a more complete assessment of seabird populations in the NCCSR.

All field work will be conducted during the 2010 and 2011 breading seasons. We will reserve the third year of this project to summarize baseline conditions within NCCSR and integrating this information into any ecosystem-based assessments produced for the NCCSR.

Outcomes and Deliverables

All data collected with Sea Grant funds will be housed within PRBO's California Avian Data Center (CADC) unless otherwise directed by the Monitoring Enterprise. CADC is an in-use, secure, and well-tested platform that provides a powerful cost-effective solution to the data consolidation and management needs of this MPA baseline characterization group. Utilities made available through this online portal will enable data collected in the past and future to be integrated to provide managers information on the effectiveness of MPA establishment at multiple scales (e.g. within the MPA to region-wide analyses). Additionally, PRBO's umbrella proposal for integrating ecosystem metrics across the NCCSR includes developing a suite of "BACI Engine" analytical tools within CADC. Our data will already be formatted for use within this analytical framework.

We will produce annual reports at the end of 2010 and 2011 to update the Monitoring Enterprise and Ocean Science Trust on the status of our monitoring efforts. We will provide brief summaries of indicator metrics and our progress in baseline characterization. If integrated with other monitoring efforts, these reports can also be used to keep policy-makers, managers, educators, and the general public engaged in the MLPA process. We will present our annual reports to the California Fish and Game Commission during their public meetings.

We will produce a final report at the end of 2012 that will outline 1) baseline seabird conditions within our defined study area and 2) recommendations for future long-term monitoring within the NCCSR.

Milestone Chart