

## Project Summary Form - California Sea Grant - Fillable PDF

**Institution:** University Of California, California Sea Grant College

**ICode:** 0600

**Title:** Collaborative Surveys of Nearshore Fishes In and Near Central California MPA's

**Project Number:** 07-109

**Revision Date:**

**Project Status:** 1 = new

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**SubProgram:** Research - Coastal Ocean Research

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**Last First Initial**

**Principal Investigator:** Wendt Dean E **Effort:** 38.3%

**Affiliation:** California Polytechnic State University **Affil. Code:** 0654

**Co-Principal Investigator:** Starr Richard M **Effort:** 35% (est.)

**Affiliation:** Moss Landing Marine Laboratories (SJSU) **Affil. Code:** 0628

**Assoc. Investigator 1:** **Effort:**

**Affiliation:** **Affil. Code:**

**Assoc. Investigator 2:** **Effort:**

**Affiliation:** **Affil. Code:**

**Sea Grant Funds:** \$721,160

**State Matching Funds:** \$46,728

**Last Year Sea Grant Funds:**

**Last Year Matching Funds:**

**Pass-Through Funds:**

**Last Year Pass-Through:**

**Related Projects:**

**Parent Projects:**

**Sea Grant Classification:** No. 21, 31 Classif. Environmental Monitoring and Assessment and EBM

**Keywords:** Collaborative Fisheries, Citizen Scientists, Nearshore Fish, MPA Monitoring

### Objectives:

We are proposing to monitor Central California MPAs by conducting collaborative research activities with scientists at academic institutions and the commercial and recreational fishing industries of Port San Luis, Morro Bay, Monterey, Moss Landing, and Half Moon Bay, California. We are further proposing to engage the general public in the project by using "citizen scientists" (e.g., recreational fisherman, members of the conservation community, etc.) to help monitor the MPAs and reference sites. The primary objectives of our proposed project are to collect baseline information and develop protocols for a collaborative monitoring program, from which to evaluate long-term changes in fish communities of nearshore rocky habitats associated with MPAs off central California. Our project will provide the biological information necessary to evaluate effectiveness of regional MLPA Goal 1 (protect the natural diversity and abundance of marine life, and the structure, function, and integrity of marine ecosystems), Goal 2 (help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted), and will provide information with which to address Goal 6 (ensure that the central coast's MPAs are designed and managed, to the extent possible, as a component of a statewide network). It is our belief (and experience) that engaging the fishing community and broader public in the process of implementation of the MLPA is critical to the success of this landmark conservation effort.

**Methodology:**

We will collect information on species composition, size composition (length and weight), sex (when possible), and CPUE. Four nearshore MPA sites and four corresponding reference sites will be selected for monitoring, for a total of eight sites. The 4 MPAs (Año Nuevo State Marine Reserve (SMR), Point Lobos SMR, Piedras Blancas SMR and Point Buchon SMR) we will be monitoring were specifically chosen for several reasons: 1) the nearshore rocky habitat within the selected MPAs is extensive and representative of the rocky habitat in the entire central coast region, so we will be able to extrapolate our results to other areas; 2) three of the four sites are popular fishing areas for both recreational and commercial fisherman (Pt. Lobos has been closed since 1973); 3) including Pt. Lobos will allow us to determine how an MPA that has been in place for several years will "behave" relative to reference sites and newly established MPAs; and, 4) the sites are located relatively close to ports and as such are readily sampled in a single day. Our approach is to identify nearshore rock habitats and stratify these areas with 200m by 200 m grids. We will then present these maps to fishermen and ask them to rate each grid based on their knowledge of its fishing productivity. To detect change over time, we will use fixed stations. We will establish fixed stations based on conversations with fishermen about historically fished areas. In this way we are incorporating fisher experience and knowledge into our sampling protocol. This combination of fixed station sampling and random sampling will provide the greatest opportunity to detect both spatial and temporal changes within and near MPAs. Once at sea, the fishermen will fish anywhere within the cells they deem appropriate using standardized fishing methods (traps, sticks, hook and line gear; ca. 640 citizen scientists will be used per year). All captured species will be measured, tagged with external T-bar anchor tags, and released at location of capture. Our previous data suggests that given the variability between sampling events, we need to sample at least 8 days within a given MPA or reference site. Our schedule will thus include 2 days of sampling for each of three gear types during the months of July to October.

**Rationale:**

The rationale for the proposed study is to use a collaborative fisheries approach and citizen scientists to help monitor California's marine protected areas established as part of the Marine Life Protection Act. The process for design of California's MPAs incorporated stakeholder knowledge and input through the active design of the network of reserves by regional stakeholder groups. It is critical for the successful implementation of the MLPA that fishermen and other stakeholders take an active role and ownership in the monitoring process as well. Moreover, collaborative approaches to fishery management are gaining support in recent years and our methodology allows us to also collect meaningful data for use in fisheries management as well. Collaborative research has been identified in many policy documents as a desirable way to bridge the gap in credibility of data provided by researchers and fisherman. The policy benefits include increased utilization of the fishing industry's expertise, more information for managers, increased acceptance of data used in management, and increased sense of co-management of resources.

**Accomplishments:**

We expect to extend our demonstrated value through the proposed program by engaging the general public and fishing industry in a scientifically sound monitoring program and providing critical data to develop a baseline for monitoring MPA effectiveness. Both PIs on the project (Rick Starr, Moss Landing; Dean Wendt, Morro Bay) have successfully worked with the fishing community to gather management-relevant data on near-shore fish species. We have spent a combined time of over 330 days at sea with the fishing industry and we have previously collected "inside/outside" comparisons at Big Creek Marine Reserve with commercial fishermen. As such, the proposed program rests on a foundation of successful multiyear collaborative-research efforts conducted by the PI's. Indeed, the results from the previous efforts have been presented in reports, at academic society conferences and in peer-reviewed journals. Moreover, the data from our previous studies have been requested for use in current stock assessments (e.g., the blue rockfish, cabezon) further illustrating the previous success we have had working with fishermen to collect fisheries-relevant information.