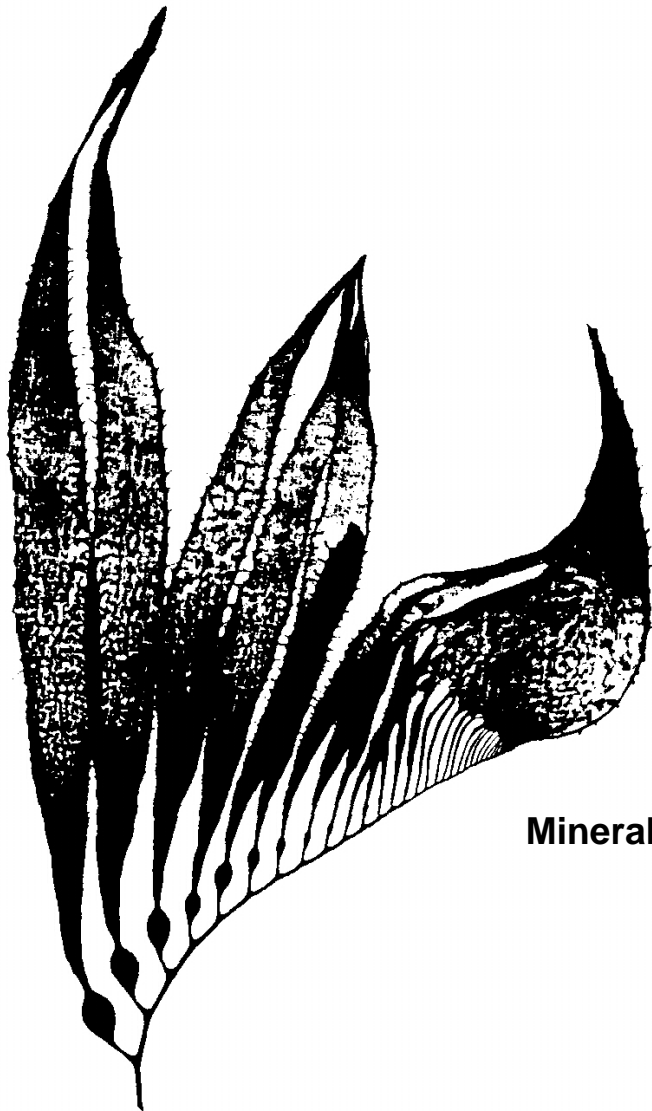


**COASTAL MARINE INSTITUTE
PROGRAM YEAR 12
QUARTERLY REPORT 3**

for the period

January 1, 2006 – March 31, 2006



*A Cooperative Agreement
between the*
University of California
and the
Minerals Management Service

April 17, 2006

**COASTAL MARINE INSTITUTE
PROGRAM YEAR 12**

QUARTERLY REPORT 3

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Minerals Management Service

Russell J. Schmitt
Program Manager

Coastal Research Center
Marine Science Institute
University of California
Santa Barbara, California, 93106-6150

April 17, 2006

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Program Manager's Report

for the period January 1, 2006 – March 31, 2006

This constitutes the quarterly report for the third quarter for Program Year 12 of the Coastal Marine Institute, a cooperative research agreement between the Minerals Management Service, the state of California and the University of California. As of this quarter, 2 projects are currently being conducted under the aegis of the Coastal Marine Institute, 7 projects are currently writing Draft Final Reports, and 2 projects are making revisions to their Final Reports. The 3 Rocky Intertidal Inventory projects will submit Final Study Reports directly to MMS.

MMS Actions Required:

- ◆ **Task 17611:** *Simulation of a Subsurface Oil Spill by a Hydrocarbon Seep (SSOS-HYS) and Task 18211: Oil Slicks in the Ocean: Predicting their Release Points Using the Natural Laboratory of the Santa Barbara Channel*, needs: report study #, MMS comments (sent 12/05).

Major Programmatic Progress and Actions during the Quarter:

- ◆ **Task 14181:** *Population Trends and Trophic Dynamics in Pacific OCS Ecosystems: What Can Monitoring Data Tell Us?* ended September 30, 2005. The Draft Final Report was requested from the Principal Investigators and will be submitted during the next quarter;
- ◆ **Task 17606:** *Population Genetics of Surfgrass (*Phyllospadix torreyi*) for Use in Restoration* ended September 30, 2005. The Draft Final Report was requested from the Principal Investigators and will be submitted during the summer quarter;
- ◆ **Task 17609:** *Advancing Marine Biotechnology: Use of OCS Oil Platforms as Sustainable Sources of Marine Natural Products* ended September 30, 2005. The Draft Final Report was requested from the Principal Investigators and will be submitted during the summer quarter;
- ◆ **Task 85338:** *Weathering of Oil and Gas in the Coastal Marine Environment: Quantifying Rates of Microbial Metabolism* ended September 30, 2005. The Draft Final Report was requested from the Principal Investigators and will be submitted during the next quarter;
- ◆ **Task 85339:** *Ecological Performance and Trophic Links: Comparisons among Platforms and Natural Reefs for Selected Fishes and their Prey* ended September 30, 2005. The Draft Final Report was requested from the Principal Investigators and will be submitted during the summer quarter;
- ◆ **Task 85340:** *Relative Importance of POCS Oil Platforms on the Population Dynamics of Two Reef Fishes in the Eastern Santa Barbara Channel* ended September 30, 2005. The Draft Final Report was requested from the Principal Investigators and will be submitted during the next quarter;

- ◆ **Task 85386:** *Observations of the Surface Circulation in the Eastern Santa Barbara Channel Using High Frequency Radar and Lagrangian Drifters* ended September 30, 2005. The Draft Final Report was requested from the Principal Investigator and will be submitted during the next quarter;
- ◆ **Task 17605:** The Draft Final Report for *Population Dynamics and Biology of the California Sea Otter at the Southern End of its Range* was completed and submitted to MMS. The Final Study Report will be submitted to MMS during the next quarter;
- ◆ **Task 13096:** The Draft Final Report for *Utilization of Sandy Beaches by Shorebirds: Relationships to Population Characteristics of Macrofauna Prey Species and Beach Morphodynamics* was completed and submitted to MMS. The Final Study Report will be submitted to MMS during the next quarter.

MMS Final Study Reports and Final Technical Summaries Completed

- ◆ **Task 12390:** Hannemann and Krosnick, *Testing and Calibrating the Measurement of Nonmarket Values for Oil Spills Via the Contingent Valuation Method*, (submitted to MMS: March 13, 2006);
- ◆ **Task 18213:** Schlenk, *Use of Biological Endpoints in Flatfish to Establish Sediment Quality Criteria for Polycyclic Aromatic Hydrocarbon Residue and Assess Remediation Strategies*, (submitted to MMS: March 13, 2006);
- ◆ **Task 18212:** Ohlmann, *Transport over the Inner Shelf of the Santa Barbara Channel*, (submitted to MMS: March 13, 2006).

Task 85340: *Relative Importance of POCS Oil Platforms on the Population Dynamics of Two Reef Fishes in the Eastern Santa Barbara Channel*

Principal Investigators: **Hunter Lenihan**, Bren School of Environmental Science & Management, University of California, Santa Barbara, California 93106, and **Andy Brooks**, Marine Science Institute, University of California, Santa Barbara, California 93106

Major Accomplishments, January 1, 2006 – March 31, 2006:

A Draft Final Report of this study is in preparation and will be submitted to MMS during the next quarter.

Future Plans:

We will finalize and submit our Draft Final Report in the next quarter.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%

Task 85339: *Ecological Performance and Trophic Links: Comparisons among Platforms and Natural Reefs for Selected Fishes and their Prey*

Principal Investigators: **Mark Page**, Marine Science Institute, University of California, Santa Barbara, California 93106, **Jenifer Dugan**, Marine Science Institute, University of California, Santa Barbara, California 93106, **Milton Love**, Marine Science Institute, University of California, Santa Barbara, California 93106, and **Hunter Lenihan**, Bren School of Environmental Science & Management, University of California, Santa Barbara, California 93106

Major Accomplishments, January 1, 2006 – March 31, 2006:

A paper describing exotic invertebrate species inhabiting POCS offshore oil platforms was accepted for publication in Marine Ecology Progress Series.

We continued to focus our efforts on writing the Draft Final Report and associated publications this past quarter.

Future Plans:

We will finalize and submit our Draft Final Report in the summer quarter.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100 %

Task 85386: *Observations of the Surface Circulation in the Eastern Santa Barbara Channel Using High Frequency Radar and Lagrangian Drifters*

Principal Investigator: Libe Washburn, Institute of Computational Earth System Science, University of California, Santa Barbara, California 93106

Major Accomplishments, January 1, 2006 – March 31, 2006:

We continued to focus our efforts on writing the Draft Final Report and associated publications this past quarter.

List of Personnel Associated with the Project:

Principal Investigator:	Libe Washburn
Programmer Analyst:	Brian Emery
Staff Research Associate:	David Salazar
Graduate Students:	Mary Nishimoto Christopher Melton
Undergraduate Students:	Justin Pearson Joshua Kleiner

Future Plans:

We will finalize and submit our Draft Final Report in the next quarter.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%

Task 85338: *Weathering of Oil and Gas in the Coastal Marine Environment: Quantifying Rates of Microbial Metabolism*

Principal Investigator: David Valentine, Department of Geology, University of California, Santa Barbara, California 93106

Major Accomplishments, January 1, 2006 – March 31, 2006:

During this reporting period, we continued our analysis of the data. We are now in the process of compiling the Draft Final Report and the Draft Technical Summary for this project.

Future plans:

We will submit the Draft Final Report and Technical Summary in the next reporting period.

Problems Encountered:

None

MMS Action Required:

None

List of Personnel Associated with the Project:

Principal Investigator:	David Valentine
Graduate Student Researcher:	George Wardlaw
Undergraduate Student Researchers:	Frank Kinniman Alison Schlosser

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%
Project Year 3:	100%

Task 18234: *Spatial and Temporal Variation in Recruitment to Rocky Shores: Relationship to Recovery Rates of Intertidal Communities*

Principal Investigators: **Peter Raimondi**, Department of Ecology and Evolution, University of California, Santa Cruz, CA. and **Richard Ambrose**, School of Public Health, Department of Environmental Sciences, University of California, Los Angeles, CA

Major Accomplishments, January 1, 2006 – March 31, 2006:

Recruitment

Safety-walk plates and tuffies were exchanged at Point Sierra Nevada, Stairs and Point Fermin in January, February and March. *Silvetia* and *Endocladia* collectors were exchanged in February at all three sites. Algal collectors and natural recruitment were sampled monthly.

Recovery Plot Sampling

Recovery plots were sampled at all three sites in late March/early April 2006. A Uniform Pt. Contact (UPC) grid was used to quantify percent cover of each recovery plot and three control plots in the *Chthamalus*, *Endocladia*, *Silvetia* and *Mytilus* zones. Mobile invertebrates were counted in each recovery and control plot. Photographs were taken of all plots at all sites using a digital camera and photo-framer.

Laboratory Work

Monthly barnacle recruitment plates and mussel recruitment collectors (tuffies) are currently being sampled in the lab by Tish Conway-Cranos and two undergraduate volunteers.

Publications and Presentations

Tish Conway-Cranos contributed an article to the Cabrillo Aquarium Quarterly Newsletter “Tidelines” entitled “Disturbance and Recovery on Rocky Seashores.”

List of Personnel Associated with the Project:

Principal Investigators:	Peter Raimondi Richard Ambrose
Technician/Graduate Student:	Tish Conway-Cranos
Lab Volunteers:	Christina Leard Ashley Cleland
Field Volunteers:	Kelley Higgason (UCSC undergraduate) Ben Perlman (UCSC undergraduate) Justin Milgrim Katie Spencer Morgan Bond (UCSC) Christy Roe (UCSC) Melissa Miner (UCSC) Mary Elaine Dunaway (MMS) Dawn Jech (UCSC) Yuri Springer (UCSC) Hilary Hayford (UCSC)

Field Volunteers continued: Haven Livingston (UCSC)
Mark Readdie (UCSB)
Darren Johnson
Melissa Foley (UCSC)
Tom Adam (UCSB)
Aimee Bullard (CSU Fullerton)
Eric Miller
Caroline Engel (UCSC)
Melissa Redfield (UCSC)
Dave Lohse
Galen Holt
Nora Grant (UCSC)

Future Plans:

Recruitment collectors will be exchanged and natural recruitment sampled in adjacent plots every month at all three sites. Cleared plots will be sampled every six months. Molecular methods will be used to identify the *Mytilus* species that recruit into the tuffies.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%
Project Year 3:	95%

Task 17611: *Simulation of a Subsurface Oil Spill by a Hydrocarbon Seep (SSOS-HYS)* and
Task 18211: *Oil Slicks in the Ocean: Predicting their Release Points Using the Natural
Laboratory of the Santa Barbara Channel*

Principal Investigators: **Jordan Clark**, Department of Geological Sciences, **Bruce Luyendyk**,
Department of Geological Sciences, and **Ira Leifer**, Institute of Crustal Studies,
University of California, Santa Barbara, California 93106

Major Accomplishments, January 1, 2006 – March 31, 2006:

The Draft Final Report was submitted to the Minerals Management Service for review. We are awaiting MMS comments on this report.

Future Plans:

Revise, if necessary, the Draft Final Report and submit the Final Report for this project.

Problems Encountered:

None

MMS Action Required:

A MMS report study number and reporting comments are required.

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%

Task 17610: *Joint UCSB-MMS Pacific OCS Student Internship Program*

Principal Investigators: **Jenifer Dugan**, Coastal Research Center, Marine Science Institute, University California, California. 93106, and **Edward A. Keller**, Environmental Studies Program, University of California, Santa Barbara, California, 93106

Major Accomplishments, January 1, 2006 – March 31, 2006:

One intern worked on MMS and MMS/CMI projects during Winter 2006. Jennifer Klaib, an undergraduate intern mentored by Ms. Dunaway of MMS and Dr. Engle of UCSB, continued to assist with and coordinate online data reporting for the MARINE rocky intertidal monitoring program. We anticipate hiring at least one graduate student intern to be mentored by Dr. Hodges of UCSB to process the data on genetic structure of surfgrass populations from images of gels for Spring 2006. These data were lost due to a computer problem and are critical to completing the CMI report and manuscripts on the genetic structure of surfgrass populations. We are working with Fred Piltz, Mary Elaine Dunaway, and other MMS personnel to arrange additional internship opportunities for MMS during Spring and Summer 2006, potentially including a graduate student from UCLA.

No Information Transfer Seminars were requested by MMS during this period.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%
Project Year 3-5:	85%

Task 17609: Advancing Marine Biotechnology: Use of OCS Oil Platforms as Sustainable Sources of Marine Natural Products

Principal Investigators: **Russell J. Schmitt**, Department of Ecology, Evolution and Marine Biology, **Jenifer Dugan**, Marine Science Institute, **Scott Hodges**, Department of Ecology, Evolution and Marine Biology, **Robert Jacobs**, Department of Ecology, Evolution and Marine Biology, **Mark Page**, Marine Science Institute, **Leslie Wilson**, Department of Molecular, Cellular and Developmental Biology, and **Stephen Gaines**, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara, CA 93106

Major Accomplishments, January 1, 2006 – March 31, 2006:

A paper on exotic invertebrate species inhabiting POCS offshore oil platforms was accepted for publication in Marine Ecology Progress Series.

Several manuscripts are being prepared for publication including: one on the results from recruitment studies, a second on the results from photoquadrat sampling of the platforms, a third on the genetic composition of *Bugula neritina* populations, and a fourth on the bioactive properties of a bryozoan from oil platforms in the Santa Barbara Channel. As the funding period for this grant has ended, a Draft Final Report is also in the process of being written and compiled using the manuscripts. We anticipate the submission of this Draft Final Report by late summer of 2006.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%

Task 17606: *Population Genetics of Surfgrass (Phyllospadix torreyi) for Use in Restoration*

Principal Investigators: **Scott Hodges**, Department of Ecology, Evolution and Marine Biology, **Douglas Bush**, Marine Science Institute, **Sally J. Holbrook**, Department of Ecology, Evolution and Marine Biology, and **Daniel Reed**, Marine Science Institute, University of California, Santa Barbara, CA 93106

Major Accomplishments, January 1, 2006 – March 31, 2006:

We continued to focus our efforts on writing the Draft Final Report and associated publications this past quarter. We plan to hire a CMI intern to re-process the data on the genetic structure of surfgrass populations from images of gels during Spring quarter, 2006. These data were lost as a result of a computer problem and are needed to complete the Final Report for this project.

Future Plans:

We will finalize and submit our Draft Final Report in the summer quarter.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%

Task 17605: *Population Dynamics and Biology of the California Sea Otter at the Southern End of its Range*

Principal Investigators: **James Estes**, Supervisory Wildlife Biologist, USGS-BRD; **Terrie Williams**, Professor of Biology, University of California, Santa Cruz; **Daniel Costa**, Professor of Biology, University of California, Santa Cruz; **Katherine Ralls**, Research Zoologist, Smithsonian Institution, and **Donald Siniff**, Professor of Ecology, Evolution & Behavior, University of Minnesota

Major Accomplishments, January 1, 2006 – March 31, 2006:

We are making the necessary changes to the Draft Final Report. We will submit the edited Final Report to MMS this quarter.

Future Plans:

We will submit the Final Report (with changes) for this project.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%
Project Year 3:	100%

Task 17604: Shoreline Inventory of Intertidal Resources of San Luis Obispo and Northern Santa Barbara Counties

Principal Investigator: Peter Raimondi, Department of Ecology and Evolutionary Biology, Center for Ocean Health, University of California, Santa Cruz, CA 95064

Major Accomplishments, January 1, 2006 – March 31, 2006:

Research for this study continued through this quarter. CMI funds supported Year 1 of this three year study. Years 2 and 3 of the research have been supported by direct funding from the Environmental Studies Program of the Minerals Management Service.

**** This project is no longer under CMI funding. Future reports will be submitted directly to MMS. Summarized results for selected species are available to the public at: www.marine.gov ****

Future Plans:

A comprehensive Draft Final Report covering all years of the project will be submitted at the end of the MMS funding cycle.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%

Task 17603: *Following Changes in the Abundance of Rocky Intertidal Populations in Orange County, California: Contributions to a Regional Monitoring Network Agreement*

Principal Investigators: **Stephen L. Murray**, Department of Biological Sciences, California State University, Fullerton, CA 92834-9480; **Russell J. Schmitt**, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara 93106-6150

Major Accomplishments, January 1, 2006 – March 31, 2006:

Research for this study continued through this quarter. CMI funds supported Year 1 of this three year study. Years 2 and 3 of the research have been supported by direct funding from the Environmental Studies Program of the Minerals Management Service.

**** This project is no longer under CMI funding. Future reports will be submitted directly to MMS. Summarized results for selected species are available to the public at: www.marine.gov ****

Future Plans:

A comprehensive Draft Final Report covering all years of the project will be submitted at the end of the MMS funding cycle.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%

Task 17602: *Inventory of Rocky Intertidal Resources in Southern Santa Barbara, Ventura and Los Angeles Counties*

Principal Investigator: Richard F. Ambrose, Department of Environmental Health Sciences and Environmental Science and Engineering Program, University of California, Los Angeles, CA 90095-1772

Lead Technician: Steven F. Lee, M.S. Dept. of Environmental Health Sciences and Environmental Science and Engineering Program, University of California, Los Angeles, CA 90095-1772

Major Accomplishments, January 1, 2006 – March 31, 2006:

Research for this study continued through this quarter. CMI funds supported Year 1 of this three year study. Years 2 and 3 of the research have been supported by direct funding from the Environmental Studies Program of the Minerals Management Service.

**** This project is no longer under CMI funding. Future reports will be submitted directly to MMS. Summarized results for selected species are available to the public at:*

*www.marine.gov ****

Future Plans:

A comprehensive Draft Final Report covering all years of the project will be submitted at the end of the MMS funding cycle.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%

Task 14181: *Population Trends and Trophic Dynamics in Pacific OCS Ecosystems: What Can Monitoring Data Tell Us?*

Principal Investigators: **Russell J. Schmitt**, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara, CA 93106 and **Andrew J. Brooks**, Coastal Research Center, Marine Science Institute, University of California, Santa Barbara, CA 93106

Major Accomplishments, January 1, 2006 – March 31, 2006:

We continued to focus our efforts on writing the Draft Final Report and associated publications this past quarter.

Publications and Presentations:

We are currently preparing two papers for publication as well as a Draft Final Report that will be submitted in the coming months.

List of Personnel Associated with the Project:

Principal Investigators:	Russell J. Schmitt Andrew J. Brooks
Graduate Student:	Sarah Lester
Staff Research Associate:	Keith Seydel

Future Plans:

Complete and submit publications and Draft Final Report.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%
Project Year 3:	100%
Project Year 4:	100%
Project Year 5:	100%



The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



The Minerals Management Service Mission

As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The **MMS Royalty Management Program** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.