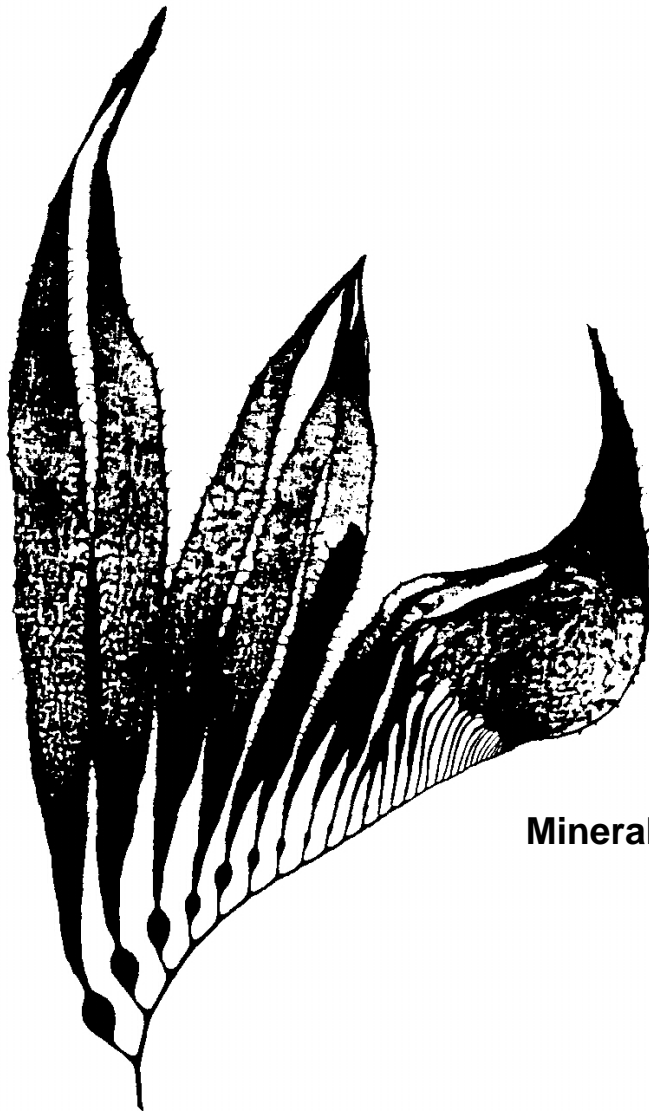


**COASTAL MARINE INSTITUTE
PROGRAM YEAR 12
QUARTERLY REPORT 1**

for the period

July 1, 2005 – September 30, 2005



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

October 19, 2005

**COASTAL MARINE INSTITUTE
PROGRAM YEAR 12**

QUARTERLY REPORT 1

for the period

July 1, 2005 - September 30, 2005

A Cooperative Agreement

between the

University of California

and the

Minerals Management Service

Russell J. Schmitt
Program Manager

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

October 19, 2005

TABLE OF CONTENTS

Coastal Marine Institute

Program Manager's Report	1
Summary of Research Progress:	
Population Trends and Trophic Dynamics in Pacific OCS Ecosystems: What Can Monitoring Data Tell Us?.....	3
Inventory of Rocky Intertidal Resources in Southern Santa Barbara, Ventura and Los Angeles Counties	4
Following Changes in the Abundance of Rocky Intertidal Populations in Orange County, California: Contributions to a Regional Monitoring Network Agreement	5
Shoreline Inventory of Intertidal Resources of San Luis Obispo and Northern Santa Barbara Counties	6
Population Dynamics and Biology of the California Sea Otter at the Southern End of its Range	7
Population Genetics of Surfgrass (<i>Phyllospadix torreyi</i>) for Use in Restoration.....	8
Advancing Marine Biotechnology: Use of OCS Oil Platforms as Sustainable Sources of Marine Natural Products	9
Joint UCSB-MMS Pacific OCS Student Internship and Trainee Program	11
Simulation of a Subsurface Oil Spill by a Hydrocarbon Seep (SSYS- HYS) & Oil Slicks in the Ocean: Predicting their Release Points Using the Natural Laboratory of the Santa Barbara Channel	12
Transport over the Inner-Shelf of the Santa Barbara Channel	13
Use of Biological Endpoints in Flatfish to Establish Sediment Quality Criteria for Polyaromatic Hydrocarbon Residue and Assess Remediation Strategies	14
Spatial and Temporal Variation in Recruitment to Rocky Shores: Relationship to Recovery Rates of Intertidal Communities	15
Weathering of Oil and Gas in the Coastal Marine Environment: Quantifying Rates of Microbial Metabolism	17
Observations of the Surface Circulation in the Eastern Santa Barbara Channel Using High Frequency Radar and Lagrangian Drifters	18
Ecological Performance and Tropic Links: Comparisons Among Platforms and Natural Reefs for Selected Fishes and Their Prey	20
Relative Importance of POCS oil platforms on the Population Dynamics of Two Reef Fishes in the Eastern Santa Barbara Channel	22

Program Manager's Report

for the period July 1, 2005 – September 30, 2005

This constitutes the quarterly report for the first 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, 10 projects are currently being conducted under the aegis of the Coastal Marine Institute.

MMS Actions Required:

- ◆ **Task 12390:** Hanemann & Krosnick, *Testing and calibrating the measurement of nonmarket values for oil spills via the contingent valuation method*, needs: report study #, MMS comments (sent 11/04);
- ◆ **Task 18213:** Schlenk, *Use of biological endpoints in flatfish to establish sediment quality criteria for polyaromatic hydrocarbon residue and assess remediation strategies*, needs: report study #, MMS comments (sent 11/04);
- ◆ **Task 17605:** Estes, *Population dynamics and biology of the California sea otter at the southern end of its range*, needs: report study #, MMS comments (sent 01/05);
- ◆ **Task 18212:** Ohlmann, *Transport over the inner shelf of the Santa Barbara Channel*, needs: report study #, MMS comments (sent 04/05).

Major Programmatic Progress and Actions during the Quarter:

- ◆ **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*. The Final Study Report has been completed and submitted to the Coastal Research Center. It will be submitted to MMS this quarter when the formatting is complete.
- ◆ **Task 14181:** *Population Trends and Trophic Dynamics in Pacific OCS Ecosystems: What Can Monitoring Data Tell Us?* has been completed. The Draft Final Report will be submitted during the next quarter;
- ◆ **Task 17606:** *Population Genetics of Surfgrass (*Phyllospadix torreyi*) for Use in Restoration* has been completed. The Draft Final Report will be submitted during the next quarter;
- ◆ **Task 17609:** *Advancing Marine Biotechnology: Use of OCS Oil Platforms as Sustainable Sources of Marine Natural Products* has been completed. The Draft Final Report will be submitted during the next quarter;
- ◆ **Task 18211:** *Oil Slicks in the Ocean: Predicting their Release Points Using the Natural Laboratory of the Santa Barbara Channel* has been completed. The Draft Final Report will be submitted during the next quarter;

- ◆ **Task 85338:** *Weathering of Oil and Gas in the Coastal Marine Environment: Quantifying Rates of Microbial Metabolism* has been completed. The Draft Final Report will be submitted during the next quarter;
- ◆ **Task 85340:** *Relative Importance of POCS Oil Platforms on the Population Dynamics of Two Reef Fishes in the Eastern Santa Barbara Channel* has been completed. The Draft Final Report will be submitted during the next quarter.
- ◆ **Task 13096:** *Utilization of Sandy Beaches by Shorebirds: Relationships to Population Characteristics of Macrofauna Prey Species and Beach Morphodynamics*, has been completed. The Final Study Report will be submitted to MMS during the next quarter;

FINAL REPORTS COMPLETED

- ◆ **Task 15115:** *Effects of Temporal and Spatial Separation of Samples on Estimation of Impacts* has been completed and the Final Study Report was submitted to MMS.

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, July 1, 2005 – September 30, 2005:

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 all personnel associated with the project:

Principal Investigators: Dr. Russell J. Schmitt
Dr. Andrew J. Brooks
Graduate student: Sarah Lester
Staff researcher 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%

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, July 1, 2005 – September 30, 2005:

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 three years of the project will be submitted at the end of the MMS funding cycle (three years).

Problems encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Year 1	100%
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 Investigator: Stephen L. Murray, Department of Biological Sciences, California State University, Fullerton, CA 92834-9480

Major Accomplishments, July 1, 2005 – September 30, 2005:

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 three years of the project will be submitted at the end of the MMS funding cycle (three years).

Problems encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Year 1	100%
Year 2	100%

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

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

Major Accomplishments, July 1, 2005 – September 30, 2005:

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 three years of the project will be submitted at the end of the MMS funding cycle (three years).

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; **Donald Siniff**, Professor of Ecology, Evolution & Behavior, University of Minnesota.

Major Accomplishments, July 1, 2005 – September 30, 2005:

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 as well as reporting comments are required.

Estimated Percentage of Budget Expended:

Project Year 1	100%
Project Year 2	100%
Project Year 3	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, July 1, 2005 – September 30, 2005:

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 next quarter.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

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

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, July 1, 2005 – September 30, 2005:

ECOLOGY

During this quarter our analyses and interpretation of data on the association of geographic and environmental factors with recruitment patterns observed at offshore oil platforms in the Santa Barbara Channel continued. The results of these analyses are being incorporated into a manuscript for publication. We continued data analyses of our results from photoquadrat sampling of invertebrate communities on the platforms. This component of the study will form the basis for a second manuscript for publication.

Future Plans:

Two manuscripts are being prepared for publication, one on the results from recruitment studies and a second on the results from photoquadrat sampling of the platforms. As the funding period for this grant has ended, a Draft final study report is also in the process of being written and compiled from parts of the manuscripts.

PHARMACOLOGY

Currently work is being done to build large stock of red compound in order to perform C13 NMR to further elucidate molecular structure. Further experimentation to corroborate the presence of sulfur in the molecule is also being performed along with stabilization of the previously described protein complex.

Future Plans:

A Draft final study report will be written and submitted to MMS upon completion of the data analysis.

GENETICS

In the previous quarter, we filled the open position in the laboratory, re-amplified and sequenced the few mtDNA sequences that were difficult to interpret and began amplifying and sequencing DNA from the bacterial symbiont from members of each major *B. neritina* mtDNA clade.

Future Plans:

A Draft final study report will be written and submitted to MMS upon completion of the data analysis.

Problems Encountered:

None

MMS Action Required:

A no-cost extension was received for this project through September 30th, 2005. No action is currently 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, July 1, 2005 – September 30, 2005:

A total of six interns worked on MMS and MMS/CMI projects during Winter '05. Kristina Estudillo, mentored by Ms. Dunaway of MMS, continued developing educational curricula comparing alternative energy sources with oil and gas for K-12 students. Jennifer Lape, mentored by Drs. Dugan and R. Schmitt of UCSB, collected, scanned and compiled scientific reprints produced by research projects funded by the CMI and SCEI programs for production of CD-ROMs containing all of these documents for MMS and assisted with rocky intertidal monitoring by MARINE. Corinne Kane, mentored by Drs. Schmitt and Dugan, scanned, produced pdf files and compiled all existing final reports from the SCEI and CMI programs for production of additional CD-ROMs containing final reports from each of these programs. Jennifer Klaib, mentored by Dr. Engle of UCSB developed and maintained the web-accessible MARINE database. Funding from the UCSB Shoreline Preservation Fund was used to support two undergraduate student interns who assisted with CMI/MMS research projects during this period. Peter White conducted nearshore studies of surface currents using small drifters under the supervision of Dr. Ohlmann of UCSB. Dana Nakase, mentored by Drs. Page and Dugan of UCSB, analysed population structure and composition of potential fish prey from offshore oil platforms and natural reefs. We are working with Fred Piltz and other MMS personnel to arrange additional internship opportunities for MMS and MMS/CMI projects during Spring and Summer 2005.

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

Future Plans:

Work will proceed as proposed.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%
Project Year 3:	59%

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, July 1, 2005 – September 30, 2005:

During this reporting period, a Draft Final Report was submitted to the Coastal Marine Institute. The Draft Final Report is being formatted for publication and will be submitted to MMS early next quarter.

Problems Encountered:

None

MMS Action Required:

Upon submittal to MMS, a report study number and comments will be required.

Estimated Percentage of Budget Expended:

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

Task 18212: *Transport over the Inner-Shelf of the Santa Barbara Channel*

Principal Investigator: **Carter Ohlmann**, Institute of Computational Earth System Science,
University of California, Santa Barbara, California 93106

Major Accomplishments, July 1, 2005 – September 30, 2005:

During this reporting period, a Draft Final Report was submitted to the Minerals Management Service.

Problems Encountered:

None

MMS Action Required:

A report study number and comments on the Draft report are required from MMS.

Estimated Percentage of Budget Expended:

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

Task 18213: *Use of Biological Endpoints in Flatfish to Establish Sediment Quality Criteria for Polycyclic Aromatic Hydrocarbon Residues and Assess Remediation Strategies*

Principal Investigator: Daniel Schlenk, Department of Environmental Sciences, University of California, Riverside, Scott Steinert CSC, Marine Sciences Department

Major Accomplishments, July 1, 2005 – September 30, 2005:

Analysis and writing culminated in a Draft Final Report, which was submitted to the Minerals Management Service for review during November 2004. We are awaiting MMS comments on the Draft Final Report.

Future Plans:

Revise the Draft Final report, if necessary, and submit Final Report.

Problems Encountered:

None

MMS Action Required:

A report study number needs to be issued as well as comments on the Draft Final Report.

Estimated Percentage of Budget Expended:

Project Year 1	100%
Project Year 2	100%

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

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

Major Accomplishments, July 1, 2005 – September 30, 2005:

Recruitment:

Safety-walk plates and tuffies were exchanged at Point Sierra Nevada, Stairs and Point Fermin in July, August and September. *Silvetia* and *Endocladia* collectors were exchanged in June at all three sites. Algae collectors and natural recruitment were sampled monthly.

Recovery Plot Sampling:

Recovery plots were sampled at all three sites in June 2005. 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. To date, barnacle plates have been sampled up until October 2004, and tuffies have been sampled until February 2004.

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 four months.

List of all personnel associated with the project:

Principal Investigators:	Richard Ambrose and Peter Raimondi
Technician/Graduate Student:	Tish Conway-Cranos
Lab Volunteers:	Christina Leard and Ashley Cleland
Field Volunteers:	Kelley Higgason (UCSC), Ben Perlman (UCSC), 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), Haven Livingston (UCSC), Mark Readdie (UCSB), Melissa Foley (UCSC), Tom Adam (UCSB), Aimee Bullard (CSU Fullerton), Eric

Miller, Caroline Engel (UCSC), Melissa Redfield (UCSC),
and Nora Grant (UCSC).

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	100%
Project Year 3:	~ 75%

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, July 1, 2005 – September 30, 2005:

During this reporting period, we continued our analysis of the data. We are now in the process of compiling the Draft final study report and the Draft technical summary for this project.

Future plans:

We will submit the Draft final report and technical summaries in the next reporting period.

Problems Encountered:

None

MMS Action Required:

None

List of all 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:	~98%

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, July 1, 2005 – September 30, 2005:

During the first quarter we made substantial improvements to our HF radar site at the Summerland Sanitation District Plant in Summerland, CA. The main improvement was installation of a shed to house the radar electronics and computer system. The shed provides an extra layer of weather proofing to increase reliability of the site. Antenna patterns were also measured at all four sites during the third quarter.

A paper entitled "Do oil and gas platforms off California reduce recruitment of bocaccio (*Sebastes paucispinis*) to natural habitat? An analysis based on trajectories derived from high frequency radar" by Brian M. Emery, Libe Washburn, Mary Nishimoto, Milton Love, and J. Carter Ohlmann has been accepted for publication by Fisheries Bulletin, a refereed journal in fisheries science. A major conclusion of the paper is that the answer to the question posed in the paper's title is probably "no", at least for platform Irene located near Pt. Arguello, CA. Our results indicate that Platform Irene probably does not drain bocaccio larvae from natural reefs in the region.

We continued analysis of the large oceanographic and fisheries data sets collected during an MMS-funded experiment running May through August 2004 (MMS program manager: Ann Bull). This research was carried out in collaboration with Dr. Milton Love and Mary M. Nishimoto of the Marine Science Institute at UCSB. It is an important part of Ms. Nishimoto's dissertation research. A main goal of this research is to understand oceanographic factors controlling settlement of pelagic juvenile rockfishes (e.g. bocaccio) on oil production platforms. We hypothesize that oil production platforms are important artificial habitat for these fishes.

A manuscript describing some results from our MMS-funded research was recently published in Geophysical Research Letters a peer-reviewed journal (Bassin et al., GRL, VOL. 32, L12604, doi:10.1029/2005GL023017, 2005). This article was selected by the editors of GRL as a "highlight feature". A principal result is the discovery of small, near-shore eddies which can transport offshore waters onto the inner shelf (water depths of 10-30 m). An important consequence of these eddies is that they can rapidly transport particles, nutrients, and pollutants such as oil to nearshore waters and possibly to the beach.

Personnel associated with the project:

Libe Washburn – principal investigator
Brian Emery – programmer analyst
David Salazar – staff research associate
Mary Nishimoto – graduate student
Christopher Melton – new graduate student

Justin Pearson – undergraduate researcher
Joshua Kleiner – undergraduate researcher

Future plans:

The performance of the HF radar installation at Summerland, CA will be evaluated further. Data analysis of the large 2004 data set will continue. Efforts to improve HF radar processing software will continue.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	96%

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

Principal Investigator: **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, July 1, 2005 – September 30, 2005:

During the reporting period, we finished processing samples of potential food items of painted greenling taken monthly from Naples and Mohawk reefs and Platforms Holly and Houchin. Data taken on each sample included taxonomic composition, number of individuals within each taxon, dry weight and ash free dry weight of potential prey. We are preparing a photo atlas of the amphipod taxa found within these samples. We also continued to enter and analyze the data taken from each sample.

Painted greenling collections were made at two times (August-September 2003, March-April 2004) at the same locations in which potential prey was sampled. Data taken on each fish included length, blotted wet weight, and liver weight. The stomachs were removed and dissected to determine prey items consumed. Otoliths were also removed. These structures may provide useful information on fish growth at each site. Using these fish collections, we have estimated mean condition factor (K) for each site to test whether there were differences among regions (east or mid Santa Barbara Channel) and habitat types (reefs and platforms), and to determine if there was a relationship between K and invertebrate prey density. Preliminary analysis suggests variation in K among locations that may be related to the density of amphipod prey. We have finished processing fish stomach contents; amphipods comprise the vast majority of prey items consumed.

Future plans:

We are exploring the possibility of having the painted greenling otoliths read to provide a comparative estimate of daily growth rate across sites. Analysis of the otoliths will depend on the availability of funding for this work. We will continue data analysis and anticipate preparing two manuscripts for publication. We are also currently working on the Draft Final Study Report and Draft Technical Summary.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1: 100%

Project Year 2: 100 %

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, July 1, 2005 – September 30, 2005:

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

Future plans:

Submit a Draft Final Study Report.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1:	100%
Project Year 2:	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.