

**SOUTHERN CALIFORNIA EDUCATIONAL INITIATIVE
PROGRAM YEAR 14
QUARTERLY REPORT 1**

for the period

July 1, 2002 – September 30, 2002



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

October 29, 2002

**SOUTHERN CALIFORNIA EDUCATIONAL INITIATIVE
PROGRAM YEAR 14
QUARTERLY REPORT 1**

for the period

July 1, 2002 – September 30, 2002

A Cooperative Program
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

October 29, 2002

Program Manager's Report

for the period July 1, 2002 – September 30, 2002

This constitutes the quarterly report for the first quarter of Program Year 14 of the Southern California Educational Initiative, a cooperative research agreement between the Minerals Management Service, the state of California and the University of California.

As of this quarter, 3 projects currently are being conducted under the aegis of the Southern California Educational Initiative.

Actions Pending MMS Approval:

- We are waiting for MMS comments on the Draft Final Report for *Mitigating the Impact of Offshore Oil Development*, Woolley and Lima, PIs;
- We require approval of a no-cost extension for this contract to June 2003, to finalize the remaining projects;
- We are waiting for comments on the Draft Final Report for project *A Design for a Time Series Study of a NIMBY Response*, Smith PI.

Major programmatic progress and actions during the quarter are summarized below for the period of July 1 – September 30, 2002.

- The Final Report for project *Ecological Effects of Chronic Exposure to Produced Water: A Field Test* and *Environmental Effects of Produced Water: A BACIP Field Assessment*, Osenberg, Holbrook, Schmitt and Carr, PIs, will be submitted to MMS next quarter in hard copy and PDF formats;
- The Final Report for project *Effects of Produced Water on Demographic Rates and Environmental Recovery Following Cessation of a Produced Water Discharge*, Schmitt and Osenberg, PIs, will be submitted to MMS next quarter in hard copy and PDF formats.

Detecting Ecological Impacts: Effects of Taxonomic Aggregation in the Before-After/Control-Impact Paired Series Design

Principal Investigators: **Sally Holbrook**, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara, CA 93106, **Mark H. Carr**, Department of Biology, University of California, Santa Cruz, CA 95064, **Craig W. Osenberg**, Department of Zoology, University of Florida, Gainesville, FL 32611-8525.

Major Accomplishments, July 1, 2002 – September 30, 2002

- We did not make any progress on data analyses.
- We did not make any progress in archiving samples at the LA County Museum.

Future plans:

- Osenberg will conduct data analyses using the Gaviota, Carpinteria, San Onofre data sets as time permits. Following analyses, Osenberg and Carr will initiate the preparation of the final report. As indicated in the last several quarterly reports, the project has not yet been finished due to unforeseen delays in the taxonomic identifications. Carr and Holbrook will continue in their efforts to have all samples archived at the Los Angeles County Museum.

Estimated Percentage of Budget Expended:

All funds were expended previously. Due to delays in the species-level identifications, all analyses have had to be done following the end date of the project.

Effects of an Oil Spill on Multispecies Interactions that Structure Intertidal Communities

Principal Investigator: Peter Raimondi, Department of Biology, University of California, Santa Cruz, California 95460.

Major Accomplishments, July 1, 2002 – September 30, 2002

We finalizing the final report and final technical summary, it will be submitted by the end of the quarter.

Estimated Percentage of Budget Expended:

Project Year 1 100%

Project Year 2 100%

Early Development of Fouling Communities on Offshore Oil Platforms

Principal Investigators: H. Mark Page, Jenifer Dugan, and Jason Bram, Marine Science Institute, University of California, Santa Barbara, California 93106

Major Accomplishments, July 1, 2002 – September 30, 2002

Progress to Date

We are continuing to test whether selected early successional species inhibit, enhance, or have no effect, on the composition and rate of development of the invertebrate assemblage using field experiments at Platform Houchin. We are manipulating the abundance of three invertebrate taxa (barnacles, encrusting bryozoans, and colonial tunicates) that are important as early colonizers on ceramic tiles placed on Platform Houchin at three depths (6 m, 12 m, and 18 m). Each treatment involves the monthly removal of one taxon from the tile. These taxa were chosen based on their presence early in the successional sequences observed in 1999–2001. Preliminary observations suggest that encrusting bryozoans and colonial tunicates compete for primary space; encrusting bryozoans occur at a high % cover on tiles when colonial tunicates are removed while colonial tunicates occur at a high % cover when encrusting bryozoans are removed. Barnacles have occurred in low cover on all tiles.

During the reporting period, we continued the statistical analysis of our results on species composition, biomass and percent cover of invertebrates that colonized tiles (15x15 cm) exposed for various time intervals (2, 4, 6, 12, 24 months) at depths of 6, 12, and 18 m at Platform Houchin. We also continued analyses of results on the percent cover and biomass of invertebrates that colonized experimentally scraped 20 cm x 20 cm quadrats on conductor pipes and plastic mesh tuffys at depths of 6, 12, and 18 m at Platform Houchin from April 1999 to April 2001.

Percent cover of selected taxa on the tiles varied significantly over time, among depths, among dates of initial exposure of the surface, and between the two years of the study, with the greatest temporal effects evident at the 6 m depth. The cover of different invertebrate taxa over time was strongly influenced by depth and year. For example, barnacles accounted for 34% cover on the tiles after 12 months of exposure at the 6 m depth in 1999-2000. At the 12 and 18 m depths for this same treatment, barnacles occurred at 9% and 2% covers, respectively. In 2000-2001, the cover of barnacles was 66% after 12 months of exposure at 6 m, and at the 12 and 18 m depths, the cover of barnacles was 27% and 25%, respectively.

Biomass on both the experimental surfaces and the surface of the platform itself increased significantly over time at all depths, and varied among depths, with a greater rate of biomass accumulation at the 6 m depth than at the two deeper depths. There was also a greater rate of biomass accumulation in 2000-2001 at all depths on all surfaces. In addition, there was significantly greater biomass accumulation on the tiles than on the scraped platform surfaces.

A master's thesis and a manuscript on these results are in preparation.

Upcoming work

We will continue to monitor the field experiments and analyze data from the vacuum samples of scraped plots and the tiles. Hypotheses concerning factors influencing community development will be examined using additional statistical analyses. The Introduction, Results and Discussion sections will be written for the master's thesis and manuscript.

Problems Encountered:

None

MMS Action Required:

None

Estimated Percentage of Budget Expended:

Project Year 1	100%
Project Year 2	100%
Project Year 3	70%