

SOUTHERN CALIFORNIA EDUCATIONAL INITIATIVE

PROGRAM YEAR 14

QUARTERLY REPORT 3

for the period

January 1, 2003 – March 31, 2003



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

April 2, 2003

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Russell J. Schmitt
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April 2, 2003

Program Manager's Report

for the period January 1, 2003 – March 31, 2003

This constitutes the quarterly report for the third 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, 2 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 the project *Using Before-After-Control Impact in Environmental Assessment: Purpose, Theoretical Basis, and Practical Problems*, Stewart-Oaten, PI.
- We are awaiting comments from MMS on the Draft Final Report for the project *Variability in the Accumulation and Persistence of Tar in Four Intertidal Communities Along the Central and Southern California Coast*, Raimondi, PI.

Major programmatic progress and actions during the quarter are summarized below for the period of January 1 – March 31, 2003.

- The OCS Final Study Report 1999-020, *Characterization and Fate of Produced Water Discharged in Shallow Waters*, was submitted to MMS this quarter in hard copy and PDF formats. This report comprised results from the following studies: (1) *Characterization and Fate of Produced Water Discharged in Shallow Waters* and (2) *Characterization of Metal Constituent Patterns at a Produced Water Site*, Flegal, PI;
- The OCS Final Study Report 1999-061, *Ecological Responses to, and Recovery from, Produced Water Discharge: Application of a BACIPS Assessment Design*, was submitted to MMS this quarter in hard copy and PDF formats. This report comprised the results from the following projects: (1) *Effects of Produced Water on Demographic Rates*, (2) *Spatial Scale of Produced Water Impacts as Indicated by Plume Dynamics and Biological Field Assays*, and (3) *Environmental Recovery Following Cessation of a Produced Water Discharge*, Schmitt and Osenberg, PIs;
- The OCS Final Report 1999-062, *Long-term Monitoring of Biological Parameters at a Proposed Produced Water Discharge: Application of a BACIPS Assessment Design*, was submitted to MMS this quarter in hard copy and PDF formats. This report comprised the results from the following projects: (1) *Ecological Effects of Chronic Exposure to Produced Water: A Field Test*, Osenberg, Holbrook, & Schmitt, PIs, and (2) *Environmental Effects of Produced Water: A BACIP Field Assessment*, Carr, Holbrook, & Osenberg, PIs;
- The project *A Design for a Time Series Study of a NIMBY Response*, Smith, PI, was completed and the OCS Final Study Report 2002-051 was submitted to MMS in hard copy and PDF formats;

- The project *Mitigating the Impact of Offshore Oil Development*, Woolley and Lima, PIs, was completed and the OCS Final Study Report 2003-014 was submitted to MMS in hard copy and PDF formats;
- The project *Risk Analysis*, Lick, PI, was completed and the OCS Final Study Report 2003-015 was submitted to MMS in hard copy and PDF formats;
- The project *Potential biogenic habitat alteration by OCS Activities: Adverse effects to early life-stages of giant kelp from chronic disturbance*, Reed, Ebeling, and Neushul, PIs, was completed and the OCS Final Study Report 2003-017 was submitted to MMS in hard copy and PDF formats;
- The Draft Final Report, *Using Before-After-Control Impact in Environmental Assessment: Purpose, Theoretical Basis, and Practical Problems*, was completed and submitted to MMS for review. This report comprised the results from the following projects: (1) *Environmental Assessment: Statistical Description of Variable Effects on Fluctuating Populations*, and (2) *Adding Biology to BACI: Exploring the Use of Functional Groups, Trophic Relationships and Multiple, Ecologically Similar Comparison Sites in Choosing Models and Estimating Effects Impacts Analysis*, Stewart-Oaten, PI;
- The project, *Effects of an Oil Spill on Multispecies Interactions that Structure Intertidal Communities*, Raimondi, PI, was completed and the Draft Final Report (*Variability in the Accumulation and Persistence of Tar in Four Intertidal Communities along the Central and Southern California Coast*) was submitted to MMS for review.

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, January 1, 2003 – March 31, 2003

- We continue to contribute to the application of BACIPS methodology in other contexts. BACIPS and its role in the assessment of Marine Protected Areas and artificial reefs (such as the Rigs-to-Reefs issues) were highlighted by Carr and Osenberg in several public presentations and invited talks, including presentations at UC Davis, Bodega Marine Laboratory, and at the 4th Mote International Symposium in Fisheries Ecology. Insights from these talks benefited from MMS-sponsored research on the BACIPS design.
- 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 (using infaunal densities) and Carr (summarizing size-structure) 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. The project has not yet been finished due to unforeseen delays in the taxonomic identifications. This has forced us to complete our data analyses after the end date of the original award. 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.

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, January 1, 2003 – March 31, 2003

During the reporting period, we continued field experiments designed to test whether selected early successional species inhibit, enhance, or have no effect, on the composition and rate of development of the invertebrate assemblage 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). These taxa were chosen based on their presence early in the successional sequences observed in 1999–2001. Each treatment involves the monthly removal of one taxon from the tiles. Observations to date 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 continued to occur in low cover on all tiles.

The statistical analysis of our results on density and size of barnacles 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 continued through the reporting period.

During the reporting period, an extensive literature review was undertaken. Figures for a manuscript and master's thesis are in preparation. A master's thesis and a manuscript on results from this study 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. A master's thesis and manuscript for publication based on the results will be written.

Problems Encountered: None

MMS Action Required: None

Estimated Percentage of Budget Expended:

Project Year 1	100%
Project Year 2	100%
Project Year 3	87%