

EVOS ANNUAL PROJECT REPORT

Project Number: NFFS5000-10-06795/ Contract No. AB133F10CN0066

Project Title: Re-assessment of Bivalve Recovery on Treated Mixed-Soft Beaches in Prince William Sound (EVOS Project Number 10100574)

PI Name: Dennis C. Lees

Time Period Covered by Report: 3/4/2010 through 9/30/2010

Date of Report: 10/8/2010

1. **Work Performed:** *Summarize work performed during the reporting period, including any results available to date and their relationship to the original project objectives. Describe and explain any deviation from the original project objectives, procedural or statistical methods, study area, or schedule. Also describe any known problems or unusual developments, and whether and how they have been or can be overcome. Include any other significant information pertinent to the project.*

This project was funded during the 2nd quarter of the fiscal year. The remainder of that quarter involved completion of subcontracting and scheduling. During the 3rd quarter, the combined multi-disciplinary field team arrived in Cordova on 6/8/2010, mobilized, and departed Cordova on 6/9/2010. Although the contract called for sampling the 36 non-NOAA locations sampled in 2002, we sampled at 39 sampling locations from 6/10/2010 to 6/18/2010; the extra locations sampled were three of the NOAA sites sampled in 2002.

Other work performed during the 3rd quarter included completion of lab analyses for sediment grain size and organics. Lab data for these analyses have been received and preliminary statistical analysis has been initiated. In addition, sorting has been completed for ~69 percent of the core samples. Sorting of these samples will be completed and the core and excavation samples will be analyzed during FY11.

Biologically, the general impression obtained in the field and from cursory looks during quality assurance examination on the core samples is that clam densities are reduced from 2002. Moreover, it appears the infaunal assemblages generally are less robust. However, a quantitative comparison of 2002 and 2010 clam densities and an assessment of the differences in densities between the washed and unwashed sites will not be available until the core and excavation samples are analyzed. This will be completed during FY11.

The geological/geomorphological component of the field program appears to be highly successful and promising. Logistical and analytical elements were shuffled to allow the geological/ geomorphological field team to sample for the entire period rather than the 5 days originally proposed. This provided far better coverage of the sampling area and examination of a much broader range of sediment types and organization regimes. The combination of classical geological methods and the innovative photogrammetric approach used to assess organization and texture of the coarse-grained sediments appears to reveal helpful insights into the structure

and organization of the coarse sediments that characterize the habitats within which the clams are found.

In general, the geological/geomorphological patterns appear consistent with those observed in 2002. The sediments, strongly dominated by cobble and pebbles, are quite heterogeneous. An additional pattern demonstrated by these data as a consequence of the new vertically stratified sampling strategy is that surficial sediments are coarser than deeper sediments, *i.e.*, largest quantities of coarse particles are observed in the upper few centimeters of the sediment column and largest quantities of silts and clays are found at deeper levels.

2. **Future Work:** *Summarize work to be performed during the upcoming year, if changed from the original proposal. Describe any proposed changes in objectives, procedural or statistical methods, study area, or schedule. [PLEASE NOTE: Significant changes in a project's objectives, methods, schedule, or budget require submittal of a new proposal that will be subject to the standard process of proposal submittal, technical review, and Trustee Council approval.]*

Neither the scope of work nor the schedule has changed from the original proposal. The proposed activities for FY11 are listed below:

Continue and complete analysis of bivalve and sediment samples, commence photogrammetric analysis, and complete statistical analyses of these data. The latter will involve an attempt to develop an "armoring" metric based on the sediment and photogrammetric data.

We see no reason to suspect any problems accomplishing the milestones listed in the contract.

The tentative observation that the infaunal assemblages in the samples from 2010 generally appear impoverished relative to 2002 assemblages may be important in the interpretation of the results for the hardshell clams. Depending on what the quantitative comparison of results for hardshell clams and a qualitative comparison of the remainder of the infaunal assemblages from 2002 and 2010 shows, the PI may submit a proposal for supplemental funding to work up the remaining infaunal elements from 2002 and 2010. The PI is still in possession of the hardshell clam and other infaunal samples from 2002.

3. **Coordination/Collaboration:** *Describe efforts undertaken during the reporting period to achieve the coordination and collaboration provisions of the proposal, if applicable.*

Not applicable.

4. **Community Involvement/TEK & Resource Management Applications:** *Describe efforts undertaken during the reporting period to achieve the community involvement/TEK and resource management application provisions of the proposal, if applicable.*

An objective listed as a milestone was to provide presentations on the findings of the 2002 clam study to the citizens of Cordova and the villages of Tatitlek and Chenega. The principal investigator made three presentations to citizens of Cordova regarding the findings from the 2002 study and had an extended discussion with a representative of Chenega on that work.

However, due to fisheries openings and a variety of construction projects in the villages, we were not able to schedule presentations to the general citizenry of either Chenega or Tatitlek.

5. **Information Transfer:** *List (a) publications produced during the reporting period, (b) conference and workshop presentations and attendance during the reporting period, and (c) data and/or information products developed during the reporting period. [PLEASE NOTE: Lack of compliance with the Trustee Council's data policy and/or the project's data management plan will result in withholding of additional project funds, cancellation of the project, or denial of funding for future projects.]*

Not applicable at this time because all analyses are still in progress.

However, the PI will be presenting a paper based on the 2002 study (Comparison of Mixed-Soft and Traditional Homogeneous Sediments – Are These Sediments Characterized By Distinctively Different Paradigms?) at the annual meetings of the Geological Society of America in Denver in November 2010. This presentation is a final step in completing a manuscript on this topic for submittal to the Journal of Coastal Research during this quarter.

6. **Budget:** *Explain any differences and/or problems between actual and budgeted expenditures, including any substantial changes in the allocation of funds among line items on the budget form. Also provide any new information regarding matching funds or funds from non-EVOS sources for the project. [PLEASE NOTE: Any request for an increased or supplemental budget must be submitted as a new proposal that will be subject to the standard process of proposal submittal, technical review, and Trustee Council approval.]*

Due to modifications in arrangements for logistics and sample analyses, we do not anticipate that analysis of the samples from three extra (NOAA) sites (>8% increase in number of samples) will result in a budgetary issue.

Report Prepared By: Dennis C. Lees
Project Web Site Address: None

SUBMIT ANNUAL REPORTS ELECTRONICALLY TO phil_mundy@oilspill.state.ak.us. THE REPORTS WILL BE POSTED ON THE TRUSTEE COUNCIL'S WEB SITE AND SHOULD ALSO BE POSTED ON THE PI'S WEB SITE. The subject line of the e-mail transmitting the report must include the project number and the words "annual report" (e.g., "035620 Annual Report"). Electronic reports must be submitted either as an Acrobat Portable Document Format (PDF) file or word processing document (Microsoft Word 2000 for Windows or lower or WordPerfect 9.0 or lower) with any figures and tables imbedded. Acrobat PDF 4.0 or above file format must be used, preferably in 'formatted text with graphics' (called "PDF normal" under Acrobat PDF 4.0) format. Minimally, "PDF searchable image" (called "PDF original image with hidden text" under Acrobat PDF 4.0) may be used if pre-approved by the Trustee Council Office. In either case, the PDF file must not be secured or locked from future editing, or contain a digital signature from the principal investigator.