

EVOS ANNUAL PROJECT REPORT

All recipients of funds from the *Exxon Valdez* Oil Spill Trustee Council must submit an annual project report in the following format by September 1 of each fiscal year for which project funding is received, with the exception of the final funding year in which a final report must be submitted. Satisfactory review of the annual report is necessary for continuation of multi-year projects. Failure to submit an annual report by September 1 of each year, or unsatisfactory review of an annual report, will result in withholding of additional project funds and may result in cancellation of the project or denial of funding for future projects.

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.

Project Number: 030654

Project Title: Surface nutrients over the shelf and basin in summer: bottom-up control of ecosystem diversity.

PI Name: Phyllis J. Stabeno and Calvin W. Mordy

Time Period Covered by Report: October 1, 2002 – September 30, 2003

Date of Report: September 25, 2003

1. **Work Performed:** An underway nitrate monitor was installed on the NOAA ship *Miller Freeman* during the *NMFS-OCC / GLOBEC Juvenile Salmon Survey* (cruise number MF-03-10) which was conducted from July 18 - August 9, 2003. The main goal of the cruise was to determine the distribution of juvenile salmon in the ocean as they begin migrating from their natal streams to the deep ocean. The data will be used to determine reproductive life history, age/sex structure of the population, and basic demographic information. Underway temperature, salinity and fluorescence data were measured as part Juvenile Salmon Survey, and GEM funded the addition of an underway nitrate monitor. The major objectives of GEM underway nitrate monitoring were to examine nutrient supply to nearshore waters, explore bottom-up control of plankton and fish distributions along the shelf and in the central Gulf of Alaska (GOA), and to parameterize chemical, biological and physical processes influencing these distributions.

Uncontaminated seawater was pumped from the ship's sea-chest (where temperature readings were made) to the fluorometer, thermosalinigraph, and an EnviroTech AutoLab nitrate monitor. Nitrate measurements were made at 20 minute intervals, and included the analysis of the On-Board-Standard (OBS) followed by 4 natural samples. Natural calibration samples were collected four times per day from the exit stream of the nutrient sampler, and frozen for later analysis at the Pacific Marine Environmental Laboratory.

All of the measurable project tasks scheduled for the first year have been completed:

- Stabeno and Mordy attended the annual EVOS workshop in January, 2003

- The underway nitrate monitor was prepared and installed on the ship in July, 2003
- Underway measurements were completed on the cruise, and the frozen samples are awaiting analysis.

There were several deviations from the proposed project; the most significant was the use of the NOAA ship *Miller Freeman* instead of the *F/V Great Pacific*. The change in vessels was necessitated by engine failure on the *Great Pacific*. Fortunately, the *Miller Freeman* was available for our use. We had proposed to depart from Dutch Harbor, sail directly to Yakutat across the central GOA, and then conduct 10 cross-shelf transects. Because the *Miller Freeman* departed from Kodiak, the deadhead from Dutch Harbor to Yakutat was eliminated. As a result, no data was collected in the central GOA. We did complete all of the proposed cross-shelf transects, and as a bonus, the ship received permission to venture north into Glacier Bay before making harbor at Juneau.

2. **Future Work:** Future work will progress as put forth in the proposal. The next project task is the analysis of frozen samples, and this will begin in October after the autoanalyzer returns from the fall FOCI cruise. These results will be summarized at the annual GEM meeting. In 2004, we anticipate returning to the *F/V Great Pacific* for the final *NMFS-OCC / GLOBEC Juvenile Salmon Survey Cruise*.

3. **Coordination/Collaboration:** Stabeno and Mordy are PIs on several collaborative projects. This cruise overlapped the GLOBEC summer process cruise (July 20 – August 11) and Mordy is the nutrient PI for that program. All nutrient data from that project will be available for this study. In addition, data from GLOBEC and FOCI moorings (including a surface nitrate mooring off of Seward which was recovered in September) will be available to this project.

4. **Community Involvement/TEK & Resource Management Applications:** The primary effort for community involvement was the chartering of a local fishing vessel for this oceanographic expedition. This goal was forfeited after the *F/V Great Pacific* experienced engine failure.

5. **Information Transfer:** As the data has only recently been collected, no information transfer has occurred, nor was any anticipated at this time.

6. **Budget:** Two significant changes occurred in the budget. D. Wisegarver was not available for work on this project, and we incurred unexpected costs for instrument troubleshooting and repairs (2 months salary for Mordy, and approximately \$3,000). Savings originating from the removal of D. Wisegarver from the budget were balanced by the unanticipated repair costs. Hence, the program was carried out with the funds allocated.

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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.