

## 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:** G-070769

**Project Title:** Using otolith chemistry to discriminate Pacific herring stocks in Alaska (Note: This is a continuation of 050769: Temporal stability of fatty acids used to discriminate Pacific herring in Alaska)

**PI Name(s):** Ted Otis (ADF&G-CF, Homer) Ron Heintz (NMFS-Auke Bay Lab), and Dr. Nathan Bickford (UAF)

**Time Period Covered by Report:** September 1, 2006- September 1, 2007

**Date of Report:** August 31, 2007

### 1. Summary of Work Performed:

As was declared in our 2006 annual report, our efforts to secure samples from spawning Pacific herring (*Clupea pallasii*) in Prince William Sound (PWS) in 2005-2006 were hindered by their very low abundance and relatively small and brief "spot" spawning events. Fortunately, the successful collection of herring samples from other targeted spawning stocks throughout Alaska will enable us to meet Project 050769's primary objective to evaluate the temporal stability of fatty acid signatures used to discriminate Pacific herring in Alaska. Although no further collection efforts were originally planned for 2007, given the importance of PWS herring to the funding agency and PWS user groups, we made one last attempt to collect samples from spawning herring in PWS in Spring 2007.

A total of 146 Pacific herring hearts were collected from two locations during Spring 2007. Sampling efforts during this reporting period began March 24 with a small spawning event at Gravina Point in PWS and ended April 4 in St. Mathews Bay, PWS. Approximately 75 fish were collected at each site. Along with the heart tissues needed for Project 050769 and otoliths needed for Project 07069, we also collected and preserved fin clips from all fish sampled in 2007 so future genetic analyses could potentially be performed to corroborate the results of this study.

The genetic samples will be held until techniques capable of discriminating marine forage fish at fine spatial scales are further developed.

As was the case in 2005 and 2006, we continued to encounter logistical challenges shipping preserved samples to and from remote areas of Alaska. Stringent liquid nitrogen (LN) and Reagent Alcohol transportation restrictions enacted following 9/11 made it very difficult to ship preserved samples. The “dry-ship” LN containers that meet the new “Non-Hazmat” shipping guidelines are only viable for 7-10 days, which leaves very little room for sample collection/shipping delays (e.g., fish are late arriving on the spawning grounds, flights are delayed, etc.). In 2005, this problem was exacerbated by containers being frequently opened for inspection by the Transportation Security Administration (TSA), causing them to further reduce their viable service life. In 2006, one of the Bering Sea samples was held up during transport and the samples arrived thawed in Juneau. In 2007 we did not experience any shipping problems and all samples were viable when they arrived in Juneau.

Unfortunately, it was recently discovered that one of the samples previously collected was ruined when a NMFS-Auke Bay Lab off-site storage freezer and alarm system both failed. The ruined sample (Kodiak Winter 2005) was particularly important to us because it was the means by which we intended to evaluate Objective #2 in our original DPD for Project 05769. As such, we will attempt to collect another sample from Kodiak Island this winter to assess whether the stock(s) of origin from herring harvested in winter food/bait fisheries can be determined by comparing their heart tissue fatty acid concentrations to those of local spawning aggregations. If results from this sample are not available in time for submitting our draft final report in April 2008, we will either request a no-cost extension or submit an addendum addressing that single objective.

Except for the possible collection of one last sample from Kodiak Island, all field collections are now complete. Fatty acid analysis of all samples collected to date, excluding the Kodiak Winter sample that was destroyed but including this Spring’s PWS samples, has been completed. Chemical analysis of the otolith samples is well underway and is expected to be completed shortly. Statistical comparisons among temporally and spatially segregated samples are also underway and are expected to be completed for on-time submittal of a draft final report in mid-April.

## **2. Summary of Future Work to be Performed:**

We have no proposed changes, other than adding the task to attempt a repeat collection of the Kodiak Winter sample that was destroyed when a storage freezer malfunctioned.

## **3. Coordination/Collaboration:**

This project relied heavily upon close coordination and collaboration with ADF&G research vessels and personnel conducting normal agency functions. By successfully coordinating with ADF&G research vessels and staff, we were able to collect herring heart, genetic, and otolith samples for this project at greatly reduced cost by not having to charter our own vessels.

#### 4. Community Involvement/TEK & Resource Management Applications:

To outreach this study's progress and results to interested community members and the general public, we developed a project web site: [www.herringstockid.info](http://www.herringstockid.info). We've also been corresponding with the local Homer representative of the Alaska Marine Conservation Council (AMCC: Alan Parks), who received approval from his organization's governing board to collaborate with us to outreach this project via AMCC's network of personnel in Alaska's coastal fishing communities. Two possibilities we're considering are designing a project outreach poster that could be displayed in selected communities with an interest in Alaska's herring fisheries, and writing an article for the AMCC newsletter.

This proposal has broad support from ADF&G Management/Research staff, as demonstrated by their efforts to help collect samples from their respective areas (e.g., Sitka [Marc Pritchett], PWS [Steve Moffitt, Richard Brenner], Lower Cook Inlet [Lee Hammarstrom], Kodiak [Mark Witteveen, Forrest Bowers], Togiak [Tim Baker, Chuck Brazil], and Kuskokwim Bay [John Linderman, Doug Bue]).

#### 5. Information Transfer:

During this reporting period, the PI and Co-PI's attended and presented a poster at the Annual EVOS-GEM Marine Workshop (January 21-24, 2007), submitted the Annual Report for this project (September 1, 2007) and maintained a web site for outreaching project information ([www.herringstockid.info](http://www.herringstockid.info)).

#### 6. Budget:

We did not experience any budgetary problems and have no substantial differences to report between actual and budgeted expenditures.

**Report Prepared By:** Ted Otis

**Project Web Site Address:** <http://www.herringstockid.info>

**SUBMIT ANNUAL REPORTS ELECTRONICALLY TO [brenda\\_ramos@evostc.state.ak.us](mailto:brenda_ramos@evostc.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.**