

EVOS ANNUAL PROJECT REPORT

Project Number: G-050670

Project Title: Monitoring dynamics of the Alaska coastal current and development of applications for management of Cook Inlet salmon

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Time Period Covered by Report: October 1, 2004 – September 30, 2005

Date of Report: August 15, 2005

1. **Work Performed:** In mid July 2005, we conducted oceanographic sampling along transects across Kennedy and Stevenson Entrances, Shelikof Strait, and Cook Inlet. Casts were conducted with a conductivity temperature depth recorder (CTD) at eighty stations. In July 2005, fisheries and oceanographic sampling was conducted on board an ADF&G test fishing vessel each day along a transect running from Anchor Point to the Red River Delta in Cook Inlet. Test fishing was conducted at six stations along the transect to estimate the size of the sockeye salmon run entering upper Cook Inlet (UCI). A side-looking fisheries acoustic system, an ADCP, and a CTD were mounted on a 2-m aluminum sled and towed along side the vessel between stations. CTD casts were also conducted at each station. During this third year of the project, we encountered no problems with the side-looking acoustic and ADCP cabling systems. But, the stability of the aim of the side-looking acoustic system was still unacceptable, particularly when tidal currents were strong. In August, we tested a multibeam acoustic system as an alternative to the side-looking system. Preliminary results suggest that this system towed in an uplooking configuration may provide more reliable estimates of fish density and distribution over relatively small spatial scales. We are currently in the process of archiving and properly documenting the acoustic and oceanographic data collected last summer, as well as, conducting retrospective analyses of our historical test fishing data to evaluate methods for improving forecast accuracy.

2. **Future Work:** We do not anticipate any changes to the work proposed in our study plan for the upcoming year.

3. **Coordination/Collaboration:** We have worked with Jennifer Ewald of NOAA to coordinate our ADCP measurements with her sub-surface current measurements. We have also worked with the Cook Inlet Regional Citizen's Advisory Council, University of Alaska, and Minerals Management Service to build a sampling program around the physical measurements made during the OTF cruises. The new sampling includes seasonal hydrographic measurements along the OTF line, Shelikof Strait, and at Kennedy and Stevenson Entrances. We are working with Edward Cokelett of NOAA/PMEL to utilize the data from the EVOS funded marine highway sampling project

4. **Community Involvement/TEK & Resource Management Applications:** The test fishing data collected during this project was used to project the size of the sockeye salmon run entering UCI. The projected size of the sockeye salmon run was greater than the preseason

forecast resulting in a change to the management tier applied in the Kenai River Late-Run Sockeye Salmon Management Plan. Future analyses of oceanographic data collected during the project will focus on how to improve these projections.

5. **Information Transfer:** The project principal investigators attended the annual EVOS workshop in January 2005, and presented preliminary results from the first year of the project as a computer animation. Results have been presented at the interagency crab meeting, and to several groups as part of Kachemak Bay Research Reserve “Whats new in the Bay” presentations. Project results to date will also be presented at the national American Fisheries Society meeting in Anchorage in mid September. We are currently in the process of archiving and properly documenting the oceanographic data collected last summer.

6. **Budget:** Expenditures to date and those anticipated through project completion remain within allocated budget.

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