

EVOSTC ANNUAL PROJECT REPORT

Project Number: 070830

Project Title: Trends in Adult and Juvenile Herring Distribution and Abundance in PWS

PI Name: Richard Thorne

Time period covered: Oct 1, 2007 - Aug 31, 2008

Date of Report: Aug 19, 2008

Report prepared by: Richard Thorne

Project website (if applicable): pwssc.org

Work Performed:

The objectives of this project were to provide information on abundance and distribution of key herring life stages and to provide a platform for biological collections for other EVOS TC projects.

Cruises

Two cruises were successfully completed, one in November 2007 and the second in March 2008. Both cruises had multiple components: an adult herring survey, a juvenile herring survey, marine mammal and bird census and a direct capture effort for biological samples. Areas covered were Simpson Bay, Port Gravina, Port Fidalgo, Eaglet Bay, Whale Bay, Sawmill Bay and Zaikof Bay. Electronic copies of cruise reports are available for both cruises upon request. Analysis of data from cruises is on schedule. A PWSSC Technical Report on the 2006 and 2007 adult herring surveys is also available upon request.

Meetings attended

1. EVOS TC Herring workshop in Anchorage, Oct 17-19
2. Oceans07 meeting in Vancouver, B.C. in Oct 2007-gave two papers, both published in proceedings
3. Alaska Marine Science Symposium, January 20-23
 - a) gave oral presentation on EVOS TC-sponsored research
 - b) attended EVOS TC-sponsored meeting on herring restoration plan
4. Participated in EVOS TC-Herring Workshop in Cordova, April/May 2008
5. Attended Acoustic08, the 155th Annual Meeting of the Acoustical Society of America. Gave invited paper on the application of acoustic techniques in marine ecosystem studies.
6. Attending International Symposium on Herring, Galway, Ireland, August 2008
Two oral presentations on work partially supported by EVOS TC

Papers

1. Major paper on herring and EVOS published in ICES Journal of Marine Science, January 08 edition volume 65 (electronic copy available)
2. PWSSC Technical Report on 2006 and 2007 adult herring surveys (electronic copy available)
3. Major paper on role of walleye pollock in PWS ecosystem published in Lowell-Wakefield Symposium Proceedings
4. Paper on results of passive acoustic measurements of herring/whale interactions published in Proceedings of Oceans07. (electronic copy available)
5. Paper on factors associated with pink salmon survival in PWS published in Proceedings of Oceans07 (electronic copy available)
6. Paper on herring predation modeling tentatively accepted in Oecologia

Submit this report via e-mail to science_director@evostc.state.ak.us. Thank you!

Other

1. Participated in review of draft EVOS TC Herring Restoration Plan
2. Draft versions of two potential peer-reviewed publications initiated

Future Work:

Future cruises are scheduled for early November 2008 and March 2009

Coordination/Collaboration:

A primary goal of the project is to provide a platform for biological collections for other EVOS TC projects. This goal was well satisfied during the November 2007 and March 2008 cruises. We have developed a suite of sampling tools that are reasonably successful and can be used at relatively low cost.

Community Involvement/TEK & Resource Management Applications:

We worked closely with ADF&G on surveys and samples.

Local fishermen are used in our vessel charters.

Published three articles in *The Breakwater*, the newsletter of PWSSC. One was on the link between EVOS and the collapse of the PWS herring, a second covered the November 2007 herring cruise, and the third described the research on gas bubble release by herring when attacked by whales.

Information Transfer:

The project contributed to several publications:

Thorne, R.E. 2008. Walleye pollock as predator and prey in the Prince William Sound ecosystem. Pp. 289-304, In: G.H. Kruse, K. Drinkwater, J.N. Ianelli, J.S. Link, D.L. Stram, V. Wespestad and D. Woodby (eds), Resiliency of gadid stocks to fishing and climate change. Alaska Sea Grant, University of Alaska, Fairbanks (16 p.)

Thorne, R.E. and G.L. Thomas 2008. Herring and the "Exxon Valdez" oil spill: an investigation into historical data conflicts. *ICES Journal of Marine Science* 65(1):44-50.

Thorne, R.E. and G.L. Thomas 2007. Acoustic Monitoring of the Juvenile Pink Salmon Food Supply and Predators in Prince William Sound, Alaska. *Proc. Oceans 2007, Vancouver, B.C., Canada, Oct 1-4, 2007. IEEE Publications.* 10.1109/OCEANS.2007.4449157

Thomas, G.L. T. Hahn and R.E. Thorne 2007. Integrating passive and active acoustics for assessment of fish stocks. *Proc. Oceans 2007, Vancouver, B.C., Canada, Oct 1-4, 2007. IEEE Publications.* 10.1109/OCEANS.2007.4449243.

Budget:

Budget expenditures are proceeding as per projections. No problems are anticipated.