

Exxon Valdez Oil Spill
Long-Term Herring Research and Monitoring Program Final Report

Herring Research and Monitoring Coordination and Logistics

Exxon Valdez Oil Spill Trustee Council Project 16120111-O
Final Report

W. Scott Pegau

Prince William Sound Science Center
Box 705
Cordova, AK
99574

May 2018

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Study History: This is the coordination component of the Herring Research and Monitoring program (project 16120111). It involved coordination within the program (Projects 16120111-A to R). It provided external coordination with the Long-term Monitoring Gulf Watch Alaska program (project 16120114). This work builds on the Prince William Sound Herring Survey program (project 10100132).

One product of this project is the synthesis submitted to the *Exxon Valdez* Oil Spill Trustee Council titled, Pacific herring in Prince William Sound: A synthesis of recent findings (Herring Research and Monitoring Team, 2014). This report draws on the annual reports submitted for fiscal years 2012-2016.

Abstract: This final report contains a description of the coordination activities that took place in the Herring Research and Monitoring Program between 2012 and 2016. Coordination occurred internally with the principal investigators, and externally with the Long-term Monitoring Gulf Watch Alaska program. The coordination effort provided a point person for communications with the *Exxon Valdez* Oil Spill Trustee Council staff and the Gulf Watch Alaska program. The objectives of this project were to provide coordination and logistics, as well as to produce a synthesis of recent findings. Coordination was primarily through email with annual meeting of the principal investigators. Outcomes of the coordination efforts were a synthesis on recent finding related to Pacific herring (*Clupea pallasii*) in Prince William Sound, and a manuscript with principal investigators from both programs that examined how environmental properties were related to growth of herring during their first year. This is an administrative project and findings of the research are contained in the program and individual project final reports.

Key words: *Clupea pallasii*, coordination, Pacific herring, Prince William Sound

Project Data: As a coordination and logistics effort, this project did not generate any data.

Citation:

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EXECUTIVE SUMMARY

This final report contains a description of the coordination activities that took place in the Herring Research and Monitoring Program between 2012 and 2016. Coordination occurred internally with the principal investigators, and externally with the Long-term Monitoring “Gulf Watch Alaska” program. The coordination effort provided a point person for communications with the *Exxon Valdez* Oil Spill Trustee Council staff and the Gulf Watch Alaska program. The objectives of this project were to provide coordination and logistics, as well as to produce a synthesis of recent findings. Coordination was primarily through email with annual meeting of the principal investigators. Outcomes of the coordination efforts were a synthesis on recent finding related to Pacific herring (*Clupea pallasii*) in Prince William Sound, and a manuscript with principal investigators from both programs that examined how environmental properties were related to growth of herring during their first year. This is an administrative project and findings of the research are contained in the program or individual project final reports.

INTRODUCTION

The Herring Research and Monitoring (HRM) program consisted of eighteen individual projects that were selected to fulfill the objectives of the program. The objectives of the HRM program are:

- 1) *Provide information to improve input to the age-structure-analysis (ASA) model, or test assumptions within the ASA model.* The ASA model is currently used by the Alaska Department of Fish and Game (ADF&G) for estimating herring biomass (Hulson et al. 2008). The proposed monitoring efforts are designed to address this objective by either expanding the data available for the existing ASA model or by providing information about factors that determine the size of recruitment events.
- 2) *Inform the required synthesis effort.* Proper completion of a detailed synthesis means being able to access and manipulate different sources of data and information. We are proposing projects that make data available to all researchers.
- 3) *Address assumptions in the current measurements.* Many of the existing studies are based on historical or logistical constraints. We are proposing research necessary to put the existing measurements into context spatially and temporally. This effort will allow the design of the most accurate and efficient monitoring program.
- 4) *Develop new approaches to monitoring.* With technological advances we have the potential to improve our monitoring programs so they require less effort or reduce the need to collect fish.

The large number of projects and investigators from multiple institutions made it imperative that there be a coordination effort to ensure the program objectives were met. The coordination effort also provided a point person for coordinating with the Long-term Monitoring “Gulf Watch

Alaska” (GWA) program and with staff at the *Exxon Valdez* Oil Spill Trustee Council (EVOSTC).

The approach used in the HRM program followed that used by the Prince William Sound (PWS) Herring Survey program (EVOSTC Project 10100132). The two programs had overlap in investigators and in some of the projects contained within the programs. Both programs emphasized the study of overwintering juvenile herring, although studies at other life stages also occurred. More information on the overall program is provided in the HRM program final report (Herring Research and Monitoring Team 2017).

OBJECTIVES

The coordination project objectives are:

- 1) Ensure coordination between projects to achieve the program objectives.
- 2) Provide a synthesis from existing results.
- 3) Provide logistical support to the various projects.

METHODS

Coordination

The primary tools for coordination among projects was through an email list serve. This provided a means to rapidly share information among all groups to ensure that everyone was aware of the efforts taking place. A two-day annual principal investigator (PI) meeting allowed investigators to share results and build connections between projects. In alternating years the PI meeting was held in conjunction with the GWA PI meeting to provide for cross-program connections. A short PI meeting was also held during the Alaska Marine Science Symposium to update investigators on the latest results and to coordinate spring sampling activities. The PI meetings also provided an opportunity for community outreach and a means to gather public input.

Dr. Pegau was the program team leader and was responsible for ensuring a coordinated and focused research program. Coordination efforts included ensuring projects were completed in an order necessary to build upon each other, and to ensure collection of samples necessary for other projects within the program. He also was the primary connection to the GWA program and ensured coordination between the programs. His efforts included ensuring reports and proposals were turned in as required.

An oversight panel was set up that consisted of Sherri Dressel with ADF&G, Jeep Rice with the National Oceanic and Atmospheric Administration, and Steve Martell with the International Pacific Halibut Commission. The function of the group was to provide Dr. Pegau with feedback on progress of the research and provide guidance of future research needs. The HRM Oversight Panel attended the PI meetings to follow progress of the work being accomplished. They also provided comments on annual reports and work plans, but not on final reports.

Coordination was also achieved through scheduling of vessels and aircraft through this project. By incorporating the logistics into one project it was possible to maximize the use of vessel time and ensure collection of data and samples for the most projects.

Synthesis

One deliverable of the program was a synthesis of information related to Pacific herring in PWS. Each project was asked to synthesize the information associated with the field of work their proposal addressed. The individual contributions were then melded together to address topical areas; such as growth, energy, and the environment section that used contributions from four of the HRM projects and two of the GWA projects.

Logistics

Coordination was also achieved through scheduling of vessels and aircraft through this project. By incorporating the logistics into one project it was possible to maximize the use of vessel time and ensure collection of data and samples for the most projects. This project also acquired a remotely operated vehicle (ROV) for use by the non-lethal sampling project (Project 16120111-D) as well as other projects as needed.

Part of the logistics effort was contracting with Cordova District Fisherman's United (CDFU) for collection of juvenile herring in March of each year. These fish were then used by the growth and energetics project (Project 16120111-L).

While the budget for aircraft support was in Project 16140111-R, the coordination project was responsible for ensuring the collection of data and coordination of sampling with the forage fish project in GWA (Project 16120114-O). Results from aerial sampling are provided in the final report of Project 16140111-R (Pegau 2017).

RESULTS

As a coordination and logistics project the results are primarily seen in the completion of research efforts, annual reports, and work plans. The analysis of the data collected during the aerial surveys that was completed by this project is reported in the final report of Project 16140111-R (Pegau 2017). The other analysis completed by this project is the synthesis report submitted to the EVOSTC (Herring Research and Monitoring Team 2014).

All cruises and flights occurred as scheduled in support of the various projects. The collection of juvenile herring by CDFU occurred each spring as required. All reports and work plans were submitted on schedule.

DISCUSSION

The coordination of administrative elements through email appears to work well. The PI meetings are critical in advancing the science. It is through the more informal discussions when the PIs have time to speak that many of the more creative ideas are generated. This becomes more difficult when the HRM and GWA are combined for PI meetings because of the large size of the group. The best approach seems to have been to hold the meetings sequentially so there is focus, but PIs from both programs can attend and there can be some joint activities. Having

meetings in the oil spill affected region rather than Anchorage is also important for soliciting feedback from the community members.

The inclusion of the Oversight Panel requires that the program coordinator find the balance of asking for reports and proposals far enough in advance that comments can be made and addressed and not so far in advance that the PIs get rushed. Over the past five years the materials were requested two weeks in advance of the due date to EVOSTC, but that was not enough for internal review and we will need to have them due one to two weeks earlier in the future.

A cross-program collaboration developed as an outcome of a joint PI meeting. PIs from the GWA program provided environmental data to relate to herring growth based on the herring scales imaged and analyzed in the HRM program. The final result of the collaboration is the manuscript on environmental factors influencing growth by Batten et al. (2016).

CONCLUSIONS

The objectives of the coordination project were met. Coordination occurred both within the program and with the GWA program. PI meetings were held regularly to encourage collaboration among PIs. The synthesis report was generated during the third year of the program that pulled together results from the first two years (2012, 2013) along with historical findings to describe our understanding of many aspects of herring in PWS. The logistics provided support to all projects in the program. These methods allowed for coordination of the projects without creating a large administrative burden on the projects and will continue to be used in future efforts.

ACKNOWLEDGEMENTS

I thank all of the principal investigators of the HRM program for their contributions to the program. I also acknowledge the efforts of the GWA program leads in providing a means to coordinate the efforts of the two programs. The views expressed here are our own and do not necessarily represent those of the *Exxon Valdez* Oil Spill Trustee Council.

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