

Form Rev. 9.14.17

*Please refer to the Reporting Policy for all reporting due dates and requirements.

1. Project Number: See, Reporting Policy at III (C) (1).

17120111-A

2. Project Title: See, Reporting Policy at III (C) (2).

Herring Program – Program Coordination

3. Principal Investigator(s) Names: See, Reporting Policy at III (C) (3).

W. Scott Pegau

4. Time Period Covered by the Report: See, Reporting Policy at III (C) (4).

1 February 2017 to 31 January 2018

5. Date of Report: See, Reporting Policy at III (C) (5).

February 2018

6. Project Website (if applicable): See, Reporting Policy at III (C) (6).

<http://pwssc.org/herring-project-coordination/>

7. Summary of Work Performed: See, Reporting Policy at III (C) (7).

The work described here is that to provide coordination of the Herring Research and Monitoring (HRM) program. In addition to the coordination efforts, it includes a postdoctoral researcher to analyze the relationships between herring stocks and physical and biological oceanographic conditions. Furthermore, it covers the community involvement and outreach activities of the program. The goal of the project is to provide coordination within the HRM program and with the Gulf Watch Alaska (GWA) and Data Management (DM) programs. The objectives of the project are:

- 1) *Coordinate efforts among the HRM projects to achieve the program objectives, maximize shared resources, ensure timely reporting, and coordinate logistics.*
- 2) *Oversee a postdoctoral researcher.*
- 3) *Provide outreach and community involvement for the program.*

The proposed approach follows that used during the Prince William Sound (PWS) Herring Survey and initial HRM programs. Coordination is primarily through e-mail and teleconference. The management team of GWA and the lead of DM are included in the emails to HRM PIs to ensure they are aware of our activities. We also have joint principal investigator (PI) meetings and community involvement activities.

Outreach efforts are focused on providing up-to-date information on the projects and their findings. Community involvement includes regular communications with stakeholders, such as the herring division of the Cordova District Fishermen United and Alaska Department of Fish and Game (ADF&G) to stay aware of their findings and observations.

Project tasks for the past year include recruiting and selecting a postdoctoral researcher, submitting the semi-annual report to National Oceanic and Atmospheric Association (NOAA), submit FY18 proposals to the *Exxon Valdez* Oil Spill Trustee Council (EVOSTC), hold an annual PI meeting, and complete annual web updates.

The postdoctoral position was advertised, and two candidates interviewed. Both candidates were found to have the potential to provide significant contributions to the HRM program. Dr. Maya Groner was selected to work on the connection of herring diseases to environmental conditions. Dr. Groner will begin working with the HRM program in February 2018. She will be an employee of the Prince William Sound Science Center and supervised by Dr. Pegau but will work primarily with Dr. Hershberger. The second candidate, David McGowan, proposed to examine the linkages between PWS Pacific herring recruitment and environmental forcing factors. We recommended that his postdoctoral position be funded in FY18, and his funding was approved by the EVOSTC. He will be supervised by Dr. Branch at the University of Washington.

Reports and proposals have been submitted to NOAA and EVOSTC on time. Reports and proposals are being requested from the PIs earlier than they have in the past to allow the HRM Science Oversight Group additional time to comment on them before submission.

The annual PI meeting was held in Cordova in November in conjunction with the GWA PI meeting. PIs, including the two post-docs presented on the progress of their projects. We also invited Dr. Whitehead, who has an EVOSTC herring research project outside of the HRM program, to attend the PI meeting. The meeting was open to community members, and we had a couple of people take advantage of the opportunity to follow our work. We also had the DM program present and worked with the PIs. The following day the HRM PIs joined the GWA PIs to provide coordination among projects from the two programs.

The outreach work included updating the website to ensure all projects in the current program are represented and for those that continued from the previous five-year period were updated. Two of the completed project webpages were updated and we worked with the website developer to better identify which projects are on going and those completed. Additionally, four Field Notes were developed. Field Notes are podcasts describing the work that are also shared with the local public radio station.

Additional work that was covered by this project over the last year included conducting aerial surveys for forage fish in PWS, and serving as a guest editor for the special issue of Deep Sea Research II that includes manuscripts from the first five years of effort. The aerial surveys found more than typical numbers of forage fish schools (most identified as age-1 herring) during June (Figure 1). While there were fewer schools in 2017 than in 2013, the size of the schools in 2017 were larger. I have been seeking funding from other sources to be able to continue these surveys to support the modeling efforts and the GWA forage fish project.

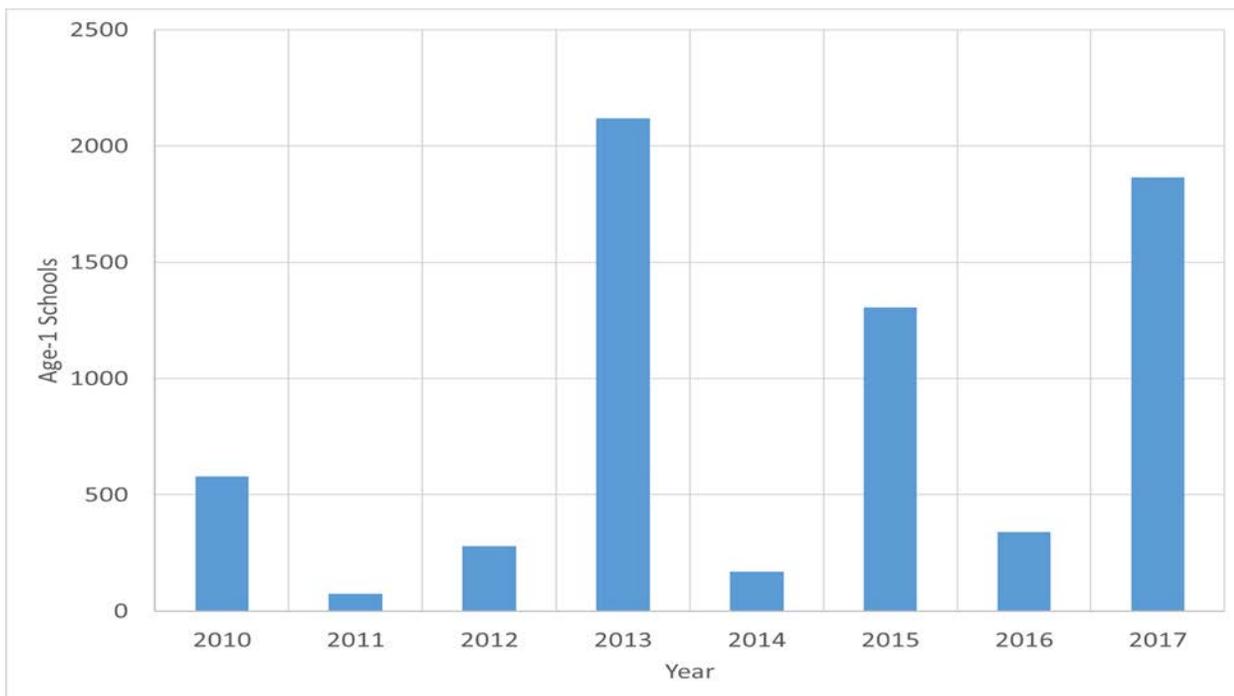


Figure 1. Number of schools of fish identified as age-1 herring during June aerial surveys.

8. Coordination/Collaboration: *See, Reporting Policy at III (C) (8).*

This project works with all projects within the HRM program. Coordination is primarily through email and the annual PI meeting. Work with projects includes ensuring reporting is completed promptly and assisting the coordination of sampling logistics. I work with individual projects to provide the samples needed and as a source of information about existing data and results.

I serve as the primary contact for the HRM program with the GWA and DM programs. Coordination includes having the leads to all the programs on my general mailing list, so everyone is aware of any information going out to the HRM PIs. I also work with the leads to address specific topics of joint interest, such as reporting. I reached out and am working to include Dr. Whitehead, who has a herring related lingering oil project, to include him as possible. He was able to attend the HRM PI meeting remotely.

Sherri Dressel (ADF&G) is on the HRM scientific oversight group. Sherri, along with Stormy Haught of the Cordova office of ADF&G, are the primary contact points between the HRM program and the trustee agency with oversight of herring in PWS. The monitoring work of the HRM program provides the data necessary for ADF&G to monitor the Pacific herring population in PWS and determine if the population is at a fishable threshold. The exchange of information with ADF&G is important for being able to track similar research efforts ongoing at ADF&G and in the HRM program.

9. Information and Data Transfer: *See, Reporting Policy at III (C) (9).*

a) Publications

Aderhold, D. G. R., M. R. Lindeberg, K. Holderied, and W. S. Pegau. 2018. Spatial and temporal ecological variability in the northern Gulf of Alaska: What have we learned since the *Exxon Valdez* oil spill? *Deep Sea Research II* 147:3-8. <https://doi.org/10.1016/j.dsr2.2017.11.015>

Gorman, K. B., T. C. Kline, M. E. Roberts, F. F. Sewall, R. A. Heintz, and W. S. Pegau. 2018. Spatio-temporal variation in stable carbon and nitrogen isotope signatures and condition of juvenile herring (*Clupea pallasii*) in Prince William Sound, Alaska: teleconnections with the Gulf of Alaska. *Deep Sea Research II* 147:116-126. <https://doi.org/10.1016/j.dsr2.2017.10.010>

b) Presentations

Pegau, W. S., et al., Prince William Sound Herring Research and Monitoring. Poster presentation. PICES Drivers of Dynamics of Small Pelagic Fish Resources, March 6-11, 2017.

Pegau, W. S., An update on the Herring Research and Monitoring program. Oral presentation. Prince William Sound Regional Citizens' Advisory Council, September 2017.

c) Information products

The HRM website (http://pwssc.org/research/?research_topic=herring) was updated with pages added for new projects and updated materials for continuing projects. Four Field Notes radio program/podcasts were developed. Several project profiles – print optimized versions of the project webpages – were constructed for sharing at the Alaska Marine Science Symposium.

d) Datasets

The data and logs from the aerial surveys were uploaded to the workspace. This includes the spreadsheet with the number of schools of age-1 herring and their size and the raw survey data.

10. Response to EVOSTC Review, Recommendations and Comments: *See, Reporting Policy at III (C) (10).*

Science Panel Comments and Responses on Revised FY17-21 Proposal, September 2016

The Panel also appreciates that Dr. Pegau's program has endured a number of changes in personnel, with some departing PI's and some new ones. Such changes can be disruptive, and the Panel heartily commends Dr. Pegau for his steady and dedicated supervision of a number of complex and varied management issues. In particular, we salute the continued operational integration of the projects, especially the collaborative sharing of vessels and other forms of cooperation among PI's, both with and between the Herring and LTM programs.

The Panel appreciates the extension of the postdoc for a full three years.

Actions

PI Response: We advertised for postdoctoral candidates and had applicants submit full proposals. The proposals were reviewed by members of the HRM, GWA, and EVOSTC staff and the proposals submitted to the EVOSTC Science Panel for their concurrence. Two postdocs were selected. One is funded through this project and is budgeted for a three-year period. The second is funded through project 17120111-C, and the requested funding was for a three-year period.

Science Panel Comments and Responses on FY18 Work Plans, September 2017

The Panel appreciates Scott's hard work and effort in the coordination of the Herring Research Monitoring Program. We were pleased to hear that PIs are compliant and rapidly uploading their data to the data portal. The panel is especially pleased to see Scott's involvement in promoting the inclusion of a postdoc in the Herring Program.

PI Response (10/11/2017) Thank you

11. Budget: See, Reporting Policy at III (C) (11).

EXXON VALDEZ OIL SPILL TRUSTEE COUNCIL PROGRAM PROJECT BUDGET PROPOSAL AND REPORTING FORM

Budget Category:	Proposed FY 17	Proposed FY 18	Proposed FY 19	Proposed FY 20	Proposed FY 21	TOTAL PROPOSED	ACTUAL CUMULATIVE
Personnel	\$57.0	\$153.3	\$164.4	\$161.9	\$51.7	\$588.3	\$ 27.9
Travel	\$6.4	\$9.9	\$6.4	\$6.4	\$6.4	\$35.5	\$ 4.2
Contractual	\$24.7	\$26.0	\$26.2	\$11.0	\$4.4	\$92.3	\$ 25.6
Commodities	\$3.8	\$1.5	\$3.5	\$1.4	\$1.5	\$11.7	\$ -
Equipment	\$0.0	\$0.0	\$0.0	\$0.0	\$4.2	\$4.2	\$ -
Indirect Costs (will vary by proposer)	\$35.1	\$57.20	\$60.15	\$54.2	\$19.2	\$225.8	\$ 24.8
SUBTOTAL	\$127.0	\$247.8	\$260.7	\$234.9	\$87.4	\$957.8	\$82.5
General Administration (9% of subtotal)	\$11.4	\$22.3	\$23.5	\$21.1	\$7.9	\$86.2	N/A
PROJECT TOTAL	\$138.4	\$270.2	\$284.1	\$256.1	\$95.3	\$1,044.0	
Other Resources (Cost Share Funds)	\$26.0	\$26.6	\$27.2	\$28.0	\$28.3	\$136.1	

COMMENTS:

This summary page provides an five-year overview of proposed project funding and actual cumulative spending. The column titled 'Actual Cumulative' must be updated each fiscal year as part of the annual reporting requirements. Provide information on the total amount actually spent for all completed years of the project. On the Project Annual Report Form, if any line item exceeds a 10% deviation from the originally-proposed amount; provide detail regarding the reason for the deviation.

The Personnel line is underspent because the funds did not become available to the PI until May 2017, which was after a major field season and previous funding was used to cover salaries until this funding became available.



*We appreciate your prompt submission
and thank you for your participation.*