

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

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

15120111-P

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

Genetic Stock Structure of Herring in PWS

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

Sharon Wildes and Dr. Jeff Guyon

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

February 2015-January 2016

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

February 2016

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

<http://pwssc.org/research/fish/pacific-herring/>

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

Pacific herring (*Clupea pallasii*) stocks have remained depressed in Prince William Sound (PWS) for the majority of the last 20 years and the reasons for their lack of recovery are unknown. The purpose of our study is to examine the genetic stock structure of herring within PWS using nuclear and mtDNA markers, and connections to stocks outside PWS.

Samples of herring were collected from eastern PWS, northern Montague Island, and several locations adjacent to PWS, including Kayak Island. Genetic information was examined from fifteen microsatellite loci and mtDNA sequences.

Analyses of the microsatellite loci show that allele frequencies of PWS herring are similar over time, and between year classes. However, one Montague Island collection of spring spawners and a winter collection from Evans Island produced a weak signal of differentiation from other PWS collections. Results also indicate PWS herring are genetically similar to herring east of PWS (Kayak Island, Yakutat), but are significantly different than herring west of the sound (Kodiak, Cook Inlet) (Figure 1). These findings suggest that PWS herring have connected with adjacent stocks to the east, either continually or episodically, but are not likely departing PWS and traveling westward in the Alaska Coastal Current around the Gulf of Alaska.

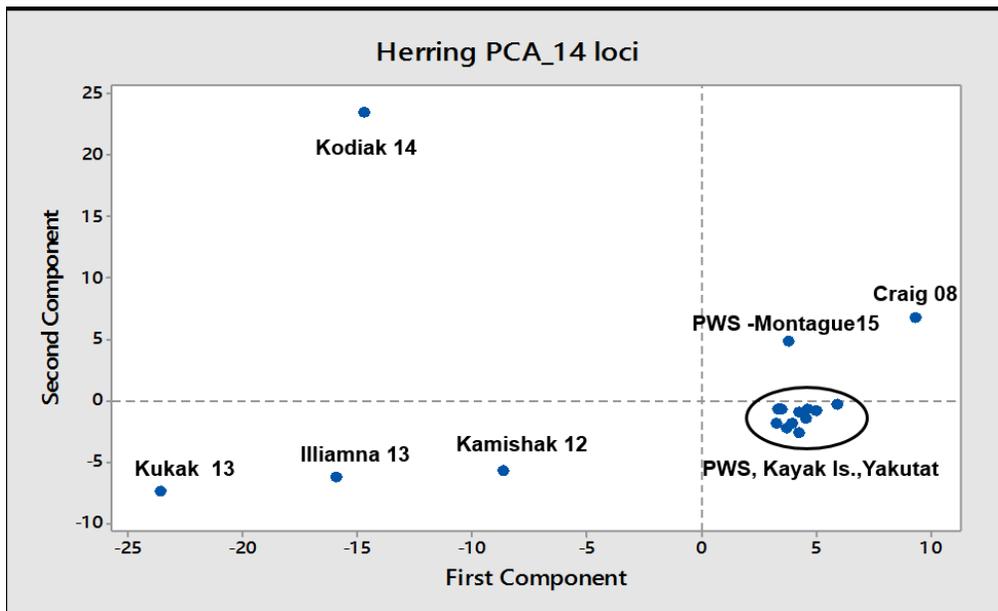


Figure 1. First and second principle components of the microsatellites showing how PWS and those to the east are similar, but very different from fish collected at locations west of PWS.

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

We collaborated with other researchers in the HRM program and ADF&G offices for collection of samples from around PWS and the Gulf of Alaska.

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

Data is just now becoming available and is still in a preliminary state, but we are beginning to transfer data and information into the AOOS website. A poster with preliminary results was presented at AMSS. A presentation was given at the Cordova community lecture series.

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

NA

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

\$30K remaining to complete 2015 collection samples.



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