



R & E Grant Application 13 Biennium

Project #:
13-100

Pacific Herring Assessment Methodology

Project Information

R&E Project Request: \$13,500.50
Match Funding: \$52,946.50
Total Project: \$66,447.00
Start Date: 12/5/2014
End Date: 6/30/2015
Project Email: alison.d.dauble@state.or.us
Project Biennium: 13 Biennium
Organization: ODFW - Marine Resource Program

Applicant Information

Name: Alison Dauble
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Past Recommended or Completed Projects

This applicant has no previous projects that match criteria.

Project Summary

This project is NOT part of ODFW's 25 Year Angling Plan.

Activity Type: Miscellaneous (Enhancement)

Summary: This project will provide critical information to manage Pacific herring sustainably while improving management of commercial and recreational fisheries. Pacific herring are an integral part of the nearshore ecosystem and support both recreational and commercial fisheries. However, the herring population has never been assessed coastwide. R&E funds would be used as part of a larger project to assess and monitor the population of Pacific herring, specifically to conduct an acoustic survey in Yaquina Bay.

Objectives: There are two objectives that R&E funding will contribute to, including 1) evaluate methodologies to assess Pacific Herring population status in Yaquina Bay, and 2) investigate the effectiveness of using acoustic surveys to estimate adult herring biomass in Yaquina Bay.

**Fishery
Benefits:**

Results from this study will benefit both commercial and recreational fisheries for Pacific herring by providing a practical and accurate method to annually assess the herring population in Yaquina Bay. Pacific herring are targeted by both recreational and commercial fisheries on the Oregon coast. A limited entry state-managed fishery in Yaquina Bay is traditionally executed concurrently with the herring spawning season, typically from mid-February to mid-March. The recreational fishery for herring occurs year-round in Yaquina Bay. In addition, recreational jigging for herring provides exciting fishing opportunities for both children and adults new to fishing. Once a school is located, it is relatively easy to catch herring on herring jigs that allow for catching more than one fish at a time, typically two to four herring per drift. It is unknown if the Pacific herring population can support current levels of harvest sustainably.

Accurate estimates of spawning biomass would be used to set the annual quota for the commercial roe-herring fishery, directly benefiting local fishing communities, and provide resource stability to allow the long-term market for Pacific herring to re-develop. This limited-entry fishery could provide fishing opportunities at a time of year where those are scarce. Recreational herring fishermen would benefit from an accurate assessment through increased confidence in the long-term sustainability of the recreational harvest. Long-term, the methods developed to assess Yaquina Bay herring could be used in other estuaries along the Oregon coast, facilitating the first coastwide assessment of the Oregon Pacific herring population and potentially opening up new opportunities to Pacific herring fishing for both commercial and recreational fishermen.

Many fish species rely on Pacific herring as a significant component of their diet, including salmon, halibut and a wide array of groundfish. These fish support substantial commercial fisheries and popular recreational fisheries. Annual herring biomass estimates could potentially be used as an indicator of ocean conditions and the ability to accurately estimate the size of the herring population could improve management of these other fisheries

Watershed Benefits: Pacific herring support a diverse array of fish, birds and marine mammals in Oregon's estuaries, contributing to the overall health of the estuary and the local fishery resources. Herring spawn and larvae also provide a highly abundant seasonally available food source for seabirds and various species of fish present in estuaries, including juvenile salmon and several species of groundfish.

Current Situation: State Wildlife Grant funding was secured in 2013 to evaluate new methods to assess the Pacific herring population in Yaquina Bay. The field season in the winter of 2013/14 was extremely successful. However, the timing of the spawning activity was over a month later than typical and the acoustic survey was unable to capture immediate pre-spawn population size. This decreases confidence in the results of acoustic assessment, as the size of the herring population increases throughout the spawn season, and a second year of acoustic field work is critical to the long-term success of the project.

Alternatives: The only currently available method to estimate herring biomass is to estimate the number of spawning adults from the previous year. This method takes a substantial amount of time to conduct intertidal surveys and process spawn samples. The large, natural population swings common with Pacific herring from year to year are well established, and an estimate from the previous year may not be reflective of the current population size. An acoustic survey would allow for accurate in-season assessment of the resource, promoting long-term resource stability and more consistent fishing opportunities. As such, an acoustic assessment is preferable to the current method of using spawn biomass estimates from the previous year. Acoustic surveys are also more cost-effective than spawn surveys for the agency by providing more accurate population estimates with fewer personnel hours. However, without funding for a second test year for the acoustic assessment, it is unlikely that annual acoustic surveys could be developed for use in assessments.

SWG funding for the 2013/2015 cycle was shared among multiple marine projects and was limited for this particular study. Alternative funding sources, other than the R&E program, are not currently a strong option, as any funding would need to be secured by December 2014, in advance of the beginning of the field season in January 2015. Additional SWG funding is not an option until the 2015/2017 cycle. However, we are not currently planning to pursue additional funding for this project following the 2014/2015 winter field season.

Designer: Alison Dauble (ODFW, Marine Fisheries Analyst)

Methods: Acoustic (sonar) surveys are commonly used in oceanic environments to both identify specific fish species and provide biomass estimates. To determine biomass, a randomly selected portion of the bay is surveyed and a fish density (fish per unit area) determined from the survey applied to the entire bay. A second year of acoustic surveys would provide the information necessary to assess this technique for estimating herring biomass.

Inspector: Alison Dauble (ODFW, Marine Fisheries Analyst)

Funding Elements: R&E funds will be used to conduct a second acoustic assessment of Pacific herring in Yaquina Bay over the winter of 2014/15. Specifically, the funds will cover the lease of the acoustic equipment, moorage fees, and gas for an ODFW vessel and finally, limited travel funds to pick up the acoustic equipment in Seattle to maximize the time the equipment is in hand. These expenses are estimated directly from the 2013/14 field season. The original SWG grant is providing funding for a field position to assist with the acoustic surveys.

Partners: Yes

Local commercial and recreational herring fishermen provided extensive advice on herring behavior and school locations within the bay, and are extremely supportive of the goals of this project. Biosonics Inc. provided technical advice on the overall design of the survey, in addition to substantial technical training of ODFW staff to deploy the acoustic equipment and process the data.

Existing Plan: Yes

Pacific herring are identified as an Oregon Nearshore Strategy species. The Oregon Nearshore Strategy is a strategic document that establishes priorities for ODFW's nearshore marine resources as part of the Oregon Conservation Strategy. Nearshore Strategy species are key species in greatest need of management attention. This project will contribute toward several Nearshore Strategy recommendations and provide critically needed information on Pacific herring. Primarily, this project directly contributes to developing assessment/indicator strategies for a nearshore strategy species (Recommendation 6). By providing information on a comprehensive and cost-effective framework for assessing population status of Pacific herring, this project also makes progress on Recommendation 2, stronger science and information, and Recommendation 3, better decision-making processes. This project also promotes nearshore research and monitoring capabilities (Recommendation 5), the development of Native Fish conservation plans (Recommendation 11), and improving estuarine fish and wildlife management (Recommendation 14).

Affected Contacted: No

Affected Supportive: No

Project Schedule/Participants/Funding

Activity	Date	Participants
Secure contract with BioSonics for lease of acoustic equipment	12/15/2014	A. Dauble
Pick up BioSonics acoustic equipment in Seattle	1/15/2015	A. Dauble
Test runs and calibration of acoustic equipment	1/20/2015	A. Dauble
Begin acoustic surveys in Yaquina Bay	2/1/2015	A. Dauble + EBA
Process acoustic data (concurrent with surveys above)	2/1/2015	A. Dauble + EBA
Final acoustic surveys in Yaquina Bay	3/15/2015	A. Dauble + EBA
Return acoustic equipment to Seattle	3/16/2015	EBA
Final report to R&E program	5/1/2015	A. Dauble
Final report to SWG program	9/1/2015	A. Dauble

Affected

Species: Pacific Herring

Project Permits

This project has no permits.

Project Monitoring

This project has no monitoring.

Project Maintenance

This project has no maintenance plans.

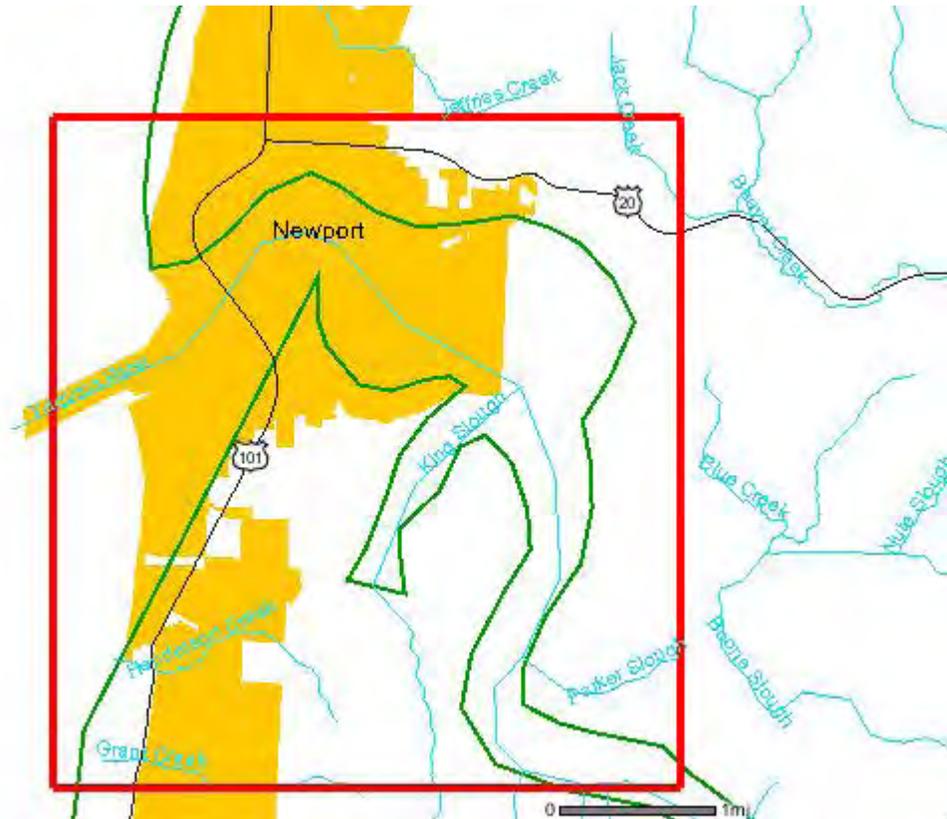
Project Match Funding

Funding Source	Cash	In-Kind	Other	Description	Total	Secured?	Conditions?	Comments
R&E Request	\$13,502.00	\$0.00	\$0.00	Supplemental to SWG funding already secured	\$13,502.00	No	No	
State Wildlife Grant (SWG) OR # F13AF00940 I-05	\$34,374.00	\$18,571.00	\$0.00		\$52,945.00	Yes	No	
				Total Match Funding:	\$66,447.00			

Project Budget

Item	Item Type	Units	Unit Cost	R&E Funds	Match Funds	Total
Overhead	Administration	1	\$10,925.00	\$0.00	\$10,925.00	\$10,925.00
Lease of acoustic equipment - 2014	Equipment	4	\$2,109.00	\$0.00	\$8,436.00	\$8,436.00
Lease of acoustic equipment - 2015	Equipment	6	\$2,109.00	\$12,654.00	\$0.00	\$12,654.00
EBA - 2014	Personnel	9	\$1,004.00	\$0.00	\$9,036.00	\$9,036.00
EBA - 2015	Personnel	9	\$1,004.00	\$0.00	\$9,036.00	\$9,036.00
NRS-3	Personnel	1	\$14,741.00	\$0.00	\$14,741.00	\$14,741.00
Gas for ODFW vessel - 2014	Supplies/Materials /Services	28	\$5.00	\$0.00	\$140.00	\$140.00
Gas for ODFW vessel - 2015	Supplies/Materials /Services	30	\$5.00	\$150.00	\$0.00	\$150.00
Moorage fees for ODFW vessel - 2014	Supplies/Materials /Services	1	\$295.00	\$0.00	\$295.00	\$295.00
Moorage fees for ODFW vessel - 2015	Supplies/Materials /Services	2	\$295.00	\$590.00	\$0.00	\$590.00
Mileage - 2014	Travel	462	\$0.50	\$0.00	\$231.00	\$231.00
Per Diem - 2014	Travel	2	\$53.25	\$0.00	\$106.50	\$106.50
Per Diem - 2015	Travel	2	\$53.25	\$106.50	\$0.00	\$106.50
					Total Budget:	\$66,447.00

Project Map



Additional Files

Click a link to view that particular file.

[herring project approval](#)

[sig page](#)

Applicant Signature Page
Fish Restoration and Enhancement Program
(Oregon Department of Fish and Wildlife Applicants)

I hereby make an application for financial assistance under the terms and conditions of the Fish Restoration and Enhancement Program as described in my project application. I acknowledge that:

- This proposal is an identified priority at the district, region, and/or state level and has been identified as such in the application (**check box** for appropriate level).
- This proposal is consistent with any applicable goals, policies, rules, species or basin management plans adopted by the F&W Commission and this has been explained in the application.
- This proposal will not be used to cover, back fill, or fund shift elements that have been cut or defunded as part of agency budget reductions. Approved deferred maintenance or projects with division approval are exceptions.

I understand that if my project proposal is approved for Restoration and Enhancement (R&E) Program funding, the following will apply:

- Applicants must sign an agreement containing the terms and conditions for the project implementation, release of funds, and documentation of completion. Non-compliance may impact future funding opportunities.
- The R&E Program will not pay for expenses which occur before the approved start date or after the end date.
- Funding is available one biennium only without prior authorization by the R&E Board.
- Applicant agrees to notify the R&E Program of all funds not needed for the project upon determination.
- Any inappropriate expenses using R&E funds will be corrected by the applicant immediately. By the close of the biennium any expenses exceeding, or not identified in, the grant approval will be reverted to a local cost code.
- Copies of all landowner, monitoring and maintenance agreements must be submitted to the R&E Program.
- Educational products resulting from projects are public domain.
- Information collected is subject to Oregon Public Records Law.
- As applicable, the project will be consistent with all federal, state, and local regulations, including the State Land Use Planning Goals & Local Land Use Plans, prior to any on the ground work.

By signing this application, I certify to the best of my knowledge that the information contained in the application are true, complete and accurate. If awarded funding the applicant agrees to follow all terms and conditions outlined in the agreement.

Project Title: Pacific herring assessment methodologies

Applicant Name: Alison Dauble Title: Marine Fisheries Analyst

Applicant Signature: Alison Dauble Digitally signed by Alison Dauble
DN: cn=Alison Dauble, c=US, o=Oregon Dept of Fish and Wildlife,
ou=Marine Resources Program, email=alison.d.dauble@state.or.us Date: 07/11/14

Manager Certification:

To be completed by Watershed Manger, Hatchery Coordinator, Program Manager, or higher level manager.

- I concur with the statements above and the applicant has permission to request these funds.

Manger Name: [Redacted] Title: Manager MRP

Manager Signature: [Signature] Date: 7/11/14

Karla Drewsen

To: Liz Dreith (liz.a.dreith@state.or.us)
Cc: Fred Caslick (Fred_Caslick@fws.gov); Kelly Sliger (Kelly_Sliger@fws.gov)
Subject: OR F13AF00940 I-05 Herring Population Methodology : Approval

Hi Liz-

This email will serve as approval to begin work on the project I-05 Herring Population Methodology, which is an objective under the provisionally approved grant OR F13AF00940 Nearshore Strategy Implementation. Based on completion of all compliance, Federal funds in the amount of \$34,374 is available for reimbursement for approved project activities provided that you comply with the provisions listed below:

VII. Grant Provisions:

1. All vessels used for this grant will maintain a minimum 300 ft from individual Steller sea lions and cetaceans that are sighted. If necessary, vessels will be slowed and put in neutral if animals come within 300 ft of vessel, and powered up again once they exceed 300 ft.
2. ODFW (project staff and contractors, including vessel captain) will follow all guidelines listed in the "Be Whale Wise" brochure (<http://www.bewhalewise.org/>) and abide by the recommendations provided therein.
3. If any listed species are encountered while doing the proposed research, ODFW will estimate the numbers of individuals present and document apparent disturbance reactions or lack thereof. This information will be included in any interim, monitoring and final reports that are required as part of this project.
4. All members of the research and vessel crew will read and be familiar with these mitigation measures.

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Karla H. Drewsen Ph.D.  
Grant Specialist, USFWS  
Wildlife & Sport Fish Restoration -R1  
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