



PRESS RELEASE
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Researchers look for reasons limiting the success of juvenile herring recruitment

Juvenile herring are the focus of a four-year, \$6.8 million research program approved this week by the *Exxon Valdez* Oil Spill Trustee Council. Cordova's Prince William Sound Science Center (PWSSC) will coordinate the investigations to measure factors that may limit the success of herring recruitment including oceanographic conditions, food availability, disease, overwinter energetics of juvenile herring, and predation.

Other researchers participating in this effort are from the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, the U.S. Geological Survey, the University of South Alabama, Flying Fish, Ltd. and the Prince William Sound Oil Spill Recovery Institute. The program also incorporates community involvement and will include contracts to commercial fishermen for some of the sampling activities.

"It's been 20 years since the 1989 Exxon Valdez oil spill," said Nancy Bird, President of the Prince William Sound Science Center, "and yet Pacific herring remains listed as "not recovering" by the Trustee Council. While we've learned a lot, this concerted and integrated program will give us a much better understanding as to why herring have not recovered."

"We are very excited because this four-year program is such a strong commitment by the Trustee Council to understand the factors limiting herring's recovery and to determine what restoration efforts might be effective."

Bird said the 10 projects comprising the Prince William Sound Herring Survey program involve a diverse mix of scientific disciplines. She noted that Cordova District Fishermen United (CDFU) has an important role in the community-based sampling program. CDFU will provide 10 gillnet vessels and captains familiar with the region who will do annual broad-scale surveys to determine where juvenile herring spend the winter.

Scott Pegau, Ph.D., an oceanographer, is coordinator for the program's community involvement, outreach, logistics and synthesis. Aerial surveys will be used to assess herring, the distribution and density of herring predators (seabirds and marine mammals) as well as competitors (sand lance and capelin). These surveys will be done by Evelyn Brown, Ph.D. (Flying Fish, Ltd.).

Richard Thorne, Ph.D. (PWSSC) will lead acoustic surveys of juvenile herring to provide a better picture of the variability of herring, helping provide understanding of which habitats are most suitable for juvenile herring survival. Herring predation by fish and seabirds will be examined in conjunction with the acoustic surveys. The combination of aerial, acoustic and community-based direct capture techniques will provide critical information about areas that may be appropriate for potential restoration efforts.

Rob Campbell, Ph.D. (PWSSC) will be looking at the availability of food, and Shelton Gay (PWSSC) will study herring "nurseries" and collect data for evaluating sites for potential restoration efforts. Paul Hershberger, Ph.D. (U.S. Geological Survey) will look at the role of disease as a factor in preventing recovery.

Thomas Kline, Ph.D. (PWSSC) and Ron Heintz, Ph.D. (NOAA) will look at overwintering "energetics", the growth and energy allocation in overwintering herring. This work has close linkages to the food availability and community involvement portions of the effort.

Herring are an important prey item for many fish, birds, and mammals in Prince William Sound. Understanding the conditions that may limit the recovery of herring requires an

understanding of predation pressure. Mary Anne Bishop, Ph.D. (PWSSC), Sean Powers, Ph.D. (University of South Alabama) and Kathy Kuletz, Ph.D. (USFWS) will conduct research to determine the role of seabird and fish predation on reducing the herring population, and which predators must be accounted for in developing restoration activities.

The PWS Herring Survey is the result of discussions and planning that began in 2006. The draft Integrated Herring Restoration Program plan completed in the fall of 2008 was followed in the spring of 2009 by the Trustee Council's invitation for an integrated program proposal.

In his proposal, Pegau stated the objectives of the integrated herring survey program as: (1) Identify juvenile rearing bays for use in restoration planning; (2) Measure factors that may limit the success of herring recruitment including factors of oceanographic conditions, food availability, disease, overwinter energetics of juvenile herring, and predation; and (3) Provide protocols and recommendations for spatial and temporal coverage of monitoring projects for potential inclusion in the core herring restoration effort.

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