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## RESEARCH PERIOD

2012-2014, 2016-2020

## FUNDING

Exxon Valdez Oil Spill  
Trustee Council

This project is part of the *Herring Research and Monitoring* program. The purpose of this study is to improve predictive models of herring stocks in Prince William Sound through observations and research.



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# TRACKING SEASONAL MOVEMENTS OF ADULT HERRING

## BACKGROUND

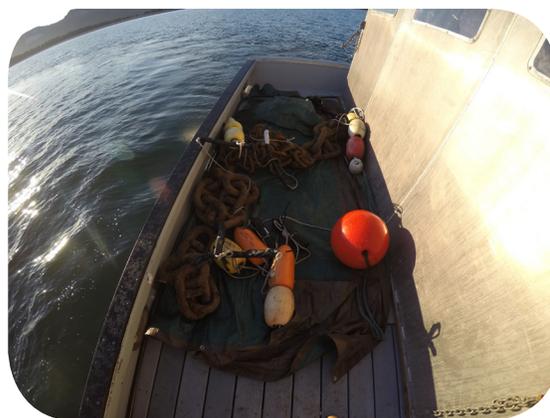
Where herring go after spawning in Prince William Sound (PWS) remains a mystery. A pilot project that started in 2012 demonstrated it was possible to implant acoustic tags in Pacific herring and then detect them on acoustic arrays as they traveled to the entrances of PWS. The acoustic array that existed in PWS during that study did not have enough sensors to determine if fish left PWS once they reached the entrances. In 2016 we were able to purchase additional receivers and tags with a longer battery life for a follow-on research project.

## METHODS

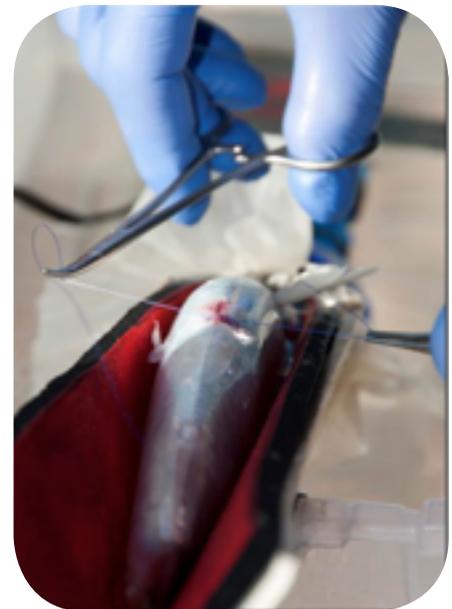
Adult herring are captured using jigs and transferred to a seawater holding tank. Individually, the herring are sedated, measured, and a small acoustic tag is surgically implanted. The tags transmit an underwater sound that can be “heard” by portable hydrophones and groups of acoustic receivers installed in the Sound which “listen” for tagged fish. These receivers are placed near the spawning grounds and the major entrances to PWS. By adding additional receivers at the entrances, we can determine the direction the fish is swimming when it crosses the receiver array.

## WHAT WE WILL LEARN

We have already learned that a large portion of



*Acoustic receivers ready for deployment across the major entrances and passages between PWS and the Gulf of Alaska.*



*Acoustic tag being implanted.*

the herring leave the spawning ground and go to the entrances to PWS. They can travel approximately 150 kilometers over three days. They stay near the entrance through June and then disappear, reappearing again starting in September. Some of the herring stay near the spawning grounds. We are trying to learn if the herring leave PWS during the period they are away from the receiver array. By knowing where the fish are, we can improve the design of studies that examine factors such as predation, food availability and stock genetics that affect herring populations.