



Prince William Sound Herring Survey: Physical Oceanographic Characteristics of Herring Nursery Habitats

PRINCIPAL INVESTIGATOR

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RESEARCH PERIOD

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This project is part of the *Prince William Sound Herring Survey*. The purpose of this comprehensive study is to better understand the factors limiting the recovery of the Pacific herring in Prince William Sound, Alaska.

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BACKGROUND

Prince William Sound herring spend most of their first two years of life in small, sheltered bays and inlets. Their survival is highly influenced by habitat conditions in these inlets, including temperature and salinity, which control factors such as food availability and growth rates. For example, low water temperatures in the winter reduce metabolism, which may help enhance winter survival of juvenile herring by lowering energy demands. In the spring and summer, warmer and less saline surface water creates a stable stratified water column that allows plankton to remain in contact with more nutrients and sunlight to sustain a higher level of production. This can then result in more zooplankton food availability to juvenile herring.

METHODS

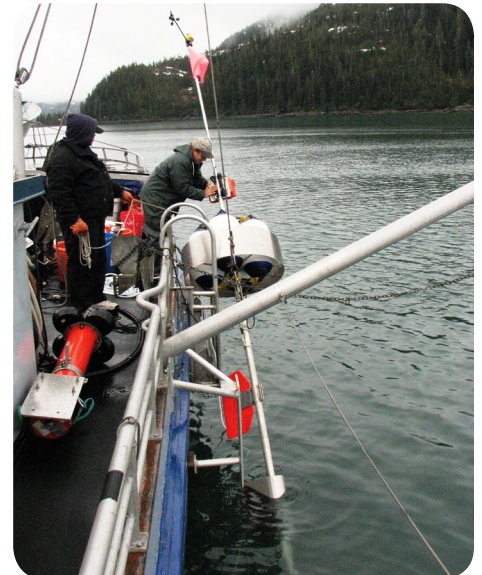
Shelton Gay is installing moorings at the heads of four bays in Prince William Sound (Eaglek, Simpson, Zaikof, and Whale bays) that have been identified as important



rearing areas for juvenile herring. The moorings are equipped with sensors to monitor temperature and salinity at the surface and bottom of the bays. Additional temperature loggers strung at 10 to 20 meter increments between the surface and bottom provide a comprehensive temperature profile of the water column throughout the year.

WHAT WE WILL LEARN

Data from the moorings and observations made during deployments will allow us to track changes in thermal and density stratification in the nursery bays throughout



Shelton Gay deploys a mooring in Whale Bay. Photo by D. Janka.

the year, and identify the fundamental scales of their variation. This will contribute to an understanding of the variation in levels of plankton production and the influence that these variations have on herring survival within the nursery bays.