



Prince William Sound Herring Survey: Exploring Changes in Herring Energetics Over Winter Months

PRINCIPAL INVESTIGATOR

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RESEARCH PERIOD

2009-2013

FUNDING

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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 may succumb to starvation during their first winter. They apparently are unable to accumulate fat reserves sufficient to last the period of relative poor food availability during the long Alaskan winter. Past and current studies show that herring lose much of their accumulated energy between November and March, and suggest that in order to survive winter, herring need a certain level of energy before winter sets in.

METHODS

To better understand over-winter survival, Tom Kline of the Prince William Sound Science Center is looking at the energy content of herring and their main food source, zooplankton; the species of zooplankton available as forage; and the role of oceanic zooplankton subsidies versus resident Prince William Sound zooplankton for herring and their competitors.



Herring are collected from a total of eight sites throughout Prince William Sound using gillnets deployed by researchers and also former commercial herring fishermen (above). Samples are being collected in November and March to allow for comparison of energy levels in herring prior to and just after the depth of winter in Alaska. Zooplankton samples are collected at different depths using a Multinet plankton sampling device (left) and measured for energy content.



WHAT WE WILL LEARN

This component of the multi-faceted juvenile herring project will help improve our understanding of over-winter habitat utilization by age 0 herring. This study is designed to increase our knowledge about the processes driving over-winter mortality in order to suggest better herring restoration options. Better understanding the relationships between herring and their food source will allow resource managers to predict years when herring may do better or worse based on food availability.