



PROJECT PROFILE

Monitoring Humpback Whales

WHO WE ARE

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John Moran under NMFS permit 14122

A humpback whale breaches in Prince William Sound.

WHY ARE WE SAMPLING?

In the years following the *Exxon Valdez* oil spill, Pacific herring populations in Prince William Sound (PWS), Alaska, underwent a dramatic decline and have failed to recover despite the closure of commercial herring fisheries. We are trying to determine if predation on herring by a humpback whale population which is rebounding after the end of commercial whaling has suppressed the recovery of herring populations within the Sound.

WHERE ARE WE SAMPLING?

This project occurred primarily between the months of September to April with three surveys lasting approximately a week, during which we studied humpback whale foraging in PWS. Our survey route begins in Cordova along the eastern edge of PWS, proceeds westward and typically follows a large circle around PWS returning to Cordova.

HOW ARE WE SAMPLING?

To determine if the whales were preventing herring recovery, we first counted how many whales were feeding on herring by photographing and identifying individual whales using the unique black and white pattern on the underside of their tail or flukes. We created a catalog of photographs of all the whales seen in our study and counted the number of whales seen each year. We also

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tracked the movements of each whale and determined what each whale was eating although it was difficult to find out what they were eating when they fed beneath the surface. We used a variety of techniques to identify whale prey. Jigs and nets were used to collect fish and krill near feeding whales, fish finders were useful in distinguishing zooplankton from fish, and a small tissue sample was collected by means of a modified cross-bow to shoot a small stainless steel dart tip the size of a pencil eraser.

During summers, local residents and boat operators provided sighting reports and photo-identifications were contributed by the Gulf Watch Alaska killer whale project. These reports and photos are used to track movement and determine the number of whales in PWS (photo below).

WHAT ARE WE FINDING?

Fall and winter are an important feeding period for humpback whales in PWS. The whales may be eating 15-20% of the spawning herring, which is similar to the quantity removed by the commercial fishery prior to closure. While this level of predation is believed to be sustainable, many questions remain unanswered.



Photo by Molly Zaleski under NMFS permit 14122 issued to J. Straley

Like fingerprints, unique markings and distinctive trailing edges on the flukes allow researchers to recognize individual whales. Download and use our identification catalog for PWS humpbacks at: http://portal.aos.org/gulf-of-alaska.php#metadata/54adceab-74cb-4419-b02c-bacb6d2acb8b/project/file_metadata/d9911170-b39f-403d-9cea-47bb5d94f0bc.



Herring (top) are forage fish that make up a large part of humpback whales' diets in PWS. Krill (bottom) are small shrimp-like animals and are also an important part of a whale's diet.

Humpback whales feed primarily on small forage fishes and krill (photos above). PWS humpback whales are feeding at a higher trophic level than other humpback whales in the Gulf of Alaska. This means that they are eating more fish and less krill than their neighbors.



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