SPLASH

A Comprehensive Study of North Pacific Humpback Whales

Structure of **P**opulations, **L**evels of **A**bundance and **S**tatus of **H**umpback Whales

Information Sheet: Studying Human Impacts

Background Information:

Threats to humpback whales include entanglement in man-made ropes and nets, vessel strikes, degraded water quality, and underwater noise. The SPLASH study will provide useful data to evaluate a number of these human impacts in a more comprehensive manner than has been possible before. Entanglement in fishing gear is known to impede the recovery of some large whale populations. Although previous research has provided insight on the relationship between rates of entanglement and the age, sex, and geographic distribution of humpback whales in the Gulf of Maine, the entanglement rates of the North Pacific stock of humpback whales remain unknown. The broad geographic scope and large sample sizes of photographs obtained during SPLASH will allow the first comparison of the impact of this human activity for an entire ocean basin. In addition, it will allow researchers to examine other human impacts including the incidence of vessel strikes. Biopsy sampling will also provide valuable
information for assessing the health of humpback whales.

Methodology:

Photographs of flanks and tailstocks of whales will be taken in order for researchers to look for evidence of entanglement or vessel strike scarring. To obtain photos, whales will be followed by permitted researchers in small or large survey vessels and photographed with 35-mm SLR or digital cameras equipped with telephoto lenses. Small skin and blubber samples collected with biopsies will provide tissues to test for concentrations of chlorinated hydrocarbons and other lipophilic contaminants. Tissues can also be used to test for biochemical markers of contaminant exposure and other health assays currently being developed.

Sampling Design:

These photographs will be taken simultaneously, as groups of whales are approached from the side for tissue sampling. Since the overall design of SPLASH is to find and photograph whales from all around the North Pacific, this will allow a comparison of the relative risks from human activities in different parts of the Ocean.

Objectives:

1. Examine human impacts including the incidence of entanglement and ship strikes as well as obtain tissues for health assessment including toxicology.
2. Determine the rate of entanglement of humpback whales with evaluation of what regions suffer from the highest rates.
3. Determine the incidence of survived vessel collisions of the North Pacific stock of humpback whales and what areas have the highest incidence.

Key Questions:

What areas are of the highest risk to the North Pacific humpbacks?
Are these human impacts affecting their ability to recover?

Future Applications:

SPLASH research will provide both insight into and a baseline on the incidence of entanglement and vessel strikes on the North Pacific stock of humpback whales. In addition, information from biopsy samples will provide information on contamination exposure and other health risks. The information gained from the study will allow managers to make appropriate decisions related to the long-term conservation of the endangered species. The data will also lead to a better understanding of how human impacts affect humpback whales.

For More Information go to: http://hawaiihumpbackwhale.noaa.gov

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