

**Marine Mammal Research Research Efforts at Makah Fisheries**, presented by Adrienne Akmajian of Makah Fisheries Department

The Makah Marine Mammal Program has focused most of their research efforts over the last few years in the near shore habitat. Their research targets gray whales and sea lions, but they also document any marine mammals encountered.

Makah Fisheries conducts research on Steller and California sea lion population dynamics and life history on a monthly basis throughout the year. They do monthly total counts of each species, and for Steller sea lions they also count the number of adult males, adult females, juveniles, and pups. During surveys they document tagged/branded animals and any injured animals observed. In 2011 they also performed aerial surveys in collaboration with WDFW to count sea lions on haulout sites along the entire Washington and Oregon coast. Adrienne showed example figures of yearly count data for both Steller and California sea lions.

Over the last couple years, the Makah have been collecting sea lion scat for analysis of food habits. The main goals of this research are: to determine the food habitats and usual prey species of the sea lions; to determine whether there is seasonal change in what they are eating; to determine whether there is competition for prey between the two sea lion species; to determine if food habits can be an indicator of habitat health or ecosystem changes; and to determine whether their scat contains harmful algal bloom (HAB) toxins. Adrienne displayed example figures showing the different prey species they found in the sea lion scat and which species were most common, and a figure showing the levels of saxitoxin and domoic acid in Steller sea lion scat samples. This project is nearing completion and the Makah hope to publish the results in the near future.

The Makah Tribe also conducts year round research on gray whales. Winter and spring coastal surveys (1 to 8-10 miles offshore) are done to collect photo identification of individual whales, sighting location, and behavior of migrating whales. Summer and fall nearshore surveys also target photo ID data and also include genetic work via biopsy sampling. Their photo ID data is used for population estimates and patterns of habitat use. The Makah also study gray whale body condition, using photographs to determine a whale's condition and to look at how body condition differs within a feeding season or between years. The goals of the genetics research are to determine if the whale is male or female and to find out how closely related it is to other gray whales feeding on the West Coast or to those feeding in the Arctic. The results from these projects are summarized in several reports presented to the International Whaling Commission.

Other marine mammal research efforts by the Tribe include participating in the Marine Mammal Stranding Network, primarily responding to animals found on the reservation, by documenting the species and location of stranded animals and investigating possible causes of death through necropsies and tissue sampling.