

19 November 2008

By: Tudor Vieru, Science Editor



Type C orcas swimming in the Ross sea
Wikipedia Commons

[Orca Whales Use Sonar to Hunt for Their Favorite Fish](#)

Killer whales are able to pick up the acoustic signatures of the fish

Orcas, like most whales, have the innate ability to use high-frequency sounds in order to detect obstacles or food in the water, or for communicating among themselves over long distances. Now, researchers in Hawaii seem to believe that the large animals can also use this ability to spot their favorite types of fish in the oceans. Even when the chinook salmon is scarce and swims among other species of salmon, it can be easily detected by killer whales.

Scientists at the Hawaii Institute of Marine Biology (HIMB) believe that orcas are capable of sensing the differences between various types of fish by analyzing the distinct signatures each of them gives off, when hit with the clicks of the whales. The swim bladder of the salmon - the organ that helps fish swim - can be likened to a hard surface, in underwater conditions, say oceanologists.

University of Washington scientist, John Horne, argues that the swim bladder of the fish "is responsible for at least 90 percent of the energy that is reflected from the fish. Think of it as a hard wall." "Chinook salmon have a higher concentration of [fat] than any salmon species, and apparently killer whales like that," added HIMB bio-acoustician, Whitlow Au, who is also co-author of the current study.

To test their theories, the researchers recorded emitted clicks (high-frequency sounds) from captive orcas, and played them back against a tank containing several salmon species. They also recorded the acoustic feedback that the swim bladder of every species gave off, and concluded that they were all significantly different, which may explain how killer whales can navigate their way among hundreds of fish, of different species, and only hunt for their favorite dish.

In another interesting study conclusion, the scientists determined that the behavior of the whales is cultural, in that they do not favor chinook salmon because they have an innate preference for these fish, but simply learn to like them, and how to hunt for them, from their parents, as well as from other whales in the group.