

## **Applying Sonar Technology to Pollock Fisheries Management (202)**

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**The Problem:** The behavior of marine fish is a crucial aspect of how they interact with their environment, and how they are captured by fishing nets; therefore it is important to understand fish behavior and the effect it has on the success of the fishing industry. Unfortunately, marine fish species of Alaska live mostly in waters with low light levels and poor visibility making them difficult to observe under natural conditions. Previous fish studies in low light environments used artificial lighting and videography to “see” the fish. These methods may change the natural behavior of the animals. The fish might respond to the lighting rather than behaving “normally.”



*The success of the Alaskan fishing industry is vital to the state's economy*

**The Solution:** Modern pollock trawls rely heavily on fish behavior to achieve a managed capture of pollock with little bycatch or non-pollock species. In 2002, the North Pacific Research Board allocated money to the Alaska Fisheries Science Center for the purchase of DIDSON sonar technology. The DIDSON sonar allowed for the study on fish behavior in trawl nets without the introduction of artificial lighting. Other sonar systems have not shown enough detail to identify individual fish and their behavior. The DIDSON sonar system has overcome these deficiencies and provides scientists with the tool they need to accurately conduct marine research in low light levels. The data gathered with DIDSON sonar is being used in pollock fishing nets to develop escape devices for non-pollock species like salmon.

Salmon caught as pollock fishery bycatch off the coast of Alaska is an area of concern for fisheries management. Using the DIDSON sonar technology, researchers with the National Marine Fisheries Service have developed and tested a device designed to allow salmon to escape from Pollock fishing nets. The development and testing of bycatch reduction devices (BRD's), like this one, have involved cooperative combinations of fishing industry concepts, government research, and private interest research.

**New Frontiers:** The North Pacific Research Board funds a variety of projects to build a clear understanding of the North Pacific, Bering Sea, and Arctic Ocean ecosystems and enable effective fisheries management and the sustainable use of marine resources. Projects, aimed at providing cutting edge technology to researchers, are important to the success of the marine science community. With the potential for innovative applications in many critical fields, this novel technology can also be made available to other North Pacific projects, addressing fish habitat, stock assessment issues, and bycatch reduction.

The North Pacific Research Board seeks to build a clear understanding of the North Pacific, Bering Sea, and Arctic Ocean ecosystems to enable effective fisheries management and the sustainable use of marine resources. [www.nprb.org](http://www.nprb.org)

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