

## Acoustic training of fish

*Adapted from an article in Star Oddi Newsletter, Issue 7, October 2010 (<http://www.star-oddi.com/news/newsletters/issues/2010/10/20/default.aspx>)*

In traditional fisheries, great energy consumption is required to catch fish by trawling, and there is a high risk of catching bycatch when using longline fishing gear. The question arises whether it might be feasible to use knowledge about fish behaviour, social learning and acoustic training to aggregate fish, and entrap them with minimal energy requirement and with the possibility of sorting out and releasing all unwanted bycatch without mortalities.

Fish are particularly sensitive to low-frequency sounds and can detect sounds coming from several kilometers distance. However, the fish do not come to the sound source unless they are rewarded, for example, with food. Bjorn Bjornsson at the Marine Research Institute of Iceland carried out a study find out how long it would take to train cod to come to a specific feeding location as a response to a sound signal. He also looked at how much this training time could be reduced in the presence

of “teachers”. The experiments were carried out in a sea cage in northwest Iceland.

Two feeding platforms were placed inside the cage, one on each side. Pipes were used to deliver the feed from shore to each platform with a seawater pump. An underwater video camera and sound source were placed at each of the feeding platforms. The sound source included a special buoy that was developed by Star-Oddi, a product named FishCall.

The results showed that it took one week to acoustically train 20 naive cod, but less than two days to train 19 naive cod accompanied with one trained cod. It is hypothesized that acoustically trained fish released in the open sea will swim between two feeding stations equipped with FishCall, leading a school of wild fish into a trap and thereby facilitating the capture or ranching of wild fish.



## New Pacific tuna regulations to protect resource *Greater revenues, smaller catch envisioned*

*By Giff Johnson*

*Source: Marianas Variety, 9 November 2010 ([www.mvariety.com](http://www.mvariety.com))*

A new licensing system for longline fishing vessels in the Pacific will go into effect on 1 January 2011, the latest in a series of measures from the Parties to the Nauru Agreement (PNA) to generate more revenue for the islands while cutting catch levels.

Longliners target bigeye tuna, a lucrative catch for the voracious sashimi markets in Asia but one that scientists warn is being heavily overfished. The eight PNA island nations control waters where the bulk of the Pacific’s USD 3 billion annual tuna haul is caught. Until recently, they’ve focused on the purse-seine industry whose fishing vessels use a massive net to catch skipjack tuna that is used for canning.

Starting in January, the PNA countries will no longer sell licenses for individual longline vessels, which use hooks and lines to catch tuna.

Instead, PNA is shifting the boats to a “vessel day scheme” that sells a limited number of days to fishing companies that are based on size and sophistication of vessels.

The new vessel day scheme, or VDS, for longline fishing boats is “aimed at stimulating domestic development of the longline fishery, enhancing PNA’s control of tropical long line fisheries, and is further testament to PNA’s role in ensuring effective conservation and management of this fishery,” said PNA Director Dr Transform Aqorau, who is based in Majuro at the PNA headquarters.

But Aqorau blasted the foreign flagged longline industry, saying that it has failed to provide tuna catch data for the past five years, and also criticized the Western and Central Pacific Fisheries Commission for lack of support for islands attempting to develop their domestic fishing industries.