

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)

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.

A VDS for purse seiners went into effect last year. But this is the first major change in the licensing regime for the longline fleet, which numbers more than 1,000 boats in the region.

Five years ago, PNA agreed with fishing nations to set longline vessel catch limits by country under which the vessels were flagged, a scheme Aqorau said PNA only partially agreed with but accepted because of an urgent need to bring some regulation and sustainability to an out-of-control segment of the Pacific tuna industry.

But part of the agreement was distant-water fishing nations were to provide catch data as part of helping with stock assessments for the long-term viability of the big eye tuna industry. "There has been no effective verification or monitoring of longline bigeye catch limits, Aqorau said. No major longline state has provided the operational catch and effort data that they are obliged to provide and which is essential for verification, and no progress has been made on a catch documentation scheme. This means that the flag-based bigeye catch limits are an ineffective sham."

Aqorau said there has also been a lack of encouragement by foreign fishing interests for the small island developing states attempting to develop their domestic fishing operations.

"PNA leaders have had enough of selling licenses and being observers", said Maurice Brownjohn, PNA's commercial manager. "We need more participation in jobs, manufacturing, and joint ventures." While PNA has made some headway in this, it is meeting resistance from a number of foreign fishing nations wanting to maintain the status quo.

"There have been systematic efforts by the Western and Central Pacific Fisheries Commission Secretariat and the United States to remove the modest benefit provided by an exemption for small island nations to fish for bigeye without proposing an alternative form of recognition of sovereign rights of PNA members to develop their domestic longline fleets, even though the United States has demanded an exemption from bigeye tuna catch cutbacks for its own fleet," Aqorau said.

Unfinished business remains as WCPFC meeting ends

By Anouk Ride - Communications and Media Officer, Pacific Islands Forum Fisheries Agency

Source: FFA Press release (<http://www.ffa.int/node/431>)

When the Western and Central Pacific Fisheries Commission (WCPFC) annual meeting closed on 10 December 2010, Pacific Islands Forum Fishery Agency (FFA) members said there was unfinished business that the Commission needed to address next year. While FFA members made advances on some technical issues, there were no decisions made on the critical issues of overfishing of bigeye and yellowfin tuna, catches of whales and dolphins, and adequate severity of punishment for illegal fishing. Pacific Island countries are the custodians of the last remaining healthy tuna stocks in the world and manage a marine area of 30 million square kilometres, supported with technical advice and services from FFA. FFA members participate at the Western and Central Pacific Fisheries Commission along with other fishing nations (Asian nations, European Union and the United States) to set rules for fishing in the western and central Pacific Ocean. Much of the debate around overfishing of bigeye tuna centred on proposals that would freeze the number of boats at their current levels in a way that cements the rights of foreign fishing nations that come and fish in the Pacific Islands. FFA members instead pushed for measures that would cut the level of fishing of bigeye tuna, while preserving their rights as small island developing states to develop their fisheries. The WCPFC's conservation and management measure on bigeye and yellowfin tuna needs to be renegotiated at the next WCPFC meeting, in December 2011.

FFC Chair Sylvester Pokajam said:

"FFA members are committed to delivering a package of measures in 2011 that would maintain the critical tuna stocks at sustainable levels. FFA members are proud of the leadership role that we played in 2007 and 2008 that led to the eventual adoption of the current conservation and management measure on bigeye and yellowfin tuna that included some world firsts such as cuts to overfishing, closure of some high seas areas, and controls on fish aggregating devices (FADs) and associated catch of juvenile tuna. We urge all WCPFC members to support taking these initiatives forward to develop a measure that will cut overfishing and ensure sustainability of our vital tuna stocks."

Other outcomes of this year's WCPFC include:

- High seas areas: The Cook Islands' proposal for a special management area in the eastern high-seas pocket was accepted by the WCPFC. The PNA¹ proposal to seek WCPFC support for their closures of high-seas areas was rejected, although it will go ahead as a condition of licences for fishing in PNA waters.
- South Pacific albacore: WCPFC members agreed to report about their implementation of the South Pacific albacore conservation and management measure, as proposed by FFA members.