

INTER-AMERICAN TROPICAL TUNA COMMISSION
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MARKING OF FISH-AGGREGATING DEVICES (FADs)

The following letter was sent to Commissioners in August 2003. The staff recommends a system for marking FADs, described in section 2 of the letter and supported by FAO, be adopted for use in the purse-seine fishery in the eastern Pacific. If agreed, the details of a marking system would need to be developed.

**COMISION INTERAMERICANA DEL ATUN TROPICAL
INTER-AMERICAN TROPICAL TUNA COMMISSION**

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27 August 2003
Ref.: 0608-410

To: Commissioners

From: Robin Allen, Director

Re: Measures to reduce purse-seine catches of bigeye tuna

The purpose of this memo is to bring to your attention ongoing research by the staff related to reductions of purse-seine bigeye catches and present a proposal which might provide useful information on the issue. This should be considered in the context of the current situation, in which bigeye tuna in the eastern Pacific Ocean are below the level that can produce the maximum sustained catch required by the Convention, and are likely to remain below that level for the foreseeable future.

In the purse-seine fishery, bigeye is normally taken in sets on FADs, in which the bulk of the catch is usually skipjack. In the past, measures for reducing the purse-seine catch of bigeye tuna have been difficult to implement, at least in part because they caused significant reductions in the catches of skipjack. Unless techniques can be found to circumvent this problem, it will be very difficult to make the reductions now necessary to allow the stock of bigeye to recover to the required level.

Reducing the amount of bigeye in the catch will, of course, reduce the total catch, and any techniques to reduce bigeye catches will probably only be effective if either there are advantages for the fishing industry in adopting them or the alternative is a sanction, such as a closure, if such catches are unacceptably high. With effective incentives, the fishermen may well develop means of reducing the proportion of bigeye in the catch themselves. However, there are no such incentives at the moment, and little effort is being made by fishermen to avoid catching bigeye in purse-seine sets.

1. Research

There are differences in the behavior and distribution of skipjack and bigeye, and it may be possible to make use of those differences to reduce the proportion of bigeye in catches associated with FADs.

Since 2000, the staff has conducted three tagging cruises to the equatorial EPO targeting bigeye associated with moored and drifting FADs. This program is designed primarily to provide estimates of age-specific movement, mortality, and growth rates of bigeye in the EPO for use in stock assessments. However, in addition to tagging, behavioral experiments and observations have been conducted on aggregations of bigeye and skipjack associated with FADs. Acoustic telemetry experiments conducted concurrently on both species in such aggregations, coupled with echosounder and sonar imaging, may provide information useful for excluding or minimizing the catch of bigeye and other species by purse-seine vessels. Funding to support this work came primarily from a special contribution from Japan. However, there is a shortfall in the required annual funding to conduct this work in the future, and we are seeking sources for additional funding to support a tagging cruise in 2004 in order to continue this proposed six-year program through 2007.

In 1997, the staff carried out an analysis of characteristics of fishing gear (nets and FADs) which might have affected the amount of bigeye discarded. The analysis was inconclusive, possibly in part because at the time there were few years of data available for the analysis and because the times and areas in which fishing took place dominated the results. A re-evaluation using a longer data series focusing on bigeye catches will be carried out, and the staff will prepare an updated report on differing proportions of bigeye encountered in purse-seine catches in different areas and times.

2. Data Collection

All the Commission's information about FADs and their role in the fishery comes from records of sets on FADs. There is currently little or no information available about the effectiveness of individual FADs, how long it takes before they attract fish, how many are at sea at any time, or other aspects of the functioning and effect of FADs. These gaps in information hinder any analysis of how the use of FADs affects the fishery and the stocks.

We believe it would be useful to ask the fleet to provide more information about FAD use. A very valuable aid for this would be a requirement to mark every FAD deployed with a unique identifier. Observers and/or captains could then record the identifier of the FAD involved in each set, which would provide information such as the number of FADs effectively involved in the fishery, and the history of catches from a FAD would in turn provide estimates of the time it takes to replenish the aggregations of tunas associated with FADs.

The marking of fishing gear is referred to in several international instruments, notably the FAO Code of Conduct for Responsible Fisheries, Article 8.2.4:

“Fishing gear should be marked in accordance with national legislation in order that the owner of the gear can be identified. Gear marking requirements should take into account uniform and internationally recognizable gear marking systems.”

And the UN Fish Stocks Agreement, Article 18(3) (d),

“Measures to be taken by a State in respect of vessels flying its flag shall include ... requirements for marking of fishing vessels and fishing gear for identification in

accordance with uniform and internationally recognizable vessel and gear marking systems, such as the United Nations Standard Specifications for the Marking and Identification of Fishing Vessels.”

The [FAO Technical Guidelines for Responsible Fisheries - Fishing Operations – 1, Annex III](#), includes the following proposed system for the marking of fishing gear:

6. Fish Aggregating Devices

6.1 The authorization to fish should also include conditions in relation to the deployment of fish aggregating devices and, in addition to carrying a mark to identify ownership of a FAD, the authorization should relate to the:

- a) type of FAD;*
- b) location of the allocated datum geographical position; and,*
- c) the fishing activities permitted at the FAD.*

6.2 The responsibility for recovery of drifting FAD's should lie with the owner.

6.3 The loss of a FAD (drifting or anchored) should be treated in the same way as lost or abandoned fishing gear.

3. Summary

We believe that, given suitable incentives, it will be possible for fishermen to reduce the proportion of bigeye tuna in catches on FADs. As with the reduction of incidental dolphin mortality, this will require a combination of incentives, the skill and motivation of the fishermen, and the collection, investigation, and dissemination of information.