THE PEW ENVIRONMENT GROUP

# RECOMMENDATIONS FROM THE 2ND SYMPOSIUM ON FISH AGGREGATING DEVICES 2011

## HOW RFMOS CAN IMPROVE MANAGEMENT OF THE WORLD'S MOST PROMINENT TUNA FISHING GEAR: FISH AGGREGATING DEVICES (FADs)

In the open ocean, tuna purse-seine operators profit from large pelagic fishes' propensity to aggregate around drifting objects. They do so by fishing around FADs that have been deliberately set adrift for fishing purposes, and which are monitored by electronic tracking beacons. These drifting FADs (dFADs) are tools that have greatly increased catches of tuna around the globe. In fact, global catch of tuna from around dFADs accounts for about 43% of the 4.2 million tonnes of skipjack, bigeye, and yellowfin caught annually. However, the uncontrolled proliferation of dFADs deployed throughout the world's oceans is a major concern of fisheries managers, environmentalists, and fishermen alike due to the impacts of dFAD fisheries on juvenile bigeye and yellowfin tuna, vulnerable sharks and sea turtle species, and the broader marine environment.

In November 2011, over 150 industry, science, and fisheries policy experts from 40 countries attended the International Symposium, "Tuna Fisheries and FADs,"* to discuss the challenges with FAD fisheries, and recommend best practices for responsible management of the world's most prominent tuna fishing gear.

**Symposium conclusions:**

- The unconstrained proliferation of dFADs has resulted in negative impacts on target and non-target species.
- Increased dFAD use has led to large increases in fishing mortality of juvenile yellowfin and bigeye tuna, which contributes to "growth overfishing"— the catching of too many fish before they reach a size at which maximum growth and productivity would be obtained from the stock.
- Bycatch levels for dFAD fisheries are high, and include catches of oceanic sharks, marine turtles, billfish and some pelagic bony fish.

**Their recommendations:**

### 1. DATA GAPS AND NEED FOR ADDITIONAL INFORMATION

Significant data gaps and information needs were noted, which must be addressed to allow for the effective management of global purse seine fisheries. More and higher quality data on dFADs and the fishing operations that use them are necessary for management purposes. Basic data gaps could be addressed by requiring FAD logbook submission to RFMOs.

Basic technical data are needed on:

- the number of dFADs utilized per trip or per boat;
- the total number of actively monitored dFADs in a fishery; and
- the movement and range of dFADs throughout a fishery region.

### 2. COLLABORATIVE RESEARCH NEEDS

Scientists and managers need more understanding and better data on the way dFADs are constructed, deployed and fished by fleets in different oceans. These parameters are highly technical, requiring close collaboration and understanding of the fisheries and should, at minimum, include:

- details of dFAD construction type, materials and depth;
- FAD fishing techniques by fleet and region;
- use of technological adaptations to enhance aggregation (use of light, bait, depth of appendage, color and type of streamers, etc.);
- characterization of dFAD use during trips, i.e. numbers of dFADs set on or available that were previously deployed, appropriated, lost, recovered, or converted (natural debris to FAD); and
- documentation of changes in fishing gear and dFAD fishing practices over time.

Significant data gaps were also recognized on the ecological impacts of dFAD use, including the need to understand the life span and movement of dFADs in relation to tuna and bycatch species.

More and higher quality data on bycatch entanglement, species-specific bycatch levels, discard levels, fate of discards and the broader ecological significance of bycatch/discard removals from the pelagic ecosystem need to be collected and processed.

*http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/FishNews/136/FishNews136_35_Taquet.pdf

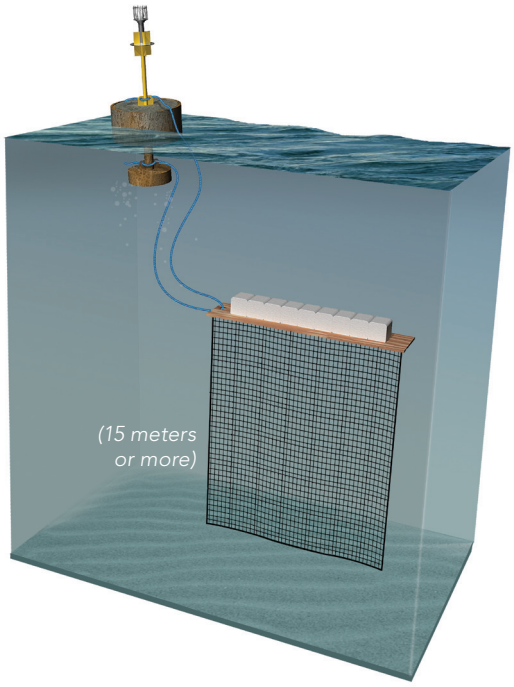
## 3. FAD MANAGEMENT PLANS

The development and adoption of standardized dFAD Management Plans was considered a key element towards effective regional management of dFADs. Currently, efforts are in place to adopt dFAD management plans and some regional fishery management organizations (RFMOs) require this of each member. It was recognized that these should be adopted by all fishing entities and should include:

- reporting requirements on the number and fate of deployed and fished dFADs per trip;
- a ban on the use of dFAD supply vessels;
- clarification on the role of observers in relation to data collection vs. monitoring/control/surveillance; and
- information that identifies the ownership and responsibility of lost or abandoned dFADs.

Management options to maintain or reduce fishing effort by controlling some aspect of the fishery that contributes to total fishing effort, include:

- Limits on the number/type/capacity of vessels in the fishery;
- Limits on the numbers of dFADs deployed (could be per boat, trip, year, fleet, area, etc.);
- Limits on the number of electronic buoys allowed per fleet or fishery, and/or
- Limits on the number of dFAD sets allocated to a fishery sector.
- Mechanisms to reduce vessel or fishing efficiency can also be imposed, such as a limitation on net size/depth, restrictions on the time of set, limit on underwater depth of a dFAD, ban on the use of lights, etc.
- There was strong support to ban dFAD supply vessels that greatly increase the effective effort of a purse seine operation. Time/Area closures can also be applied to a fishery on a permanent, seasonal or variable (time or area) basis.
- Output controls can be used to limit effort by establishing a maximum level of catch, generally through the establishment of a total allowable catch (TAC). TACs could be set for species or sizes of particular concern, i.e. juvenile bigeye tuna, yellowfin < 60 cm. TACs can be vessel-specific or by fleet, region, year, fishery, etc.




DFADs are often constructed of purse seine netting and usually have a panel of net suspended below the raft or float to a depth of 15 meters (50 feet) or more. This webbing can entangle associated animals, including marine turtles, cetaceans and oceanic sharks. Lost or abandoned dFADs become marine debris and can impact coral reefs or other coastal areas.

The global purse seine fleet deploys tens of thousands of dFADs every year. Most of these have satellite tracking devices attached. The data on their whereabouts already exist, but scientists do not have access to those data.

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