

GUIDANCE ON REPORTING ON FADs IN ACCORDANCE WITH IATTC RESOLUTION C-17-02

Document prepared jointly by the IATTC Scientific Staff
and the *Ad hoc* Permanent Working Group on FADs

1. BACKGROUND

During the 92nd meeting of the IATTC in July 2017, a new resolution ([C-17-02](#)) on conservation measures for tropical tunas was adopted that includes new measures for the fishery on fish-aggregating devices (FADs), including limits on the number of active¹ FADs per vessel (see Appendix 1). Paragraph 11 of the resolution requires CPCs to “report, or require their vessels to report, daily information on all active FADs to the Secretariat”, at monthly intervals, “with a time delay of at least 60 days, but no longer than 90 days”, and paragraph 12 tasks the IATTC scientific staff and the *Ad Hoc* Permanent Working Group on FADs with developing, “at the latest by 30 November 2017, guidance on the reporting of FAD data in accordance with Paragraphs 10 and 11 of this Resolution, including the format and specific data to be reported”.

The IATTC is unique among regional fisheries management organizations for tuna in having a permanent scientific and technical staff to collect and analyze data. Additionally, in its role as Secretariat of the Agreement on the International Dolphin Conservation Program (AIDCP), it manages, together with several national programs, an observer program that covers 100% of fishing trips by large² purse-seine vessels operating in the eastern Pacific Ocean (EPO) and collects detailed data on fishing operations, including on the characteristics and deployments of FADs. Historically, this has enabled the staff to provide independent information for the CPCs to verify compliance with IATTC resolutions that pertain to the operation of the purse-seine fishery. However, some of the analyses necessary to independently verify compliance with Resolution C-17-02 require data that presently are not available to AIDCP observers.

2. DATA REQUIRED FOR INDEPENDENT MONITORING OF COMPLIANCE

To allow for independent verification of compliance with paragraphs 8-10 of Resolution C-17-02, the staff would need to receive high-resolution data directly from the FAD tracking services. High-resolution information would be required for both the temporal (frequency of the provided FAD locations) and spatial (precision of provided FAD locations) components of the data. The temporal data provided should allow the drift speed of the FAD to be estimated at multiple time points per day, and the spatial data should allow comparisons with position data collected by on-board observers.

With these data, an attempt could be made to independently determine whether a FAD was activated aboard the vessel and then deployed, as stipulated in paragraphs 9-10 of the resolution. However, without these data, it will be impossible to independently verify compliance with all the requirements of the resolution. Unfortunately, experience in other oceans suggests that obtaining high-resolution data directly from FAD tracking services will be problematic, because of proprietary concerns and/or costs.

¹ Paragraph 10 of the resolution defines as “active” a FAD that is deployed at sea and is transmitting its location, and is being tracked by the vessel, its owner, or operator, and paragraph 9 requires that FAD be activated only aboard the vessel.

² Defined as of carrying capacity greater than 363 tonnes (IATTC Class 6)

Although obtaining high-resolution data directly from FAD tracking services is essential for independent verification of compliance with the paragraphs of the resolution stated above, as well as for research in support of stock assessments and management of the FAD fishery, the Working Group and the staff concluded that, in the short term, other options could be explored. Therefore, the remainder of this document outlines data to be provided in order for the staff to act as an intermediary, with the sole task of compiling data from CPCs. The flow chart in Appendix 2 illustrates the process of FAD data provision by CPCs.

3. NATURE AND FORMAT OF DATA TO BE PROVIDED TO CPCs

There are four main companies that supply satellite-transmitting buoys to the purse-seine fleet: Marine Instruments, Satlink, Thalos, and Zunibal. Each buoy has a unique alphanumeric identifier code, provided by the manufacturer, which is associated with a single vessel. There should be a binding agreement between the data provider and the national authority as to the veracity and completeness of the data to be provided.

Following Santiago *et al.* (2017)³, the basic information used to monitor the number of active FADs (as defined in the resolution) should be provided by the FAD tracking services directly to the designated verification body of each CPC (and/or to the IATTC staff if so requested by the CPC), on a monthly basis, with a two-month delay; *i.e.* the data received in month *n* corresponds to month *n-2*. This of course assumes, as the resolution does, that all FADs deployed by all purse-seine vessels in the EPO are monitored through satellite buoys.

Data should be received in csv files named “X-YYYY-MM-ZZZZZZ.csv” where X is the code of the buoy manufacturer (M, S, T, Z, for Marine Instruments, Satlink, Thalos, and Zunibal, respectively), YYYY is the year, MM the month, and ZZZZZZ the purse-seine vessel’s IATTC registry number. Each file should contain the daily records of all the active FADs managed by each individual vessel in month MM of year YYYY. The information included in these csv files should be: date [YYYY/MM/DD], time [hh:mm], buoy identifier code, latitude and longitude [expressed in degrees and minutes in decimal values] and speed [knots].

In order to identify records that do not correspond to active FADs, as defined in the resolution, the data must be filtered to eliminate:

- a. Records outside the EPO (from position data).
- b. Records on land (from position⁴ and FAD speed (= 0 knots) data).
- c. Records of FADs aboard the vessel before deployment (from FAD speed data (> 4 knots) and/or VMS information).

Similarly, and with the aim of collecting supplementary information on a daily basis on FADs deactivated by the vessels, the FAD tracking services should also provide additional files named “X-YYYY-MM-ZZZZZZ-D.csv”, with information on FADs deactivated and removed from the list of data transmission to the vessel. These files contain the same fields as the file mentioned above, but with only the values recorded at the time of deactivation.

³ Santiago J., H. Murua, J. López and I. Krug, 2017. Monitoring the number of active FADs used by the Spanish and associated purse seine fleet in the IOTC and ICCAT convention areas. *Joint t-RFMO FAD Working Group meeting*, Doc. No. j-FAD_13/2017

⁴ <http://www.naturalearthdata.com/downloads/10m-physical-vectors/10m-land/>

4. FORMAT AND SPECIFIC DATA TO BE REPORTED TO THE SECRETARIAT

As stated above, if the staff is to act as an intermediary, with the sole task of compiling information, it should be provided with the following daily data.

4.1. Daily information

Variable	Description
Date	YYYY/MM/DD
Vessel	IATTC registry number
No. active	Number of active FADs on that date

Below is an example of the daily information to be provided:

Date	Vessel	No. active
2018/04/01	9003421	345
2018/04/02	9003421	342
2018/04/03	9003421	340
...
2018/04/01	9003440	200
2018/04/02	9003440	198
2018/04/03	9003440	203
....
2018/04/01	9016222	84
2018/04/02	9016222	83
2018/04/03	9016222	86
...

4.2. Monthly summaries

Although monthly summaries with spatial information and type of buoy are not required by the staff in its role as intermediary, such information could be useful in the future to analyze the impact of FAD fisheries.

Variable	Description
Year	Year of activity
Month	Month of activity
Vessel	IATTC registry number
Lat	Latitude of the 1-degree square grid [square center]
Lon	Longitude of the 1-degree square grid [square center]
No. deployed	Total number of active FADs deployed in the 1-degree square
No. deactivated	Total number of beacons deactivated in the 1-degree square
Average no. active FADs	Average number of active FADs belonging to the vessel over the month (by summing up the total number of active beacons recorded per day over the entire month and dividing by the total number of days)

Below is an example of the monthly summaries to be provided:

Year	Month	Vessel	Lat	Lon	No. deployed	No. deactivated	Average no. active FADs
2018	1	9003421	10.5	-132.5	0	3	1.93
2018	1	9003421	9.5	-132.5	2	0	0.84
2018	1	9003421	8.5	-132.5	6	1	2.32
...
2018	1	9003440	20.5	-120.5	10	2	0.17
2018	1	9003440	19.5	-120.5	4	0	1.27
2018	1	9003440	8.5	-120.5	3	1	3.17
...
2018	1	9016222	10.5	-91.5	0	1	0.00
2018	1	9016222	9.5	-91.5	4	0	0.24
2018	1	9016222	8.5	-91.5	12	2	1.27

Appendix 1

MEASURES FOR THE FISHERY ON FISH-AGGREGATING DEVICES [Resolution [C-17-02](#)]

8. CPCs shall ensure that purse-seine vessels flying their flag have no more than the following number of fish-aggregating devices (FADs), as defined in Resolution C-16-01, active at any one time:
 - Class 6 (1,200 m³ and greater): 450 FADs
 - Class 6 (< 1,200 m³): 300 FADs
 - Class 4-5: 120 FADs
 - Class 1-3: 70 FADs
9. A FAD shall be activated exclusively onboard a purse-seine vessel.
10. For the purposes of this resolution, a FAD is considered active when it:
 - a. is deployed at sea; and
 - b. starts transmitting its location and is being tracked by the vessel, its owner, or operator.
11. In order to support the monitoring of compliance with the limitation established in Paragraph 8, and the work of the IATTC scientific staff in analyzing the impact of FAD fisheries, while protecting business confidential data, CPCs shall report, or require their vessels to report, daily information on all active FADs to the Secretariat, in accordance with guidance developed under Paragraph 12, with reports at monthly intervals submitted with a time delay of at least 60 days, but no longer than 90 days.
12. The IATTC scientific staff and *Ad Hoc* Permanent Working Group on FADs shall develop, at the latest by 30 November 2017, guidance on the reporting of FAD data in accordance with Paragraphs 10 and 11 of this resolution, including the format and specific data to be reported.
13. Each CPC shall ensure that:
 - a. its purse-seine vessels do not deploy FADs during a period of 15 days prior to the start of the selected closure period;
 - b. all its Class-6 purse-seine vessels recover within 15 days prior to the start of the closure period a number of FADs equal to the number of FADs set upon during that same period.
14. The Scientific Advisory Committee and the *Ad hoc* Permanent Working Group on FADs shall review the progress and results of the implementation of the FAD provisions contained in this Resolution and make recommendations to the Commission, as appropriate.
15. To reduce the entanglement of sharks, sea turtles or any other species, as of 1 January 2019 CPCs shall ensure that the design and deployment of FADs shall be based on the principles set out in paragraphs 1 and 2 of Annex II of Resolution C-16-01.

Appendix 2

Flow chart of the process of reporting of FAD data by CPCs in accordance with Resolution [C-17-02](#)

