

IATTC Ad hoc Permanent Working Group on FADs

7th Meeting

La Jolla (CA)- 12-13 May 2023



Agenda

Friday	1	Opening of the meeting	1	Apertura de la reunión		
	2	Adoption of the agenda	2	Adopción de la agenda		
	3	Review of recommendations from the 6th meeting of the FAD Working Group	3	Revisión de las recomendaciones de la 6ª reunión del Grupo de Trabajo sobre Plantados		
	4	Advances on biodegradable FADs in the EPO Biodegradable FADs: analysis of prototype performance from buoy data The performance on the JellyFAD in the EPO [Moreno et al.] Clarification on the monitoring of obligations regarding the size of the mesh used in FADs	4	Avances sobre plantados biodegradables en el OPO Plantados biodegradables: análisis del desempeño de prototipos a partir de datos de boyas Desempeño de los plantados JellyFAD en el OPO [Moreno et al.] Aclaración sobre el control de las obligaciones relativas al tamaño de la malla utilizada en los DCP		
		5		FAD data reporting established in Resolution C-21-04	5	Notificación de datos de plantados establecida en la resolución C-21-04
	6	FAD fishery indicators The fishery on FADs in the EPO Updated biomass indicators from echosounder buoys	6	Indicadores de la pesquería sobre plantados La pesquería sobre plantados en el OPO Indicadores de biomasa actualizados de boyas con ecosonda		
Saturday		The Poseidon model [Vertpre et al.]		El modelo Poseidon [Vertpre et al.]		
	7	Initiatives to reduce impacts of FADs fishing Guidelines to reduce the impact of FADs on sea turtles. [Moreno et al.] Predicted origins of drifting Fish Aggregating Devices (dFADs) as a source of plastic marine debris into environmentally sensitive habitats of Hawaii. [Royer et al.] Preliminary analyses of the regional database of stranded drifting FADs in the Pacific Ocean [Escalle et al.]	7	Iniciativas para reducir el impacto de la pesquería sobre plantados Directrices para reducir el impacto de los plantados en las tortugas marinas [Moreno et al.] Predicción del origen de los dispositivos agregadores de peces a la deriva como fuente de desechos marinos plásticos en hábitats ambientalmente sensibles de Hawái [Royer et al.] Análisis preliminares de la base de datos regional de plantados a la deriva varados en el Océano Pacífico [Escalle et al.]		
				A novel FAD tracking device tested in the Pacific Ocean. [Moreno et al.] Acoustic discrimination of juvenile yellowfin tuna in an offshore cage [Sobradillo et al.] ISSF Workshop on different approaches to limit the number of FADs in the oceans [Restrepo et al.]		Prueba de un nuevo dispositivo de seguimiento de plantados en el Océano Pacífico [Moreno et al.] Discriminación acústica de aleta amarilla juvenil en una jaula en alta mar [Sobradillo et al.] Taller de la ISSF sobre diferentes enfoques para limitar el número de plantados en los océanos [Restrepo et al.]
		8		Latest scientific information on FADs and developments in other tRFMO	8	Información científica reciente sobre plantados y avances en otras OROP atuneras
	9	Conclusions and recommendations	9	Conclusiones y recomendaciones		
10	Other business	10	Otros asuntos			
11	Adjournment	11	Clausura			

RESOLUTION C-15-03

COLLECTION AND ANALYSES OF DATA ON FISH-AGGREGATING DEVICES

Section 5. *Ad Hoc* Working Group on FADs

15. An *ad hoc* Working Group on FADs (Working Group) is established.
16. This Working Group shall be multi-sectorial, involving various stakeholders such as scientists, fishery managers, fishing industry representatives, administrators, representatives of non-governmental organizations, and fishers. Expressions of interest to participate in the Working Group shall be provided to the Director no later than 1 October 2015.
17. To the highest degree possible, the Working Group shall conduct its work electronically or, if convenient and cost-effective, in targeted face to face meetings that take place in conjunction with other Commission meetings.
18. The Working Group shall present an initial report of its findings at the 2017 meeting of the SAC.
19. The Terms of Reference of the Working Group are those indicated in Annex III.
20. The Working Group shall seek input from other similar working groups on FAD management established in other tuna regional fisheries management organizations (tuna-RFMOs).
21. The IATTC, at its 2017 annual meeting, will review the progress and outcomes of the Working Group and will decide on the necessity for its continuation.
22. This Resolution replaces Resolution C-13-04.

3. Review of recommendations from the 6th meeting of the FAD Working Group

RESOLUTION C-19-01

AMENDMENT TO RESOLUTION C-18-05 ON THE COLLECTION AND ANALYSES OF DATA ON FISH-AGGREGATING DEVICES

Anexo III

The objectives of the Working Group are the following:

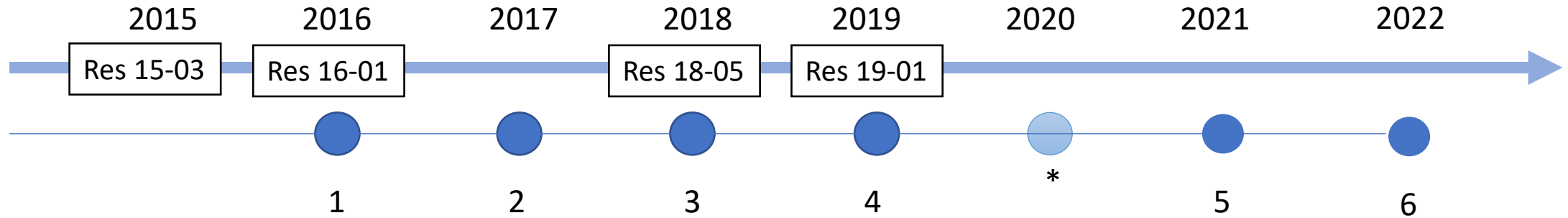
1. **Collect and compile information on FADs in the EPO**, including but not limited to data collected by the IATTC and reports prepared by the scientific staff of the IATTC;
2. **Review the FAD data collection requirements** established in this Resolution to assess the need for revision;
3. Develop data **reporting formats and definitions of terms related to FAD fishing** (e.g. biodegradable FADs, non-entangling FADs, etc.), to implement obligations under this Resolution, in cooperation with the scientific staff, to be submitted to the Commission for consideration;
4. Compile information regarding **developments on FADs in other tuna RFMOs**;
5. Compile information regarding developments on the **latest scientific information on FADs**, including information on non-entangling FADs, and identify priority areas for research;
6. Prepare **annual reports for the SAC**, including specific **recommendations**, as appropriate; and

Identify and review possible **FAD management measures**, in coordination with the scientific staff and the SAC, and make **recommendations to the Commission**, as appropriate.

3. Review of recommendations from the 6th meeting of the FAD Working Group



Ad hoc working group on FADs



Thematic areas

Data collection & gaps	X	X	X	X
Research & scientific inf.	X	X	X	X
Management measures	X	X		
Definitions		X	X	X
Indicators				X
Fishery status & impacts				X

X	X
X	
	X
	X
X	X

3. Review of recommendations from the 6th meeting of the FAD Working Group

Recommendations of the FAD WG

7th Meeting of the FAD WG

2016

The Group did not issue recommendations since it is not within its mandate, as currently stipulated in Resolution C-15-03

2017

1. **Data on FADs:** ... to set minimum data requirements and standards for the collection of the data specified in Resolution C-16-01.
2. **FAD database:** ...develop a common database for the management of FAD data collected pursuant to Resolution C-16-01.
3. **Workshops on FAD data:** ...CPCs, IATTC staff and staff from national observer programs should organize training workshops ...
4. **Collection of data on FADs:** ...the Commission consider the appropriate levels of observer coverage (using both observers and electronic monitoring systems) in various fleet categories with the goal of improving FAD-related data collection.
5. **Definitions of FAD-related terms:** ... develop definitions for a suite of terms related to FAD fishing operations, within the context of Resolution C-16-01, taking into consideration the definitions used by other tuna RFMOs, as appropriate.
6. **FAD research:** ... support the research plan prepared by the Ad Hoc Working Group (Appendix 1) and work to identify priority areas for research.
7. **Biodegradable FADs:** The SAC recommends that future work on the development of biodegradable FADs take into account the social, economic and environmental sustainability of the materials evaluated.
8. **Funding for FAD research:** ... development of work plans and budgets for priority FADs research, and identify possible sources of alternative funding for initiatives that cannot be covered by the regular budget of the IATTC.
9. **Future actions on FADs:** ... develop a planning roadmap for future actions to be taken in support of progress on the key areas of action identified by the Joint Tuna-RFMO FADs Working Group Meeting.
10. **FAD questionnaire:** The SAC recommends that the Commission circulate an additional request to the FAD Working Group members, asking them to complete the questionnaire designed to inform its work.

2019

1. That the Commission directs the IATTC staff, in collaboration with the Working Group on FADs, to **further investigate CPCs' difficulties with the FAD data reporting provisions** set forth in resolutions C-18-05 and C-17-02 and develops recommendations for improved reporting.
2. That the Commission adopt specific provisions to require CPCs to **provide information regarding the brand of buoys that each of its vessels use** so that the IATTC staff can identify if the information provided by data buoy providers under Resolution C-17-02 is complete.
4. That Resolution C-18-05 be amended so that **vessel owners and operators are not required to provide data already collected by observers**. However, vessel captains should be responsible for providing the observer with the make, model and serial number of the buoys, when the observer is not capable of obtaining this information, when the captain has the capability of providing this information.
5. That the IATTC staff give **priority to the training of operators to comply with the data provisions** on the resolutions and that the staff include this as a constant plan of activities and that new technologies are considered, like videoconferences, or seeking the collaboration with the IATTC's field office staff, and that this is done, preferably, during the fishery closures.
6. The Commission should consider **clarifying the terms of reference for the FAD WG**, including the process for making WG recommendations to the Commission

2018

1. **FAD data collection form** 9/2016 and its instructions and the observer program's Flotsam Information Record will be modified to include new fields that will enable FADs to be tracked over time
 2. The **new form for FAD data collection** related to the requirements of Resolution C-16-01 will be the default form to be used by the purse-seine fleet operating in the EPO.
 3. **Coordination with the working groups on FADs** of other tuna RFMOs to propose the new FAD data form, with a view to developing a possible harmonized form to be used by captains or operators...
 4. ... **organize training workshops** that will train vessel captains, crew and government authorities to properly fill out FAD data forms related to the requirements of Resolution C-16-01.
 5. ... **development of a common database** to be used by the IATTC staff for the management of FAD data collected pursuant to Resolution C-16-01.
 6. **CPCs should report, or ask their vessels to report, FAD data from fishing trips** required by Resolution C-16-01 to the IATTC staff as soon as possible, and at most with a 4-month delay...
 7. **CPCs shall provide to the IATTC staff the same daily raw buoy data** received by original users (i.e. vessels, fishing companies) in line with the research needs defined in the Strategic Science Plan to be adopted by the Commission.
 8. **The guidelines for submission of FAD data** pursuant to Resolution C-17-02 (Annex 1) will be the reference for complying with the provisions of paragraph 11 of the resolution on a provisional basis
 9. The staff shall provide two email addresses to **centralize the submission** of FAD data required by Resolutions C-16-01 and C-17-02.
 10. **Incorporate experts from buoy providers** as members of the ad hoc Permanent Working Group on FADs, to participate in the intersessional work of the group ...
 11. **Organize a workshop on buoy technology** and use on the margins of the Commission meeting in August 2018, with the active participation of experts from buoy provider companies.
 12. ...**continue developing definitions** intersessionally for a set of terms related to FAD fishing operations.
 13. **Continue the project on the implementation of biodegradable FADs** in the EPO that has been initiated by the IATTC scientific staff. The Working Group also recommends that the IATTC staff develop a robust experimental design...
 14. The following **research initiatives** should be undertaken as an absolute priority....
1. **consider the set of terms listed in Annex 1 as interim draft definitions** related to FAD fishing operations. Some of these terms reflect the IATTC staff's definitions used for data analysis, such as those for floating objects, and none of the terms are intended to prejudice interpretations of existing resolutions or domestic regulations.
 2. **assign the following tasks as priority matters for the intersessional period** before the 2019 Commission meeting.
 - Capacity-building [C-16-01 and C-17-02]
 - Data gaps – improvement of data collection related to C-16-01 and C-17-02
 - Definitions
 - Indicators of FAD fishing
 - Follow the research activities related to FAD fisheries
 - Participate in the joint t-RFMO FAD working group and the small technical joint t-RFMO FAD working group
 - Develop an appropriate confidentiality framework

3. Review of recommendations from the 6th meeting of the FAD Working Group

2021

1. The Commission to adopt the set of terms listed in Annex 1 as interim draft definitions related to FAD fishing operations.
2a. CPCs to provide the forms on FAD interactions from each fishing trip that is made without an observer aboard, to the IATTC staff as soon as possible after the trip terminates...
2b. The Secretariat to contact CPCs no later than 80 days before the SAC to check the status of incomplete data submissions regarding the requirements of the Resolution C-19- 01.
2c. CPCs to require their vessels to record data related to interactions with FADs of purse-seine vessels without an observer aboard using exclusively the standard form developed by the IATTC staff
2d. CPCs to provide to the IATTC staff the same raw buoy data received by original users (i.e. vessels, fishing companies), including both trajectories and acoustic biomass information.
2e. The Commission scientific staff and CPCs to continue exploring technologies to mark and read automatically and remotely marking identification to improve FAD/buoy marking and to solve errors on data collection.
2f. The Commission and its members to reactivate the mechanisms of cooperation between the various tuna RFMOs regarding FADs, including in particular the Joint tuna- RFMO FAD Working Group .
3. The Commission to consider additional options -- along with active FAD limits -- to lower the number of FADs in the water , such as clarifying controls on remote activation and deactivation and controls on numbers of deployed FADs.

3. Review of recommendations from the 6th meeting of the FAD Working Group

RESOLUTION C-21-04

CONSERVATION MEASURES FOR TROPICAL TUNAS IN THE EASTERN PACIFIC OCEAN DURING 2022-2024

- 20. ... data fields indicated in **Annex II**. The reports shall be submitted at monthly intervals with a time delay of at least 60 days, but no longer than 90 days after the deactivation. The FAD Working Group, based on advice from the IATTC scientific staff, shall provide to the SAC and the Commission **advice on any required adjustments**
- 22. The *Ad Hoc* Working Group on FADs shall recommend to the SAC for its consideration at its meeting in 2022 at the latest, **advice to further develop the use of biodegradable materials in FADs**, including a **definition** and criteria for biodegradable FADs, or FADs with designs and materials that pose less risk to the environment.
- 23. The IATTC scientific staff and the Working Group on FADs will also, to the extent possible, **review the variation in levels of aggregation, mortality, change in fishing strategy, and durability of FADs built with biodegradable materials** or with designs and materials that present less risk for the environment. These results will also be presented at the 13th meeting of the Scientific Advisory Committee and the 99th meeting of the Commission to determine adjustments to the active FAD limits for vessels switching to biodegradable FADs.
- 24.The IATTC scientific staff and Working Group on FADs shall recommend to the Scientific Advisory Committee and the Commission for consideration at its 2022 meeting, a **protocol for the use by third parties of the data provided** pursuant to this paragraph, in protection of the confidentiality of the data.
- 27. 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.

3. Review of recommendations from the 6th meeting of the FAD Working Group

2022

<p>1.1 Encourage harmonization across t-RFMOs, as much as possible, the definition of biodegradable FADs, the guidelines and timeline for their construction and implementation, as well as data collection priorities.</p>
<p>1.2 Consider the following definition for Biodegradable: Non-synthetic materials and/or bio-based alternatives that are consistent with international standards² for materials that are biodegradable in marine environments. The components resulting from the degradation of these materials should not be damaging to the marine and coastal ecosystems or include heavy metals or plastics in their composition.</p>
<p>1.3 Further large-scale sea trials are needed on an ongoing basis to refine important practical/technical aspects of full implementation of biodegradable FADs (e.g., durability, designs, material availability and acquisition). Ideally, these trials should be monitored and conducted in collaboration with scientists.</p>
<p>1.4. Fishers supported by shipowners should continue trailing bioFAD designs in a continued effort, deploying systematically a percentage of their FADs made of biodegradable materials from 2023 on.</p>
<p>1.5. Results of biodegradable trials at sea should be made available to the FAD WG.</p>
<p>1.6. A gradual, stepwise process for the implementation of fully biodegradable FADs should be considered based on the current state of the art of materials available and on the result of field tests.</p>
<p>1.7. The different categories to be considered in this gradual implementation process are (These definitions do not apply to electronic buoys attached to FADs to track them):</p> <ul style="list-style-type: none"> - Category I. The FAD is made of 100% biodegradable materials. - Category II. The FAD is made of 100% biodegradable materials except for plastic-based flotation components (e.g., plastic buoys, foam, purse-seine corks). - Category III. The subsurface part of the FAD is made of 100% biodegradable materials, whereas the surface part and any flotation components contain non-biodegradable materials (e.g., synthetic raffia, metallic frame, plastic floats, nylon ropes). - Category IV. The subsurface part of the FAD contains non-biodegradable materials, whereas the surface part is made of 100% biodegradable materials, except for, possibly, flotation components. - Category V. The surface and subsurface parts of the FAD contain non-biodegradable materials. <p>These categories are preliminary and will be examined by the IATTC scientific staff and presented to the Commission.</p>

3. Review of recommendations from the 6th meeting of the FAD Working Group

2022

1.8. In the gradual process of biodegradable FAD implementation, designs should try to reduce, as much as possible, the amount of material used and the non-biodegradable fraction used in their construction
1.9. Revise, as needed, IATTC data collection methods and tools, including fisheries observer data, so that the gradual implementation of biodegradable FADs in the EPO can be effectively monitored
1.10. In order to encourage the replacement of current FADs with biodegradable FADs, it is recommended that motivating incentives for the industry be established, without affecting fishing effort.
2.1. Consider the following definition for Non-entangling FAD: “A FAD that does not include any netting materials for any part of the FAD including both the surface structure (e.g., raft) and subsurface structure (e.g., tail).”
3.1. In case a CPC has difficulty reporting the full data described in Annex II and III of Resolution C-21-04 (i.e., deactivations and remote reactivations), report these data, in a temporary basis (i.e., 2022), using a simplified form prepared by the IATTC staff, which will be posted to the Commission web site when available. The simplified form shall contain the following elements: Date, buoy code, and reason for reactivation or deactivation.
3.2. Encourage the CPCs to provide to the IATTC staff the historic, raw buoy data collected prior to January 1, 2022 and received by original users (i.e., vessels, fishing companies), including both trajectories and acoustic information.

- 2023
[?]
1. The Commission to consider the **definitions of non-entangling FADs and biodegradable FADs** proposed by the scientific staff, the SAC and the Working Group on FADs.
 2. The Commission to consider a **timeline for the stepwise incorporation of biodegradable FADs** in the EPO, considering the categories proposed by the scientific staff, the SAC and the Working Group on FADs.

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1. Que la Comisión considere las **definiciones de plantado no enmallante y plantado biodegradable** propuestas por el personal científico, el CCA y el Grupo de trabajo sobre plantados.
 2. Que la Comisión considere un **calendario para la incorporación gradual de los plantados biodegradables en el OPO**, considerando las categorías propuestas por el personal científico, el CCA y el Grupo de Trabajo sobre plantados.

COM100: "To task the FAD WG to consider, and possibly recommend, **clarifications or revisions to Resolution C-19-01 to facilitate the monitoring of mesh size obligations, underwater part design or responsibilities of vessels that have opportunistic interactions with non-compliant FADs.**"

Principles for design and deployment of FADs

1. The floating or raft part (flat or rolled structure) of the FAD can be covered or not. If it is covered with mesh net, it must have a stretched mesh size less than 7 cm and the mesh net must be well wrapped around the whole raft so that there is no loose netting hanging below the FAD

											Total
2020	722	11412	314	56	257	1406	10	1128	931	99	16,335
2021	12	1852	--	--	--	277	--	528	383	6	3,058
2022	2	668	142	--	1	79	--	1	199	2	1,094

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Criterios para el diseño y uso de plantados

1. El componente flotante o balsa (estructura plana o enrollada) del plantado puede estar cubierto o no. Si está cubierto con malla de red, debe tener una luz de malla estirada de menos de 7 cm y la malla debe estar bien estirada alrededor de la balsa entera para que no haya malla suelta colgada debajo del plantado cuando sea sembrado.

2. El diseño del componente subacuático o colgante (rabo) del plantado debería evitar el uso de malla de red. Si se usa malla de red, debe estar atada de la forma más apretada factible en forma de chorizo o ser de luz de malla estirada de menos de 7 cm con un peso al extremo.

4c. Clarification on the monitoring of obligations regarding the size of the mesh used in FADs

	IATTC C-19-01	ICCAT Rec 22-01	IOTC Res 23-02	WCPFC CMM-2021-01
Non entangling	<p>Raft: if covered with mesh, stretched mesh size less <7cm and well wrapped.</p> <p>Tail: if mesh is used, tightly tied as "sausages" or stretched mesh size (<7cm).</p> <p>Annex II of [C-19-01]</p>	<p>Raft: only covered with material implying minimum risk of entangling.</p> <p>Sub-surface components should be exclusively composed of non-entangling material (e.g. ropes or canvas). [Annex V]</p>	<p>a) the use of mesh materials shall be prohibited for any part of a DFAD;</p> <p>b) only non-entangling material and designs shall be used; and</p> <p>c) the sub-surface structure shall be limited to a length of 50 meters.</p>	<p>The use of mesh net (or any entangling material) shall be prohibited for any part of a FAD (2024)</p>

4c. Clarification on the monitoring of obligations regarding the size of the mesh used in FADs