INTER-AMERICAN TROPICAL TUNA COMMISSION

104th MEETING

Lisbon, Portugal, 31
August–4 September 2026

PROPOSAL IATTC-104 A-5

SUBMITTED BY ECUADOR

CONSERVATION MEASURES FOR TROPICAL TUNAS IN THE EASTERN PACIFIC OCEAN DURING 2027, 2028 AND 2029[1]

The Inter-American Tropical Tuna Commission (IATTC), gathered ~~on the occasion of~~on its 104th Meeting:

Aware of its responsibility for the scientific study of tunas and tuna-like species in its Convention Area and for formulating recommendations to its Members and Cooperating Non-Members (CPCs) with regard to these resources;

Recognizing that the potential production from the resource can be reduced if fishing effort is excessive;

Concerned that the capacity of the purse-seine fleets fishing for tunas in the Convention Area continues to increase;

~~Taking into account~~Considering the best scientific information available, reflected in the IATTC staff's recommendations, and the precautionary approach; and

Recalling the need to take into account the special circumstances and requirements of the developing countries of the region, particularly the coastal countries, as recognized in the Antigua Convention, in particular in its Preamble and Article XXIII, paragraph 1;

Recalling that Article VII, paragraph 1(c), of the Antigua Convention provides that the Commission shall "adopt measures that are based on the best scientific evidence available to ensure the long-term conservation and sustainable use of the fish stocks covered by this Convention and to maintain or restore the populations of harvested species at levels of abundance which can produce the maximum sustainable yield…";

Recognizing the importance of the Integrated Port Sampling Program as a data-collection tool for providing the best scientific estimates available of bigeye tuna catch;

~~Taking into account~~Considering the recommendations adopted by the Scientific Advisory Committee at its 17th meeting (La Jolla, California, USA, 8–12 June 2026) and the scientific staff recommendations contained in document SAC-17-10;

Recognizing that the Management Strategy Evaluation for bigeye tuna (SAC-17-05) confirmed that the conservation measures established in this Resolution for 2026 are effective in supporting the high-level objective of the Antigua Convention to maintain or restore stocks at levels capable of producing maximum sustainable yield, and that the scientific prerequisites contemplated in paragraph 1 of this Resolution have therefore been met;

Noting that the three tropical tuna stocks in the Eastern Pacific Ocean are in healthy condition, with low probabilities of exceeding the target reference points, and that the substantial improvement in the status of

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the bigeye tuna stock is largely attributable to the individual vessel catch threshold established in paragraph 4;

Aware that, in accordance with the scientific advice received, any modification of the conservation measures must be made gradually and incrementally and within a Management Procedure framework, and not through direct application of the interim harvest control rule established in Resolution C-23-06;

Agrees:

To apply in the Convention Area the conservation and management measures for tropical tuna set out below, and to request that the IATTC staff monitor the fishing activities of the respective CPCs' flag vessels relative to this commitment, and report on such activities at each annual meeting of the Commission.

~~1.~~ These measures are applicable from 00:00 hours on 1 January 2027 and will expire at 24:00 hours on 31 December 2029~~, except for the second closure period referred to in paragraph 3, which extends until 24:00 hours on 28 December 2029~~.

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Note: the previously posted text contained some typographical errors that have been corrected.

[1] The condition contemplated in paragraph 1 of Resolution C-25-01 regarding extension of its period of validity was deemed fulfilled in 2026, based on the advice of the scientific staff (SAC-17-10) and the recommendations of the Scientific Advisory Committee adopted at its 17th meeting.

These measures are applicable to all CPCs' purse-seine vessels of IATTC capacity classes 4 to 6 (182 metric tons carrying capacity or more), and to all their longline vessels over 24 meters length overall, that fish for yellowfin, bigeye and skipjack tunas in the Convention Area, except for the provisions of paragraph 41, which are applicable to all active purse-seine vessels on the IATTC Regional Vessel Register (RVR).

~~2.~~1. Pole-and-line, troll and sportfishing vessels, purse-seine vessels of IATTC capacity classes 1 to 3 (181 metric tons carrying capacity or less), and longline vessels less than 24 meters length overall are not subject to these measures, except those related to the management of fish-aggregating devices (FADs).

MEASURES FOR PURSE-SEINE FLEETS

~~3.~~2. All purse-seine vessels covered by these measures must stop fishing in the Convention Area for a period of 50 days in each year covered by this Resolution.

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a. For class 5 and 6 purse-seine vessels, these closures shall be observed in one of two periods, as follows: from 00:00 hours on 6 August to 24:00 hours on 24 September, or from 00:00 hours on 9 November to 24:00 hours on 28 December.

b. Class 4 purse-seine vessels shall observe a closure of 50 consecutive days, at any time of the year, at the discretion of the vessel owner, who shall notify the flag CPC in writing, and the latter shall notify the Director of the IATTC, of the start date of the closure at least 30 days in advance. These provisions for class 4 vessels shall apply on an exceptional basis during the period of validity of this Resolution, and the IATTC scientific staff shall evaluate their effects for review by the SAC and a corresponding recommendation to the Commission.

~~4.~~3. For the years 2027, 2028 and 2029, CPCs shall ensure that vessels that exceeded during the previous year the annual catch limit of 1,200 metric tons of bigeye tuna shall increase during the following year by 10 additional days the closure period established in paragraph 3 of this Resolution.

If during this same period a vessel exceeds the annual catch limit of 1,500 metric tons of bigeye tuna, it shall increase the closure by 13 days; if it exceeds the annual catch limit of 1,800 metric tons, it shall increase its closure by 16 days; if it exceeds the annual catch limit of 2,100 metric tons, it shall increase its closure by 19 days; and if it exceeds the annual catch limit of 2,400 metric tons, it shall increase its closure by 22 days, in addition to the closure stipulated in paragraph 3 of this Resolution.

For class 5 and 6 purse-seine vessels, the additional days of closure pursuant to this paragraph shall be added, as appropriate, to the beginning of the closure for vessels observing the first period and to the end of the closure for vessels observing the second period, so that the closure of the first period always ends on 8 October and the second period always begins on 9 November of each year. For class 4 purse-seine vessels, the additional days of closure shall be added consecutively to the chosen closure days.

The IATTC Secretariat shall send to the CPCs by 1 March of each year the names of the vessels that must observe additional closure days in accordance with this paragraph.

~~5.~~4. Each CPC shall strengthen the system for sampling and monitoring tuna catches by purse-seine vessels through, inter alia, the use of onboard observer data, logbooks, port sampling and information from tuna processing facilities, in order to facilitate the

monitoring of catches by vessel owners and captains and better compliance with the objectives of this Resolution.

~~6.~~5. CPCs shall be responsible for compiling and submitting the final data on annual catches of bigeye tuna made by individual vessels flying their flag during the current year, and such data shall be reported to the Secretariat no later than 15 February of the following year.

~~7.~~6. Recognizing the scientific value of the Integrated Port Sampling Program (IPSP), described in document SAC-16-05, the program shall be implemented and remain active with the necessary budgetary support from the Commission for the duration of this Resolution. In 2027, the scientific staff shall present to the SAC a comparison of the protocols and possible changes in the data between the traditional port-sampling program and the IPSP, together with an analysis of their implications for the data used in stock assessments.

~~8.~~7. For 2027 and 2028, as soon as possible after the conclusion of each trip, the IATTC staff shall transmit to the flag CPC its best estimate of the vessel's catch for that trip, together with an account of the data and methodology used to arrive at the estimate. The flag CPC shall then determine the amount of bigeye catch to be attributed to a vessel for a given trip pursuant to paragraph 11.

~~9.~~8. Sampling in ports and processing plants may prioritize vessels that reached an average annual catch of more than five hundred (500) metric tons of bigeye tuna between 2017 and 2019, according to the data received by the Secretariat.

~~10.~~9. CPCs shall ensure that tuna processing-company data for vessels flying their flag, for all fish caught in the IATTC Convention Area, are provided to their fisheries authorities in real time (i.e., within 10 days from the first day of unloading through the last day of grading by size), with a copy to the IATTC staff.

~~11.~~10. CPCs shall be responsible for estimating the bigeye tuna catch of each vessel flying their flag at the end of each trip, to the extent that one or more data sources are available to the CPC in the days immediately following conclusion of the trip and unloading (e.g., observer estimates, logbook data, well sampling, cannery data). The duty to estimate the vessel's catch shall be the responsibility of the flag CPC.

~~12.~~11. If the status quo conditions, represented by the average annual catches of bigeye tuna during the three-year period 2017–2019 (66,906 metric tons—Best Scientific Estimate [BSE]), are not offset by this measure, or taking into account the results of updated bigeye stock assessments, including the 2026 update (SAC-17-03), the IATTC scientific staff shall propose to the Commission an update of its recommendations for these conservation measures, including, inter alia, increases in the number of closure days.

~~13.~~12. If implementation of this measure has positive effects demonstrating an improvement in the status of the bigeye tuna stock, the scientific staff shall analyze the conservation measures in force and submit for the Commission's consideration new measures that consider, inter alia, reducing the number of closure days or eliminating the "corralito." Any reduction in conservation measures shall be implemented gradually and incrementally and within the framework of the Management Procedure adopted by the Commission pursuant to paragraph 44, and not through direct application of the interim harvest control rule established in Resolution C-23-06.

~~14.~~13. ~~The fishery for yellowfin, bigeye and skipjack tuna by purse seine vessels within the area between 96°W and 110°W and between 4°N and 3°S, known as the "corralito," illustrated in Figure 1, shall be closed from 00:00 hours on 9 October to 24:00 hours on 8 November.~~

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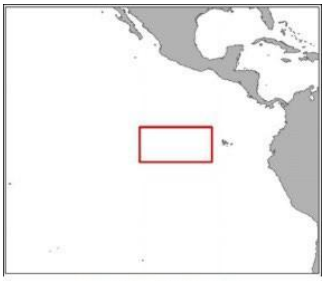

Figura 1. Área de veda

~~15.~~14. a. For each of the closure periods stipulated for class 5 and 6 purse-seine vessels in paragraph 3 of this Resolution, each CPC shall notify the Director, by 15 July, of the names of all purse-seine vessels that will observe that closure period, also identifying those that must observe additional closure days pursuant to paragraph 4 of this Resolution.

b. Every vessel that fishes, regardless of the flag under which it operates or whether it changes flag or the jurisdiction of the CPC under which it fishes during the year, must observe the closure period to which it was committed.

~~16.~~15. a. If a force majeure[1] event renders a class 5 or 6 vessel[2] unable to proceed to sea outside one of the two closure periods for at least 75 continuous days, a CPC may request an exemption for a reduced closure period as provided in paragraph 3 and subparagraph 16b. If an exemption is granted, the vessel shall be required to observe a reduced closure period as set out below in subparagraph 16e. A request for exemption due to force majeure shall be sent by a CPC to the Secretariat within 30 calendar days following the end of the period of inactivity due to force majeure. Requests submitted after this deadline shall not be considered.

b. In addition to the exemption request, the CPC shall send the evidence necessary to demonstrate that the vessel did not proceed to sea during that continuous period, the closure period observed by the vessel, and that the facts on which the exemption request is based were due to force majeure.

c. After timely receipt of both the request and the supporting information required in subparagraph b, the Director shall immediately send the request and evidence electronically to the other CPCs for their consideration, duly coded to maintain the anonymity of the vessel's name, flag and owner.

d. The request shall be considered accepted unless an IATTC Member formally objects within 15 calendar days of receipt of the request, in which case the Secretariat shall immediately notify all CPCs of the objection.

e. If the exemption is accepted:

i. the vessel shall observe a reduced closure period of 40 consecutive days in the same year in which the force ~~majeure event~~majeure occurred, during one of the two periods prescribed in paragraph 3, to be notified immediately to the Director by the CPC; or

ii. if the vessel has already observed a closure period prescribed in paragraph 3 during the same year in which the force majeure event occurred, it shall observe a reduced closure period of 40 consecutive days in the following year, during one of the two periods prescribed in paragraph 3, to be notified to the Director by the CPC no later than 15 July of that year.

iii. vessels benefiting from the exemption must carry an observer from the International

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Dolphin Conservation Program (IDCP) on board.

iv. The exemption shall apply only to the 64-day closure period stipulated in paragraph 3 of this Resolution, and not to the additional periods stipulated in paragraph 4.

~~17.~~16. Each CPC shall, for purse-seine fisheries:

a. before the date on which the closure enters into force, take the legal and administrative measures necessary to implement it;

b. inform all interested parties in its tuna industry of the closure;

c. inform the Director that these steps have been taken;
ensure that, at the time a closure period begins and throughout its duration, all purse-seine vessels fishing for yellowfin, bigeye and/or skipjack tuna that are committed to observing that closure period and that fly its flag, or operate under its jurisdiction, in the Antigua Convention Area are in port, except that vessels carrying an observer from the International Dolphin Conservation Program (IDCP) on board may remain at sea, provided they do not make sets or deploy, visit, check or retrieve FADs in the Convention Area. The only other exception shall be that vessels carrying an observer authorized pursuant to the AIDCP may leave port during the closure, provided they do not fish in the Convention Area.

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[1] For the purposes of paragraph 16, only cases of vessels disabled in the course of fishing operations by mechanical and/or structural failure, fire or explosion shall be considered force majeure.

[2] This exemption applies to vessels of fleets that observe either of the closure periods prescribed in paragraph 3.

MEASURES FOR FISHING ON FISH-AGGREGATING DEVICES

~~18.~~17. For the purposes of this Resolution, the definitions contained in Annex I shall apply.

~~19.~~18. ~~CPCs shall~~CPCs ensure that purse-seine vessels flying their flag have no more than the following numbers of fish-aggregating devices (FADs), as defined in Annex I (consistent with Resolution C-19-01), active at any one time:

Class 6 (1,200 m³ and greater): 340 FADs
Class 6 (< 1,200 m³): 210 FADs
Classes 4–5: 85 FADs
Classes 1–3: 50 FADs

~~20.~~19. A FAD shall be activated exclusively onboard a purse-seine vessel.

~~21.~~20. For the purposes of this Resolution, a FAD is considered active when it:

a. has been deployed at sea; and
b. activation of the satellite buoy has occurred, and the satellite buoy is transmitting its location and is being tracked by the vessel, its owner or operator.

~~22.~~21. Deactivation of a satellite buoy attached to a FAD may occur only in the following circumstances: complete loss of signal reception; appropriation of a FAD by a third party; temporarily during a selected closure period; or when it is outside:

- the area between meridians 150°W and 100°W and parallels 8°N and 10°S;
- the area between meridian 100°W and the coast of the American continent and parallels 5°N and 15°S;

or upon transfer of ownership. CPCs shall report, or require their vessels to report, deactivations to the Secretariat using the specific data fields indicated in Annex II. Reports shall be submitted at monthly intervals with a time delay of at least 60 days, but no more than 90 days after deactivation. The FAD Working Group, based on advice from the IATTC scientific staff, shall provide the SAC and the Commission with advice on any necessary adjustments.

~~23.~~22. Remote reactivation of a satellite buoy at sea shall occur only in the following circumstances: to assist in the recovery of a stranded FAD; following temporary deactivation during the closure period; or upon transfer of ownership while the FAD is at sea. CPCs shall report, or require their vessels to report, any remote reactivation to the Secretariat using the specific data fields indicated in Annex III. Reports shall be submitted at monthly intervals with a time delay of at least 60 days, but no more than 90 days after reactivation.

~~24.~~23. The IATTC scientific staff and the Working Group on FADs shall also, to the extent possible, review variation in aggregation levels, mortality, changes in fishing strategy, and the durability of FADs constructed with biodegradable materials or with designs and materials that pose less risk to the environment.

~~25.~~24. To support the work of the IATTC scientific staff in analyzing the impact of FAD fisheries, while protecting the confidentiality of commercial data, CPCs shall report, or require their vessels to report, daily information on all active FADs to the Secretariat. The information provided shall be identical in form and content to the raw satellite-buoy data provided by buoy manufacturers to the original users (i.e., vessels and vessel managers), as specified in Annex IV of this Resolution. Reports shall be submitted at monthly intervals with a time delay of at least 60 days, but no more than 90 days.

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~~26.~~25. To provide the IATTC scientific staff with valuable information to support its work, as agreed for 2023, CPCs shall continue to report, or require their vessels to report to the IATTC, using the format developed by the IATTC staff and approved by the Commission, complete VMS data for all vessels required to carry VMS pursuant to Resolution C-14-02 (amended by C-23-11). The information reported to the Secretariat shall include, at a minimum, the information specified in paragraphs 2(a) and 2(b) of that Resolution. Where the flag CPC requires more frequent data-transmission rates, CPCs are encouraged to submit higher-frequency VMS data. Reports shall be submitted every two months with a time delay of no more than 90 days. Data collected pursuant to this paragraph shall be treated in accordance with Resolution C-15-07 on rules and procedures for data confidentiality.

~~27.~~26. Each CPC shall ensure that:

a. its purse-seine vessels do not deploy FADs during the 15 days prior to the start of the selected closure period;

b. all its class 6 purse-seine vessels ~~recover,~~recover within 15 days prior to the start of the closure period, a number of FADs equal to the number of FADs on which they made sets during that same period.

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~~28.~~27. a. In accordance with Resolution C-23-04, to reduce the entanglement of sharks, marine turtles or any other species, CPCs shall ensure that, as required from 1 January 2025, the design and construction of any FAD to be deployed or redeployed (i.e., placed in the water) in the IATTC area of competence complies with the following specifications in accordance with Annex I of that Resolution:

i. the use of mesh netting in any part of a FAD is prohibited;
ii. only non-entangling FAD materials and designs shall be used.

b. CPCs, with the support of the Commission and its staff and in consultation with all relevant stakeholders, as appropriate, shall ensure that the design and use of biodegradable non-entangling FADs comply with Resolution C-23-04 and its Annex I.

~~29.~~28. The Scientific Advisory Committee and the Ad Hoc Permanent Working Group on FADs shall review the progress and results of implementation of the FAD provisions contained in this Resolution and shall make recommendations to the Commission, as appropriate.

MEASURES FOR THE LONGLINE FISHERY

~~30.~~29. China, Japan, Korea, the United States and Chinese Taipei undertake to ensure that total annual catches of bigeye tuna by their longline vessels in the Convention Area during the period of validity of this Resolution do not exceed 46,861 metric tons, distributed at the following levels:

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Country	Metric tons
China	2,131
Japan	27,516
Korea	10,155
Chinese Taipei	6,422
United States	638

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~~31.~~30. All other CPCs undertake to ensure that total annual catches of bigeye tuna by their longline vessels in the Convention Area do not exceed the greater of 500 metric tons or their respective catches in 2001[3],[4]. CPCs whose annual catches exceed 500 metric tons shall provide monthly catch reports to the Director.

~~32.~~31. A CPC referred to in paragraph 31 may make a single transfer of a portion of its bigeye tuna catch limit to other CPCs that also have a bigeye tuna catch limit specified in paragraph 30, provided that the total transferred by any CPC does not exceed 30% of its catch limit. Such transfers may not be made to retroactively cover another CPC's catch-limit overage. Both CPCs involved in the transfer shall, separately or jointly, notify the Director 10 days in advance of the intended transfer. The notification shall specify the tonnage to be transferred. The Director shall promptly notify the Commission of the transfer.

~~33.~~32. The CPC receiving the transfer shall be responsible for managing the transferred catch limit, including monitoring and monthly catch reporting. A CPC receiving a one-time transfer of a bigeye tuna catch limit shall not retransfer that catch limit to another CPC. The amount of bigeye tuna transferred shall be considered by the Commission without prejudice for the purpose of establishing future limits or allocations.

OTHER PROVISIONS

~~34.~~33. Landings and transshipments of tuna or tuna products positively identified as originating from fishing activities that contravene these measures are prohibited. The Director is requested to provide relevant information to CPCs to assist them in this regard.

~~35.~~34. Each CPC shall submit to the Director, by 15 July, a national report on its updated national compliance scheme and the actions taken to implement these measures, including any controls imposed on its fleets and any monitoring, control and compliance measures established to ensure compliance with those controls.

~~36.~~35. To evaluate progress toward the objectives of these measures, the IATTC scientific staff shall analyze the effects on the stocks of the application of these measures and previous conservation and management measures and shall propose, if necessary, appropriate measures for subsequent years.

~~37.~~36. Subject to the availability of the necessary financial resources, the Director is requested to continue experiments with sorting grids for juvenile tunas and other non-target fish species in the purse seines of vessels fishing on FADs and on unassociated tunas, by developing an experimental protocol that includes parameters for the materials to be used for the grids and methods for their construction, installation and use. The Director shall also specify the methods and format for collecting the scientific data to be used to analyze the performance of such grids. This is without prejudice to each CPC's ability to conduct its own experimental sorting-grid programs and submit the results to the Director.

~~38.~~37. Renew the requirement that every purse-seine vessel retain on board and land all bigeye, skipjack and yellowfin tuna caught, except fish considered unfit for human consumption for reasons other than size. The only exception shall be the final set of a fishing trip, when there is insufficient well space available to accommodate all the tuna caught in that set.

[3] The Commission recognizes that France, in its capacity as a coastal State, is developing a tuna longline fleet from its overseas territories located in the Convention Area.

[4] The Commission recognizes that Peru, in its capacity as a coastal State, will develop a tuna longline fleet that will operate in strict compliance with IATTC rules and provisions and in accordance with IATTC resolutions.

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~~39.~~38. The IATTC shall continue efforts to promote compatibility between the conservation and management measures adopted by the IATTC and the WCPFC in terms of their objectives and effectiveness, especially in the overlap area, including through frequent consultations with the WCPFC, in order to maintain comprehensive knowledge of conservation and management measures directed at yellowfin, bigeye and other tunas, and of the scientific basis and effectiveness of those measures, and to inform their respective members thereof.

~~40.~~39. The IATTC shall support strengthening the Regional Tuna Tagging Program (RTTP), with broad spatial coverage that permits estimation of growth, natural mortality and abundance; while maintaining priority for tropical tunas, it shall also include swordfish and sharks to the extent possible (see proposal E.4.b in SAC-16 INF-E). In addition, the RTTP shall collaborate and coordinate with opportunistic tagging programs conducted by CPCs and relevant stakeholders, for example by providing data on drifting FADs during closure periods, with appropriate safeguards to protect confidential commercial information. The IATTC staff shall use these data to continue prioritizing research on yellowfin tuna stock structure.

~~41.~~40. Funding for ~~the RTTP~~RTTP, in the amount of US$1.8 million, shall be provided through one-time contributions paid by all purse-seine vessels listed as active on the IATTC RVR at any time during calendar year 2026~~7.~~ calculation provided by the Secretariat. Each CPC is directed to take the necessary actions to ensure full compliance with this obligation. ~~All such vessels shall pay an amount equal to US$6.16 per cubic meter of well capacity. Payment for these vessels shall be made by 30 June 2027, or, for vessels entering the RVR after 15 January 2027, before the vessel is included in the RVR, together with its AIDCP vessel assessment~~. If voluntary contributions are obtained in support of the RTTP, that amount shall be deducted from US$1.8 million and the payment rate per cubic meter shall be recalculated. Any surplus generated by the inclusion of new vessels in the Register shall be reported promptly by the Secretariat to the CPCs in writing and may be used only for research projects to strengthen stock-assessment studies.

~~42.~~41. Subject to the availability of the necessary financial resources, the IATTC scientific staff shall continue research on the relationship between the depth of tuna-vessel nets and bigeye tuna catches, in order to determine its effect on increased fishing mortality in each area of operation. The results of this work shall be presented at the 2027 meeting of the IATTC SAC for analysis and recommendations to the Commission.

~~43.~~42. In 2028, the results of these measures shall be evaluated in the context of the stock-assessment results and changes in the level of active capacity in the purse-seine fleet. Depending on the conclusions reached by the IATTC scientific staff in consultation with the Scientific Advisory Committee, and based on that evaluation, the Commission shall take additional action, including a substantial extension of closure days for purse-seine vessels or equivalent measures such as catch limits.

~~44.~~43. The IATTC shall continue efforts to develop harvest strategies for tropical tunas. Having completed the Management Strategy Evaluation for bigeye tuna in 2026 (SAC-17-05), the Commission shall continue the process of adopting a Management Procedure for that species, taking into account the harvest control rules identified through that evaluation as meeting the management objectives of safety, stock status, stability, yield, effort and abundance, as well as the results of the multispecies assessment for tropical tunas (SAC-17 INF-Q). The scientific staff, in consultation with the Ad Hoc Working Group to Strengthen the Dialogue among Scientists, Managers and Other Stakeholders on Management Strategy Evaluation and with the SAC, shall continue developing and implementing Management Procedures for tropical tuna stocks in the Eastern Pacific Ocean, including further refinement of management objectives, performance indicators, harvest control rules and monitoring strategies.

44. The scientific staff shall incorporate longline-fishery management measures into the Management Strategy Evaluation and shall fully evaluate the impacts and trade-offs among the different fisheries, so as to ensure balance among them in selecting a Management Procedure for tropical tunas.

45. The scientific staff shall develop Exceptional Circumstances criteria applicable to the Management

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Procedure for tropical tunas, including, inter alia, situations involving explicit or implicit weakening of management of the individual vessel catch threshold established in paragraph 4, higher estimated fishing mortality, lower spawning biomass, or reduced catch per unit of effort in the longline fisheries across the range of uncertainty in the Management Strategy Evaluation, and shall present them to the SAC for consideration.

46. The scientific staff shall empirically quantify the relationship between fishing mortality and closure days, considering purse-seine set type, management of the individual vessel catch threshold and recruitment variability, in order to strengthen the technical basis for converting scientific advice into closure days, and shall present the results to the SAC.

47. The scientific staff shall incorporate environmental and climate variables into stock assessments and the Management Strategy Evaluation for tropical tunas, evaluate the relative effects of climate or environmental change and management measures, and present to the Commission an analysis of the likely effects of the El Niño–Southern Oscillation (ENSO), the results of which shall be considered in any possible review of conservation measures.

~~45.~~48. Except in cases of force majeure prescribed in paragraph 16, no exemption shall be permitted from the closure periods notified to the Director pursuant to paragraph 15a, or from the fishing effort of the respective CPCs' purse-seine fleets.

Annex I —

Definitions

For the purposes of this Resolution, the following definitions shall apply:

a. Fish-aggregating device (FAD) (consistent with Resolution C-19-01): Floating or submerged objects, drifting or anchored, placed at sea and/or tracked by vessels, including through the use of radio buoys and/or satellite buoys, for the purpose of aggregating tuna species for purse-seine fishing operations.
b. Satellite buoy: A buoy that uses a satellite network service to indicate its geographical position and that meets the requirement in Resolution C-19-01 to be clearly marked with a unique identification code.
c. Activation of a satellite buoy: The act of initializing the network service to receive the position of the satellite buoy. Activation is performed by the buoy provider at the request of the vessel owner or operator. Following activation, the vessel owner pays for the communication service. The buoy may or may not be transmitting, depending on whether it has been switched on.
d. Deactivation of a satellite buoy: The act of cancelling the network service used to receive the position of the satellite buoy. Deactivation is performed by the buoy provider at the request of the vessel owner or operator. Following deactivation, payment for the communication service ceases and the buoy stops transmitting.
e. Reactivation of a satellite buoy: The act of reinitializing the network service to transmit the position of a satellite buoy after its deactivation. The procedure is the same as that followed to activate a satellite buoy.
f. Loss of signal: A situation in which, without any intervention by the owner/operator, the owner is unable to locate a satellite buoy on a monitoring device. The principal causes of signal loss are recovery of the buoy by another vessel or person (at sea or on land), sinking of the FAD, and buoy failure.

Annex II —

Deactivation of satellite buoys

CPCs shall report, or require their vessels to report, any deactivation of a satellite buoy to the Secretariat using the following data fields from the buoy's first communication after activation:

- date [YYYY/MM/DD],
- time [hh:mm],
- buoy identification code,
- latitude [expressed in degrees and minutes in decimal values],
- longitude [expressed in degrees and minutes in decimal values],
- speed [knots], and
- reason for deactivation: loss of signal, stolen FAD, stranding, temporary deactivation during closure periods, transfer of ownership, location outside the areas specified in paragraph 22 of this Resolution, other (specify).

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Annex III —
Reactivation of satellite buoys

CPCs shall report, or require their vessels to report, any remote reactivation of a satellite buoy to the Secretariat using the following data fields from the buoy's last communication before deactivation:

- date [YYYY/MM/DD],
- time [hh:mm],
- buoy identification code,
- latitude [expressed in degrees and minutes in decimal values],
- longitude [expressed in degrees and minutes in decimal values],
- speed [knots], and
- reason for remote reactivation: recovery following signal loss, following temporary deactivation during the closure period, or transfer of ownership while the FAD is at sea, other (specify).

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Annex IV

Format of the information to be requested from satellite-buoy manufacturers

a) Daily information on buoy position

The following data fields shall be included for all buoys and positions recorded during the day, in csv files specific to each fishing company:

- date [dd-mm-yyyy],
- time [hh.mm],
- unique buoy identification code [the format varies by manufacturer, but is always an alphanumeric code],
- IMO number of the vessel associated with the buoy and receiving the information,
- latitude [expressed in decimal degrees],
- longitude [expressed in decimal degrees],
- speed [knots],
- echo-sounder = on/off.

In addition, whenever possible, the following information corresponding to each transmission shall be included:

- Water temperature
- Buoy in the water (only for buoys with sensors that identify whether the buoy is in the water)
- Activation and deactivation dates
- Buoy transmission status or mode (e.g., immediate information, recovery, etc.)

The data shall be received in csv files named "X-YYYY-MM-ZZZZZZZ.csv", where X is the buoy manufacturer code (M, S and Z for Marine Instruments, Satlink and Zunibal, respectively), YYYY is the year, MM the month, and ZZZZZZZ the name of the fishing company. A single csv file shall be prepared per company, year and month.

b) b) Information on acoustic records

The following data fields shall be included for all buoys and acoustic records recorded daily, in csv files specific to each fishing company:

- ZUNIBAL: company, unique buoy identifier code, date (date, time), type (position or sounder), latitude, longitude, speed, drift, total

- SATLINK: Company, unique buoy identifier code, Message Descriptor (MD), date (date, time), latitude, longitude, battery charge (bat), temp, speed, drift, layer1, layer2, layer3, layer4, layer5, layer6, layer7, layer8, layer9, layer10, sum, max, mag1, mag2, mag3, mag4, mag5, mag6, mag7, mag8.

- MARINE INSTRUMENTS: company, unique buoy identifier code, TransmissionDate, TransmissionHour, lat, lon, mode, light, poll, temperature, vcc, SounderDate, gain, layers, layerbits, maxdepth, sd1, sd2, sd3, sd4, sd5, sd6, sd7, sd8, sd9, sd10, sd11, sd13, sd12, sd14, sd15, sd16, sd17, sd18, sd19, sd20, sd21, sd22, sd23, sd24, sd25, sd26, sd27, sd28, sd29, sd30, sd31, sd32, sd33, sd34, sd35, sd36, sd37, sd38, sd39, sd40, sd41, sd42, sd43, sd44, sd45, sd346, sd47, sd48, sd49, sd50.

The data shall be received in csv files named "X-YYYY-MM-ZZZZZZZ-Sounder.csv", where X is the buoy manufacturer code (M, S and Z for Marine Instruments, Satlink and Zunibal, respectively), YYYY is the year, MM the month, and ZZZZZZZ the name of the fishing company. A single csv file shall be prepared per company, year and month.

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