INTER-AMERICAN TROPICAL TUNA COMMISSION

SCIENTIFIC ADVISORY COMMITTEE

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IATTC STRATEGIC SCIENCE PLAN, 2026-2030

PROPOSED OUTLINE

This document presents the staff's proposed outline for the IATTC Strategic Science Plan (SSP) for 2026-2030. Its main purpose is to guide the discussions with WGs, SAC and the Commission regarding the planning of the next SSP.

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SUMMARY

This document presents the staff's proposed outline of the IATTC Strategic Science Plan (SSP) for 2026–2030. Its main purpose is to guide the discussions with WGs, SAC and the Commission regarding the planning of the next SSP. The outline defines the strategic goals and targets identified by the staff to guide the scientific research necessary to fulfill the mandate of the Antigua Convention and to address requirements under various IATTC resolutions and Commission requests.

Six workplans are proposed under the SSP 2026–2030 (see Section C):

1. Stock Assessment and Management Strategy Evaluation (MSE) Workplan
2. Shark Research Workplan

3. Workplan for the Fish Aggregating Device (FAD) Fishery
4. Climate Change Workplan
5. Operationalization of the Ecosystem Approach to Fisheries Management (EAFM) Workplan
6. Best Handling and Release Practices (BHRP) Workplan

A. OUTLINE OF THE IATTC STRATEGIC SCIENCE PLAN

As in the previous SSP, the staff's research activities are classified into seven main areas of research, called *Themes.* In addition to better accommodating a strategic planning approach, this structure is intended to foster stronger collaboration among the different programs in the Scientific Research Division (recommendation 17 of the 2016 IATTC Performance Review), with researchers from different programs contributing to activities under a common *Theme*. The seven *Themes,* the strategic pillars of the SSP, are the following:

1. Data collection for scientific support of management
2. Life history studies for scientific support of management
3. Sustainable fisheries
4. Ecological impacts of fishing: assessment and mitigation
5. Interactions among the environment, ecosystem, and fisheries
6. Knowledge transfer and capacity building
7. Scientific excellence

Each *Theme* is divided into strategic *Goals*, and the principal tasks that will be carried out to achieve a particular goal within the SSP's five-year window are called *Targets* (see Section B). The specific activities that the staff will carry out in order to fulfil those tasks are called *Projects*. For some major topics of interest, *Goals* are grouped across *Themes* to form *Workplans* aimed at achieving a broad objective not limited to a particular *Theme* or *Goal*.

When considering the SSP, the following should be taken into account:

a. The general *Themes*, and the more specific *Goals*, constitute the scientific staff's primary responsibilities, and are fundamental to the five-year SSP outlined in Sections B (outline of Goals) and C (Workplans) below.

b. When possible, at this stage, the SSP's strategic goals were planned with clear SMART (Specific-Measurable-Attainable-Relevant-Timely) characteristics; if not, their SMART characteristics should become more clear as certain conditions are met (e.g. funding availability).

c. The SSP has a five-year time frame, but individual *Projects* are planned with two-year time frames. Thus, in future years, the staff will report on activities during the previous year and present the work plan for the following two years (IATTC-102-02a).

d. The timing and duration of *Projects* should be regarded as indicative, since they are subject to many factors that are sometimes difficult to predict and beyond the staff's control.

e. Not included in IATTC-102-02a are proposals for research that the staff considers necessary to accomplish the SSP's strategic goals, but which require additional human, logistic, and financial resources not currently available. These proposals are summarized in SAC-16 INF-E.b.

The IATTC scientific staff has developed a series of dedicated workplans (see Section C).

B. GOALS AND TARGETS OF THE SSP 2026-2030

This section lists the SSP's broad strategic research *Goals* for 2026-2030, categorized by the Plan's seven overarching *Themes*:

1. Data collection for scientific support of management
2. Life history studies for scientific support of management
3. Sustainable fisheries
4. Ecological impacts of fishing: assessment and mitigation
5. Interactions among the environment, ecosystem, and fisheries
6. Knowledge transfer and capacity building
7. Scientific excellence

Each *Goal* contains a number of *Targets*, which are the principal tasks that will be carried out to achieve a particular goal within the SSP's five-year window. The specific activities that the staff will carry out in order to fulfil those tasks are called *Projects*, whose duration can vary; they are in some cases grouped into *Work Plans* aimed at achieving a broad objective not limited to a particular *Theme* or *Goal*.

1. DATA COLLECTION FOR SCIENTIFIC SUPPORT OF MANAGEMENT (DAT)

GOAL DAT 1: By 2030, improve purse-seine catch and size composition estimates for tropical tuna species through the implementing of an improved port sampling protocol and spatiotemporal modeling approaches.

- Target 1. Merge the Enhanced Monitoring Program (EMP) with the traditional port sampling protocol and implement the Integrated Port Sampling Program (IPSP, SAC-16-05), as requested under paragraph 8 of Resolution C-24-01 on Conservation for Tropical Tunas.
- Target 2. Develop and apply spatial temporal models for estimating catch and size composition of the purse-seine tropical tuna fishery.

GOAL DAT 2: Throughout 2026-2030, support the activities of the IATTC in the development and implementation of an Electronic Monitoring System (EMS) for tuna fisheries in the EPO

- Target 1. Purse-seine fisheries
- Target 2. Longline fisheries
- Target 3. Transshipment
- Target 4. Support the activities of the IATTC Ad Hoc Working Group on Electronic Monitoring

GOAL DAT 3: By 2030, complete the design and support the implement of a standardized data collection program for shark species associated with fisheries managed by the Commission (paragraph 14 of Resolution C-24-05 on Sharks; See Workplan on Sharks in Section C).

- Target 1. Small-scale coastal fisheries
- Target 2. Small purse-seiners (class 1-5)
- Target 3. Longliners
- Target 4. Others (e.g. transshipment)

GOAL DAT 4: Throughout 2026-2030, continue to improve FAD data collection through the development and application of new approaches and programs.

- Target 1. Reliable acoustic satellite buoy data
- Target 2. FAD stranding and recovery data programs
- Target 3. Other technologies and programs (e.g., EM)

GOAL DAT 5: Through 2026-2030, modernize data collection and dissemination tools to support scientific research and management of tuna fisheries in the EPO (GEF proposal under preparation)

2. LIFE HISTORY STUDIES FOR SCIENTIFIC SUPPORT OF MANAGEMENT (LH)

GOAL LH 1: From 2025 to 2027, secure funding and implement a tropical tuna tagging cruise in the EPO, with a primary focus on skipjack tuna.

- Target 1. Secure funding in 2025 (see unfunded project in SAC-16 INF-E.b).
- Target 2. Conduct the tagging cruise (late 2025 to early 2026)
- Target 3. Analyze data to support stock assessment, management, and MSE (2026-2028)

GOAL LH 2: From 2027 to 2030, secure funding and execute electronic tagging efforts directed at studying movements of large (>130 cm) yellowfin and bigeye tuna.

- Target 1. Secure funding in 2027
- Target 2. Conduct tagging operations (2027-2028)
- Target 3. Analyze movement data, propose movement hypotheses for consideration in spatially structured stock assessments (2029-2030).

GOAL LH 3: From 2026 to 2030, secure funding and conduct a study on the reproductive biology of bigeye tuna in the EPO.

- Target 1. Solicit funds to support a multi-year, spatially robust sampling program.
- Target 2. Collect fresh ovaries from both purse-seine and longline fisheries.
- Target 3. Process tissue for histological evaluation and fecundity estimates.
- Target 4. Produce ogive for size at maturity data, evaluate spatial variability.

GOAL LH 4: From 2026 to 2030, continue studies on age and growth of tropical tunas using hard parts (otoliths) and tag-recapture data.

- Target 1. Secure funding to support equipment and sample collection.
- Target 2. Collect otoliths from tunas landed in IATTC ports.
- Target 3. Revise existing protocols for aging, incorporate AI tools to efficiently increase production.
- Target 4. Derive improved growth models for inclusion in stock assessments.

GOAL LH 5: Expand captivity studies at the Achotines Laboratory on the effects of key environmental factors on the pre-recruit life stages of yellowfin tuna (YFT), with a particular focus on the early juvenile stages and ultimately completing the life cycle of YFT in captivity.

GOAL LH 6: During 2025-2026, complete the research on dolphin cow-calf separation during tuna purse-seine operations in the ETP

- Target 1. Estimate the probability of cow-calf separation.
- Target 2. Evaluate the impact of potential separation on dolphin populations.

3. SUSTAINABLE FISHERIES (FISH)

GOAL FISH 1: Complete Management Strategy Evaluations (MSEs) for BET, SKJ, and YFT by 2030 (see Workplan on Stock assessments and MSE in Section D).

- Target 1. Complete the ongoing MSE for BET.
- Target 2. Conduct an MSE for YFT.
- Target 3. Conduct an MSE for SKJ.
- Target 4. Support the activities of the *Ad Hoc Working Group to Strengthen the Dialogue among Scientists, Managers and other Stakeholders on Management Strategy Evaluation* (Resolution C-24-08).

GOAL FISH 2: Complete one benchmark stock assessment for SKJ by 2030 (see Workplan on Stock assessments and MSE in Section D).

- Target 1. Obtain an estimate of population size from the spatiotemporal tagging model
  - Activity 1.1. Secure funding and conduct a tagging program (through Goal LH 1)
  - Activity 1.2. Improve spatial-temporal tagging modeling approach
- Target 2. Improve assumptions in stock assessment
  - Activity 2.1. Collect and analyze length-weight data (Goal DAT-1, Target 2)
  - Activity 2.2. Improve growth and natural mortality assumptions (through Goal LH 1)
- Target 3. Conduct the SKJ benchmark stock assessment.

GOAL FISH 3: Complete one benchmark stock assessment for YFT by 2030 (see Workplan on Stock assessments and MSE in Section D).

- Target 1. Produce an estimate of biomass.
  - Activity 1.1. Evaluate the best method to estimate biomass (e.g., tagging, CKMR, in-season depletion estimation).
  - Activity 1.2. Implement the appropriate data collection and analysis.
- Target 2. Improve assumptions in stock assessment.
  - Activity 2.1. Collect and analyze length-weight data (through IPSP, Goal DAT-1).
  - Activity 2.2. Improve growth and natural mortality assumptions (Goals LH 2 and LH 4).
  - Activity 2.3. Improve knowledge on reproductive biology and population structure through collaboration with external geneticists on continuing studies of sex determination and genomic mapping of yellowfin (Achotines Laboratory).
- Target 3. Conduct the YFT benchmark stock assessment.

GOAL FISH 4: Complete one benchmark stock assessment for BET by 2030 (see Workplan on Stock assessments and MSE in Section D).

- Target 1. Maintain an index of abundance (CPUE).
    - Activity 1.1. Continue joint longline index work.
- Target 2. Improve assumptions in stock assessment.
    - Activity 2.1. Collect and analyze length-weight data (through IPSP, Goal DAT-1).
    - Activity 2.2. Collect and analyze maturity data (Goal LH-3).
    - Activity 2.3. Improve growth and natural mortality assumptions (Goal LH 1, 2 and 4).
- Target 3. Conduct the BET stock assessment.

GOAL FISH 5. Conduct a close-kin mark-recapture (CKMR) stock assessment for silky shark by 2030-2031 (see Workplan on Sharks in Section D).

- Target 1. Complete the CKMR development phase.
- Target 2. Implement the CKMR program.
- Target 3. Conduct the stock assessment.
- Target 4. Explore the applicability of silky shark CKMR framework to other prioritized shark species.

GOAL FISH 6. From 2026-2030, address the Commission's requests to conduct conventional stock assessments of prioritized species, as needed, through collaboration with external organizations (see Workplan on Stock assessments and MSE in Section D).

- Target 1. Maintain active participation in ISC stock assessments.
- Target 2. Prioritized shark species in Resolution C-24-05 (e.g., ISC, CCPS).
- Target 3. Mahi-mahi (Dorado).
- Target 4. South Pacific Swordfish.
- Target 5. South Pacific Albacore.
- Target 6. ETP dolphins (only if CKMR deemed feasible).

GOAL FISH 7. From 2026 to 2030, improve science-based advice on FAD numbers and management by understanding the effect of FADs on tuna populations and ecosystems (see Workplan on FADs in Section D).

- Target 1. Relationship between changes in FAD number and densities, and school dynamics.
- Target 2. Relationship between changes in FAD fishing strategies and fishing mortality.
- Target 3. Relationship between changes in fishing strategies and FAD fate.
- Target 4. Relationship between changes in FAD numbers and the ecosystem attributes.

GOAL FISH 8: By 2030, complete the full life cycle of YFT tuna in captivity at the Achotines Laboratory.

4. ECOLOGICAL IMPACTS OF FISHERIES: ASSESSMENT AND MITIGATION (ECO)

GOAL ECO 1: From 2026 to 2030, conduct Ecological Risk Assessments (ERAs) of EPO fisheries to identify and prioritize species at risk and to evaluate the impact of different management scenarios.

- Target 1. Conduct ERAs for prioritized shark species, as requested in paragraph 15 of Resolution C-24-05.
- Target 2. Conduct ERAs, as needed, for other vulnerable taxa (e.g. rays, seabirds, sea turtles, and marine mammals).

GOAL ECO 2: By 2030, develop tools for the Commission-managed fisheries to reduce interactions with prioritized bycatch species.

- Target 1. Develop a library of species distribution models for prioritized bycatch species.
- Target 2. Develop spatiotemporal, environmental multi-species models to support bycatch avoidance.
- Target 3. Test and operationalize an initial version of the tool (e.g., eco-informatics platform).

GOAL ECO 3: From 2026 to 2030, in collaboration with the industry, conduct scientific experiments to identify technologies to reduce mortality of prioritized bycatch species

- Target 1. Purse-seiners (e.g. sorting grids)
- Target 2. Longline fisheries.

GOAL ECO 4: By 2030, complete the development of science-based, standardized best handling and release practices for all vulnerable taxa and fisheries managed by the Commission, including training programs for onboard crews (see workplan in Section C).

- Target 1. Implement the proposed workplan (see Section C).

GOAL ECO 5: From 2026 to 2030, develop science-based options to support the management of FAD impacts on tuna populations and ecosystems.

- Target 1. FAD recovery programs.
- Target 2. Spatial management strategies.
- Target 3. Biodegradable FADs.
- Target 4. Incentive systems.

GOAL ECO 6: From 2026 to 2030, develop a toolbox to inform the Commission's use of spatial management measures, including options proposed under the BBNJ agreement.

- Target 1. Develop best practices for data, modelling, and evaluation related to spatial management, including through dialogue and collaboration with other regional initiatives, as appropriate.
- Target 2. Develop and parameterize a toolbox of models for spatial management.
- Target 3. Improve understanding on species movement dynamics and stock structure.
- Target 4. Improve understanding on spatial fleet dynamics.

GOAL ECO 7: By 2030, develop and provide ecosystem-advice products to support the operationalization of the Ecosystem Approach to Fisheries Management (see proposed workplan in Section C).

- Target 1. Implement the proposed workplan.

GOAL ECO 8: At the Achotines Laboratory, continue supporting research studies addressing bycatch reduction technologies and the development of biodegradable FADs throughout 2026-2030.

5. INTERACTIONS AMONG THE ENVIRONMENT, THE ECOSYSTEM, AND FISHERIES (ENV)

GOAL ENV 1: By 2030, establish the foundation for promoting climate resilient fisheries managed by the Commission (see proposed workplan in section C).

- Target 1. Implement the proposed workplan.

GOAL ENV 2: Expand captivity and field studies at the Achotines laboratory during 2026-2030 on environmental changes and their effects on pre-recruit life stages, to better understand the global impacts of climate change on yellowfin tuna populations

6. KNOWLEDGE TRANSFER AND CAPACITY BUILDING (KNOW)

GOAL KNOW 1: Throughout 2026-2030, continue to use the Achotines Laboratory to support capacity building activities

- Target 1. Annual course under Capacity Building Fund
- Target 2. Other events (e.g. seminars, workshops)

GOAL KNOW 2: Under the Capacity Building Fund, establish the Jimmy Martinez Scholarship Fund in 2026

7. SCIENTIFIC EXCELLENCE (SCI)

GOAL SCI 1: Maintain external reviews of the staff's work

- Target 1. Benchmark stock assessments
- Target 2. Methodologies

GOAL SCI 2: Improving food security through Fisheries Stock Assessment Good Practices and capacity building (CAPAM).

C. WORKPLANS

TROPICAL TUNA STOCK ASSESSMENT AND MSE WORKPLAN

The workplan outlines the IATTC staff work to conduct stock assessments and management strategy evaluation to support sustainable fisheries management of the tropical tuna fishery in the EPO. The stock assessment work includes update and benchmark stock assessments for YFT and BET as well as exploratory and benchmark assessments for YFT. The MSE work includes finalizing the ongoing BET MSE and conducting YFT and SKJ MSE including supporting the activities of the Science Management dialogue Ad Hoc Working Group established by Resolution C-24-08.

	Species	2026	2027	2028	2029	2030
Stock Assessments	**BET**	Update	Benchmark			Benchmark
	YFT		Update		Benchmark	
	SKJ			Exploratory	Benchmark	
MSE	**BET**	Finalize				
	YFT	Start		Finalize		
	SKJ				Start	Finalize

SCHEDULE OF STOCK ASSESSMENTS

Species	Region	2025	2026	2027	2028	2029	2030	2031
Albacore Tuna (*Thunnus alalunga*) ALB	NPO		B			B		
Swordfish (*Xiphias gladius*) SWO	NPO				B			
Striped marlin (*Kajikia audax*) MLS	WCNPO			B				B
Blue marlin (*Makaira nigricans*) MLS	PO		B				B	
Pacific bluefin tuna (*Thunnus orientalis*) PBF	NPO		U		B		U	
Blue shark (*Prionace glauca*) BSH	NPO	I		B				B
Shortfin mako shark (*Isurus oxyrinchus*) SMA	NPO					B		

B – benchmark, U – update, I – indicator

SHARK RESEARCH WORKPLAN

Conservation and management of sharks have been priorities for the IATTC for many decades (e.g., Resolutions C-11-10, C-19-06, C-23-08). Recently, the Commission adopted Resolution C-24-05 on sharks, which, among other provisions, requests in paragraph 15:

> *In 2025, the IATTC scientific staff, in collaboration with the IATTC SAC and the EBWG shall develop and recommend to the Commission a Shark Research Plan that will prioritize research activities for Carcharhinus longimanus and C. falciformis, Sphyrna lewini, S. zygaena, Alopias pelagicus, Alopias superciliosus, Prionace glauca, and S. mokarran, and as appropriate, the other species listed in Annex 4 of C-24-05. The Shark Research Plan should include timelines and financial considerations for stock assessments, ecological risk assessments, and recommended management strategy evaluations.*

In response to this request, the IATTC staff prepared the shark research workplan outlined below. The plan aims to assess prioritized shark species, and mitigate, in a holistic manner, the potential impacts of fishing on their populations by developing and applying tools that can be applied before, during, or after fishing interactions occur. Budgets for developing and establishing data collection programs in small-scale coastal fisheries, as well as for a silky shark close-kin mark recapture stock assessment, are included in SAC-16 INF-E.b.

		Tentative chronogram				
		2026	2027	2028	2029	2030
Data collection						
Goal	**Complete the design and implement a standardized data collection program for shark species associated with fisheries managed by the Commission**					
Target	Small-scale coastal fisheries					
Goal	**Continue to support the IATTC in the development and implementation of an EMS for tuna fisheries in the EPO**					
Assessment						
Stock assessment						
Goal	**Conduct a close-kin mark-recapture stock assessment for silky shark**					
Target	Complete the CKMR development phase.					
Target	Implement the CKMR program.					
Target	Conduct the stock assessment.					
Target	Explore the applicability of silky shark CKMR framework to other prioritized shark species					
Goal	**Address Commission's request to conduct conventional stock assessments of prioritized species, as needed, through collaboration with external organizations**					
Target	Prioritized shark species in Resolution C-24-05 (e.g., ISC, CCPS)					
Assessment of impacts						
Goal	**Conduct ERAs of EPO fisheries to identify and prioritize species at risk and evaluate the impact of different management scenarios**					
Target	Conduct ERAs for prioritized shark species in Resolution C-24-05					
Goal	**Develop a toolbox to inform the use of spatial management efforts by the Commission, including options proposed under the BBNJ**					
Target	Develop good practices for data, models, and evaluation					
Target	Develop and parameterize a toolbox for spatial management models					
Target	Improve understanding on species movement dynamics and stock structure					
Target	Improve understanding on spatial fleet dynamics					
Goal	**Design and provide ecosystem-advice products to support operationalization of EAFM**					
Target	Identify and establish criteria for ecoregions and indicators					
Target	Develop ecoregions and indicators					
Target	Establish guidelines and develop pilot ecosystem-advice products					
Target	Initialization of the Pacific Marine Specimen Bank for prioritized species					
Mitigation of impacts						
Goal	**Develop tools for the Commission-managed fisheries to reduce fisheries interactions with prioritized bycatch species**					
Target	Develop a library of species distribution models for prioritized bycatch species.					
Target	Develop spatio-temporal environmental multi-species models for bycatch avoidance.					
Target	Test and operationalize a first version of the tool (e.g., eco-informatics)					
Goal	**In collaboration with the industry, conduct scientific experiments to identify technologies that would reduce mortality of prioritized bycatch species**					
Goal	**Complete the development of science-driven standardized best handling and release practices for all vulnerable taxa and fisheries managed by the Commission, including training programs for onboard crew**					
Target	Sharks					

WORKPLAN FOR THE FAD FISHERY

The IATTC adopted a series of measures related to fish aggregating devices (FADs), which regulate, among others, their design and construction (e.g., biodegradable FADs; Resolution C-23-04), limits on the numbers of FADs a vessel may monitor daily (Resolution C-24-01), and encourage the development and initiation of FAD recovery programs (Resolution C-23-03). In response to these aspects, and in an effort to better assess and address the research and knowledge gaps that hinder science-based FAD management, the IATTC staff has identified several strategic goals. These range from improving data collection to conducting comprehensive assessments and developing mitigation strategies for FAD-related impacts. These strategic goals and associated targets are presented in the dedicated FAD workplan outlined below.

		Tentative chronogram				
		2026	2027	2028	2029	2030
Data						
Goal	**Improve FAD data collection through the development and application of new approaches and programs**					
Target	Reliable acoustic satellite buoy data.					
Target	FAD stranding and recovery data programs.					
Target	Other technologies and programs (e.g., EM)					
Goal	**Continue to support the IATTC in the development and implementation of an EMS for tuna fisheries in the EPO**					
Assessment						
Assessment of impacts						
Goal	**Improve science-based advice on FAD numbers and management by understanding the effect of FADs on tuna populations and ecosystems**					
Target	Relationship between changes in FAD number and densities, and school dynamics.					
Target	Relationship between changes in FAD fishing strategies and fishing mortality.					
Target	Relationship between changes in fishing strategies and FAD fate.					
Target	Relationship between changes in FAD numbers and the ecosystem attributes					
Goal	**Design and provide ecosystem-advice products to support operationalization of EAFM**					
Target	Identify and establish criteria for ecoregions and indicators					
Target	Develop ecoregions and indicators					
Target	Establish guidelines and develop pilot ecosystem-advice products					
Target	Initialization of the Pacific Marine Specimen Bank for prioritized species					
Mitigation of impacts						
Goal	**Design science-based options to support management of the impact of FADs on tuna populations and ecosystems**					
Target	FAD recovery programs					
Target	Spatial management strategies					
Target	Implementation of biodegradable FADs					
Target	Incentive systems					

CLIMATE CHANGE WORKPLAN

The staff has developed a proposed climate change workplan for IATTC-managed fisheries, in response to Resolutions C-23-10 (amended by C-24-10). The goal of the workplan is to promote climate resilient fisheries for the EPO. This workplan was presented at SAC-15 and EBWG-2, where it was met with interest. The main phases and activities of the workplan are described in SAC-15-12 and summarized on the Table below. An update on the staff's progress in implementing the proposed Climate Change workplan is provided in in SAC-16 INF-P.

TABLE 1. (from SAC-15-12): Timetable of activities for the proposed workplan. The timeframe is flexible, often iterative, and subject to change.

Phase	Activities	2024				2025				2026				2027				2028				2029			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1) Planning	Review of and share available frameworks and tools																								
	Develop white paper of review and workplan proposal																								
	SAC/Comission Meeting: Share climate change resources and proposal with members																								
	Establish Terms of Reference (TOR) for climate change workshops																								
2) Decide on scope and goals	Workshop to develop scope																								
	SAC/Comission Meeting: Share/adopt scope																								
3) Develop framework	Workshop to develop framework																								
	SAC/Comission Meeting: Share/adopt framework																								
4) Creating tools	Strategic tool development																								
	Workshop for sharing and developing strategic tools																								
	Tactical tool development																								
	SAC/Comission Meeting: Share newly developed strategic tools																								
	Workshop for sharing and developing strategic and tactical tools																								
	SAC/Comission Meeting: Share newly developed strategic and tactical tools																								
	Workshop to identify tactical tools and management action																								
Tool Implentation & Action	SAC/Comission Meeting: Recommend tool implementation/ management action																								
	Implementation																								

OPERATIONALIZATION OF EAFM WORKPLAN

A proposed workplan to support operationalization of EAFM has been prepared by the staff (EB-02-02), and presented at the EBWG-2, which received the workplan with interest. The workplan sets the foundations to advance progress on the operationalization of EAFM through the development of ecosystem-advice products. The staff's progress on the workplan is provided in EB-03-04.

Since the workplan includes considering existing tools for developing ecological indicators, development of a Pacific Marine Specimen Bank for the EPO would be complementary and contribute significant information that is currently lacking to advance ecosystem models for the EPO. However, commencement of this initiative will require funding.

Tentative timeline and phases of the workplan to support operationalization of EAFM (see EB-02-02). Q=Quarter; EBWG=Ecosystem and Bycatch Working Group.

Phase	Activities	2024				2025				2026				2027				2028			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1) Planning	***Review & summarize*** current t-RFMO work to harmonize IATTC's efforts on developing an EcoCard (EB-02-02)																				
	Draft a proposed workplan to develop EcoCard(s) for the EPO																				
	Present proposed workplan to the EBWG																				
	Engage with global experts to determine functions of an EcoCard, scope of work & frameworks																				
	Create frameworks for (1) delineating ecoregions (2) developing EcoCards at the Ecoregion level																				
2) Identifying & Prioritizing Issues for Establishing Criteria	Discussion forums on tools to ***establish criteria*** for (1) delineating ecoregions, (2) developing indicators																				
	Present progress on EcoCard functions, frameworks and criteria to the EBWG																				
3) Development	Use established criteria from Phase 2 to ***draft ecoregions***																				
	Use established criteria from Phase 2 to ***draft indicators***																				
	Present progress on draft ecoregions and indicators to the EBWG																				
4) Management Considerations & Communication	***Produce recommendations*** from strategic & tactical & corresponding indicators for management considerations																				
	Develop pilot ecosystem-advice products : (1) EcoCard of 'key' indicators (2) detailed Ecosystem Status Assessment of all indicators																				
	Present progress on the pilot products to the EBWG																				
	Present recommendations for decision rules to the Commission																				
	Establish guideliines for delineating ecoregions & developing EPO EcoCards at the Ecoregion level, based on the pilot products																				
Timeline is flexible and subject to change Process is iterative Maintain, review, refine Ecoregions and EcoCards on an annual basis to support EAFM																				

BHRPS WORKPLAN

Currently there are no single mitigation measures that are 100% effective in eliminating bycatch mortality of vulnerable taxa in purse seine, longline or gillnet fisheries. Therefore, on those occasions when animals are captured, it is important that crews are aware of, and correctly implement, a set of science-drive BHRP guidelines to improve the post release survival outcomes of bycatch. Considering the potential impacts of tuna and tuna-like fisheries on these species, the Commission adopted multiple Resolutions that promote their conservation, for example, seabirds (C-11-02), sea turtles (C-19-04), sharks (C-24-05), and rays (C-15-04). In response to this need, the IATTC staff put together a proposed workplan for the design and implementation of BHRPs for vulnerable taxa and fisheries managed by the Commission (EB-02-03), which was presented, and received with interest, at the EBWG-2 and the SAC. The phases of the proposed workplan are shown in EB-02-03 and below.

Chronogram outlining the BHRP workplan phases, activities, and proposed timelines.

Phase	Activities	2023				2024				2025					2026		
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1) Review & Planning (COMPLETED)	Review of data availability and gaps																
	Review of Resolutions for all vulnerable																
	SAC/Commission Meeting: Request																
	Request BHRP guidelines, regulations,																
	Develop workplan																
2) Framework	Develop a framework																
	Develop strategy for updating adopted																
	SAC/Commission Meeting:																
3) Adoption of BHRP under current state of knowledge	Identification of subject matter experts (SME) for each taxa & formation of SME groups				Shark			Seabird				Sea turtle					
								Rays			Marine Mammals						
	Consultation with SME groups for BHRP development							Seabird									
										Rays							
													Sea turtle (ST)				
											Marine Mammals (MM)						
	Commission Meeting: Adoption of interim BHRPs for each taxa and fishery							Shark									
								Seabird									
												Rays					
																ST	
																MM	
4) Development of BHRP training materials (manuals, videos, infographics for posting, translations).	Sharks	Shark															
	Seabird	Seabird															
	Rays					Rays											
	Sea turtles									Sea turtles							
	Marine Mammals									Marine Mammals							
5) Filling Data Gaps	Generate fleet characteristic data																

	Review existing IATTC and external (under C-03-05) data collection processes to ensure relevant data for BHRP & PRS determination is collected																	
	Update observer data collection protocols, forms, databases																	
	Develop regional telemetry database that houses relevant PRS data																	
	Generate regional repository for stranding information																	
	Prioritize research – (Completed)																	
6) Performance Assessment	Assess efficacy of BHRP guidelines																	
	Review and revise as necessary																	
	Develop communication tools (e.g., repositories for training materials & performance assessment results)																	
	Develop individual vessel bycatch BHRP performance assessment tools																	