

Comisión Interamericana del Atún Tropical
Inter-American Tropical Tuna Commission



Actividades de investigación – Research activities (IATTC-93-06b)

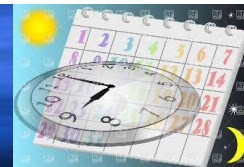
93ª Reunión de la CIAT–93rd Meeting of the IATTC
24, 27-30 Agosto-August 2018 - San Diego, California, EEUU–USA

Temario - Outline

- Calendario de evaluación de poblaciones (atunes y otras especies)
 - 4 planes de trabajo:
 - Evaluación del patudo
 - EEO
 - Plantados
 - Tiburones
 - Características SMART de los planes de trabajo
- Stock assessment schedule (tuna and other species)
 - 4 work plans:
 - Bigeye assessment
 - MSE
 - FADs
 - Sharks
 - SMART characteristics of work plans

Calendario de evaluación de poblaciones: CIAT

Stock assessment schedule: IATTC



Species	SSP ref.	Last assessed	2018	2019	2020	2021	2022	2023
Yellowfin tuna	H.4.a	2017	Update	Indicators/ Exploratory	Benchmark	Update	Update	Update
Skipjack tuna	H.4.a	2004	Indicators	Indicators	Indicators	Indicators	Indicators	Indicators/ Tagging*
Bigeye tuna (EPO)	H.4.a	2017	Update	Indicators/ Exploratory/ Review	Benchmark	Update	Update	Update
Bigeye tuna (Pacific wide)	H.7.a	2016				Exploratory		
South Pacific albacore tuna	H.7.c	2018					Benchmark	
Swordfish (south EPO)	H.7.b	2011				Benchmark		
Silky shark (EPO/Pacific wide)	H.7	2018	Indicators	Indicators	Indicators	Indicators	Indicators	Indicators/ Benchmark
Hammerhead sharks	H.5.b	Never						Indicators
Dorado	I.3.a	2016		Candidate RP and HCR				

***Conditional on multi-year tagging program**



Plan de trabajo para mejorar la evaluación del patudo (resumen)

Workplan to improve bigeye assessment (summary)



2017	
October: CAPAM workshop on recruitment: theory, estimation, and application in fishery stock assessment models	
Collaboration with Japanese scientists on identifying targeting changes	Report, SAC-09
2018	
February: CAPAM workshop on the development of spatiotemporal models of fishery catch-per-unit-effort data to derive indices of relative abundance	SAC-09-09
Investigation of the relationship between fishing mortality and fleet capacity	Project J.2.a
Developing a spatially structured stock assessment for bigeye tuna and other model improvements	Project I.1.a
October: CAPAM workshop on spatial stock assessment models focusing on bigeye tuna	Project X.1.a
2019	
January/February: Proposed longline CPUE workshop	Project H.1.d
March: Proposed bigeye tuna assessment independent review	Project T.1.a
May: Exploratory bigeye tuna assessment	Report, SAC-10
2020	
January: CAPAM workshop on natural mortality	
May: Benchmark bigeye tuna assessment	Report, SAC-11
August: New management recommendations to the Commission	IATTC annual meeting



Características SMART – SMART characteristics

“Una meta sin un plan no es más que un deseo”

Específico
Medible
Alcanzable
Pertinente
A tiempo



Specific
Measurable
Attainable
Relevant
Time-bound

“A goal without a plan is just a wish”

Plan de trabajo: patudo – Work plan: bigeye



<ul style="list-style-type: none"> Evaluación de referencia 	<p>Específico Specific</p>	<ul style="list-style-type: none"> Benchmark assessment
<ul style="list-style-type: none"> Evaluaciones exploratorias y de referencia (informes al CCA en 2019 y 2020, respectivamente) Revisado por el CCA y panel experto externo (revisión independiente; marzo de 2019) 	<p>Medible Measurable</p>	<ul style="list-style-type: none"> Exploratory and benchmark assessments (SAC reports 2019 and 2020, respectively) Reviewed by SAC and external expert panel (independent review; March 2019)
<ul style="list-style-type: none"> Pasos alcanzables presentados en plan de trabajo 	<p>Alcanzable Attainable</p>	<ul style="list-style-type: none"> Achievable steps presented in work plan
<ul style="list-style-type: none"> Evaluación actual tiene problemas Evaluación necesaria para asesoramiento de ordenación cuando expire C-17-02 	<p>Pertinente Relevant</p>	<ul style="list-style-type: none"> Current assessment has issues Assessment required for management advice when C-17-02 expires
<ul style="list-style-type: none"> Mayo de 2020: presentar evaluación de referencia en CCA Agosto de 2020: nuevas recomendaciones de ordenación a la CIAT 	<p>A tiempo Time-bound</p>	<ul style="list-style-type: none"> May 2020: Present benchmark assessment at SAC August 2020: New management recommendations to IATTC



Plan de trabajo: EEO – Work plan: MSE



<ul style="list-style-type: none"> Evaluación de RCE adoptada y alternativas requeridas por la Resolución C-16-02, comenzando con EEO para el patudo 	<p>Específico Specific</p>	<ul style="list-style-type: none"> Assessment of adopted HCR and alternatives as required by Resolution C-16-02, starting with MSE for bigeye
<ul style="list-style-type: none"> Informes al CCA (2019-2023) 	<p>Medible Measurable</p>	<ul style="list-style-type: none"> Reports to SAC (2019-2023)
<ul style="list-style-type: none"> Dos componentes: técnico (expertos científicos) y diálogo (gestores e interesados). Serie de talleres para gestores e interesados Pasos alcanzables presentados en plan de trabajo 	<p>Alcanzable Attainable</p>	<ul style="list-style-type: none"> Two components: technical (scientific experts) and dialogue (managers and stakeholders). Series of workshops for managers and stakeholders Achievable steps presented in work plan
<ul style="list-style-type: none"> Adopción de RCE, probadas usando EEO, es importante para la aplicación del enfoque precautorio 	<p>Pertinente Relevant</p>	<ul style="list-style-type: none"> Adopting HCRs, tested using MSE, is important for applying the precautionary approach
<ul style="list-style-type: none"> 2023: reportar resultados finales en SAC-14; recomendaciones a la reunión anual de la CIAT 	<p>A tiempo Time-bound</p>	<ul style="list-style-type: none"> 2023: Report final results at SAC-14; recommendations to IATTC annual meeting



FAD work plan



Specific	<ul style="list-style-type: none">• Develop data-driven FAD management advice• Reduce environmental impact of FADs
Measurable	<ul style="list-style-type: none">• Develop multiple data sources for studying each FAD over its lifetime (B.2, C.1.a, D.2.a, Q.3)• Quantify the relationship between fishing mortality and operational characteristics (J.2.a)• Identify viable methods for reducing juvenile bigeye catches and bycatch (M.1.a, M.1.b, M.3.a)• Produce field-tested ecologically-friendly FAD designs (M.5.a)• Create best-practice guidelines for FAD recovery (M.5.b)
Attainable	<ul style="list-style-type: none">• Funding:<ul style="list-style-type: none">• FAD marking development (C.1.a)<ul style="list-style-type: none">• Long-term Class 1-5 Electronic Monitoring (EM)• Class 6 EM pilot study (D.2.c)• Training workshops to improve data collection (Form 9/2016 of C-16-01; C-17-02)• Full participation with data provisions of C-16-01 and C-17-02 (<i>as amended by FAD WG</i>)• Industry cooperation with field trials
Relevant	<ul style="list-style-type: none">• Expansion of FAD fisheries, and data gaps on FAD-related activities, pose challenges to t-RFMOs for providing management advice.
Time-Bound	<ul style="list-style-type: none">• 2018: Initiate expansion of Class 1-5 observer data collection (B.2)• 2019:<ul style="list-style-type: none">• Training workshops to expand/improve data collection (Q.3)• Reduce juvenile bigeye catch and bycatch (M.1.b, M.3.a)• 2020:<ul style="list-style-type: none">• Prototypes for reliable FAD marking (C.1.a)• Sampling design for Class 1-5 EM (D.2.a)• Sampling design for Class 6 EM (D.2.c)• Fishing mortality <i>versus</i> operational characteristics (J.2.a)• FAD recovery (M.5.b)• 2021: Ecologically-friendly FAD designs (M.5.a)

Shark work plan



Specific	<ul style="list-style-type: none">• Prioritize shark species data collection, research and management• Improve data collection for shark fisheries• Conduct assessments for silky and hammerhead sharks• Mitigate shark bycatch
Measurable	<ul style="list-style-type: none">• Develop PSAs and ERAs to provide guidance on priority shark species (L.1.a-b, L.2.a)• Develop and implement a sampling program for shark fisheries in Central America (C.4.a, C.4.b)• Workshop series on data compilation and tentative assessment for hammerheads (H.5.b)• Silky shark assessment (F.2.a, H.5.a, H.7.d)• Identify viable methods for reducing bycatch (P-S: M.1.a, M.3.a, M.5.c, N.1.a) and maximizing post-release survival (LL: M.2.a-b)
Attainable	<ul style="list-style-type: none">• Funding:<ul style="list-style-type: none">• Long-term shark fisheries sampling program in Central America (C.4.b)• Hammerhead catch data and life history parameters workshop (H.5.b)• Priors for shark stock-recruitment relationships (H.7.d)• Purse-seine bycatch mitigation studies (M.3.a, M.5.c)• Continued collaboration with SPC/WCPFC/ABNJ• Cooperation of industry and CPCs
Relevant	<ul style="list-style-type: none">• IATTC is responsible for managing shark species under the Antigua Convention
Time-Bound	<ul style="list-style-type: none">• 2019:<ul style="list-style-type: none">• Sampling designs for shark fisheries in Central America (C.4.a)• Establish long-term artisanal sampling program for shark fisheries in Central America (C.4.b)• Revised silky purse-seine indicators (H.5.a)• ERAs and PSAs (L.1.a-b, L.2.a)• Viable methods for bycatch reduction (P-S: M.3.a, M.5.c)• 2020:<ul style="list-style-type: none">• Sampling designs for Class 1-5 EM (D.2.a)• Stock structure (F.2.a)• Best-practice guidelines (LL: M.2.a-b)• 2021: Hammerhead data compilation workshop (H.7.d)• 2023: Silky and hammerhead assessments (H.5.b, H.7.d)

Proyectos: No financiados

Projects: Unfunded

IATTC-93-06c



SSP		Budget (US\$)
1. DATA COLLECTION FOR SCIENTIFIC SUPPORT OF MANAGEMENT		
C.1.a:	Develop an effective and reliable floating-object marking scheme to assist scientific advance	102,500
C.4.b	Long-term sampling program for shark catches of artisanal fisheries in Central America	213,000
D.2.c	Pilot study of electronic monitoring (EM) of the activities and catches of Class-6 purse-seine vessels	170,000
2. LIFE HISTORY STUDIES FOR SCIENTIFIC SUPPORT OF MANAGEMENT		
E.2.a	Investigate spatiotemporal variability in the age, growth, maturity, and fecundity of yellowfin tuna in the EPO	60,000
E.2.b	Workshop to evaluate differences in bigeye tuna age estimation methods and resulting growth models utilized in current stock assessments by the IATTC and WCPFC	30,000
E.4.a	Multi-year tuna tagging study	7,300,000
E.5.c	Investigate the population structure of skipjack and yellowfin tunas in the EPO, using genetic analyses	50,000
3. SUSTAINABLE FISHERIES		
H.1.c	Investigate potential changes in the selectivity of the longline fleet resulting from changes in gear configuration	10,000
H.1.d	Improve indices of abundance based on longline CPUE data	343,000
H.5.b	Workshop series on data compilation and assessment model development for hammerhead assessments	100,000
H.7.a	Pacific-wide bigeye tuna exploratory assessment	50,000
H.7.b	South Pacific swordfish assessment	50,000
H.7.c	South Pacific albacore stock assessment	50,000
H.7.d	Develop priors for shark stock-recruitment relationships	233,000
4. ECOLOGICAL IMPACTS OF FISHERIES: ASSESSMENT AND MITIGATION		
M.1.c	Test hookpods to reduce seabird and sea turtle bycatches in longlines	40,500
M.3.a	Estimate bycatch and discard rates at FADs, by species, and identify "hot spots"	65,000
M.5.c	Evaluate and reduce post-release mortality of Mobulid rays	513,000
5. INTERACTIONS AMONG THE ENVIRONMENT, THE ECOSYSTEM, AND FISHERIES		
O.1.a	Develop a fishery-dependent ecological sampling program for EPO tuna fisheries	250,000
O.2.c	Investigate the effects of pollutants on pre-recruit survival of yellowfin tuna	75,000
6. KNOWLEDGE TRANSFER AND CAPACITY BUILDING		
R.1.b	Communicate management strategy evaluations (MSE) for tropical tuna fisheries in the EPO to managers, scientists and other stakeholders	298,000
7. SCIENTIFIC EXCELLENCE		
T.1.a	External review of bigeye tuna assessment	90,000
X.1.b	Workshop on operating models for Management Strategy Evaluation (MSE)	50,000



Programa Regional de Mercado de Atún-Regional Tuna Tagging Program

Objetivos:

- Reducir la incertidumbre en evaluaciones de poblaciones de delfines, particularmente el barrilete
- Determinar tasas de desplazamiento, dispersión, y mezcla de atunes tropicales en el OPO, y entre el OPO y regiones oceánicas adyacentes
- Estimar tasas por sexo de crecimiento, mortalidad, abundancia, selectividad, y explotación para atunes tropicales en el OPO

Base: Solicitudes por varios CPC

Productos:

- Informe sumario de resultados para el Comité Científico Asesor
- Estimaciones de abundancia y tasa de explotación de los atunes tropicales
- Estimaciones de parámetros biológicos y otros
- Base de datos de marcado

Beneficios de ordenación: Mejores evaluaciones de poblaciones y asesoramiento científico para la ordenación de atunes tropicales, especialmente barrilete

Presupuesto: US\$ 7,300,000 (US\$ 2,540,701 año 1)

Objectives:

- Reduce uncertainty in tuna stock assessments, particularly skipjack
- Determine rates of movement, dispersion, and mixing of tropical tunas in the EPO, and between the EPO and adjacent ocean regions
- Estimate sex-specific growth, mortality, abundance, selectivity, and exploitation rates for tropical tunas in the EPO

Basis: Requests by several CPCs

Deliverables:

- Summary report of results for Scientific Advisory Committee
- Estimates of abundance and exploitation rate for tropical tunas
- Estimates of biological and other parameters
- Tagging database

Management benefit: Improved stock assessments and scientific advice for management of tropical tunas, especially skipjack

Budget: US\$ 7,300,000 (US\$ 2,540,701 year 1)





¿Preguntas?
Questions?



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