

WCPFC Shark Research Plan Summary Tables EB-WP-04

SPC-OFP



WHAT HAS BEEN TABLED AT SC?

10 papers tabled

Completed work (6)

- Review of shark data and modelling framework to support stock assessments (proj 78).
- PW silky shark assessment.
- NWP make shark assessment.
- Whale shark risk assessment.
- Longline and purse seine bycatch estimation.



WHAT HAD BEEN TABLED AT SC?

Ongoing work (4)

- Manta and mobulid ID guide.
- Post release mortality of silky and oceanic whitetip.
- LRPs for elasmobranchs.
- Silky shark tagging post release mortality and FAD entanglement.





2017 PROJECTS NOT FUNDED:

- Participation in ISC North Pacific shortfin make shark stock assessment activities.
- SRP mid-term review proposed cancel as part of project 78.
- Hammerhead shark catch histories proposed cancel and make part of project #4.

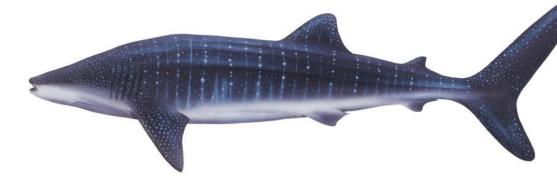
2019 PROJECTS



Carry overs from previous SRP

(dependant on the outcomes of project 78 - Species Specific Assessment Decision Trees)

- Southeast Pacific data preparation to support blue and shortfin make assessments in 2020.
- Shark Modelling Project.
- Operational planning for shark biological data improvement.
- Assess spawner recruit relationships.





New (from SRP)

(dependant on the outcomes of project 78 - Species Specific Assessment Decision Trees)

- Southwest Pacific make shark assessment.
- Hammerhead shark biology.
- Operational and management histories for WCPO longline fleets.
- Whale shark stock discrimination.



WHAT NEEDS TO BE DONE?

To assist the WCPFC Science Research Sub-Committee's deliberations, SC14 is invited to review these projects.

The proposal from the Theme Convenor is to have the detailed discussion in an ISG (electronically).

- Review the Shark Research Plan progress
- Update as needed

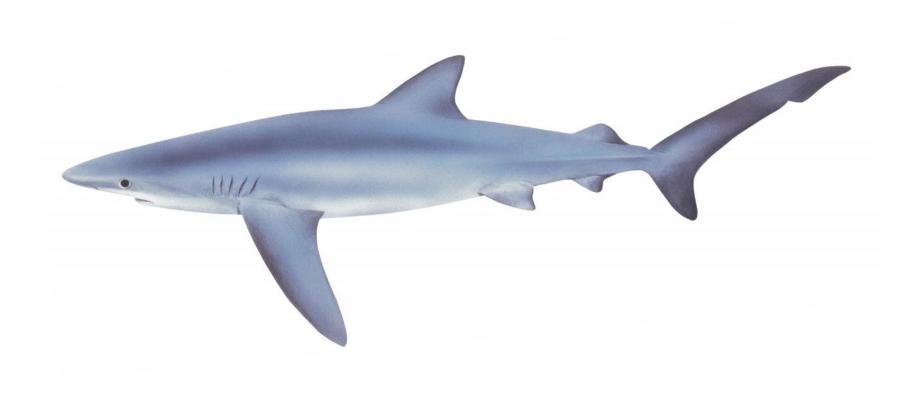
 Developing a final project list considering necessity and sequencing of work.

Commenting on the project objectives.



THANKS FOR LISTENING





Species	Stock	Last assessment	2018	2019	2020	2021	2022
ky shark	WCPO	2013		Assessment (SPC) depends on proj 78 and Pacific-wide assessment			
	Pacific-wide	-	Assessment (SC14-SA-WP-xx) ABNJ		Stock discrimination? Note: Maybe better directed at another species ISG discuss pending outcome of PW assessment?	Stock discrimination?	
Oceanic hitetip shark	WCPO	2012		Assessment (if data supports now observer only) (SPC) depends on proj 78			
ue shark	Southeast Pacific	-		Data preparation to support assessment #1	Assessment (if data supports) (WCPFC)		
	Southwest Pacific	2016			Assessment data preparation (SPC) (if South Pacific wide is preferred this can be cancelled)	Assessment (if data supports)	
	South Pacific- wide	-				Assessment (if data supports)	
	North Pacific	2017			Assessment (ISC)		

Species	Stock	Last assessment	2018	2019	2020	2021	2022
	Southeast Pacific	-		Data preparation to support assessment #I	Assessment (if data supports) (WCPFC)		
ako shark	Southwest Pacific	-		Assessment (if data supports) #2			
shortfin)	Northwest Pacific	2015 (Indicator analysis)	Assessment (ISC) (SC14-SA-WP-xx)			Assessment (ISC)	
	South Pacific wide	-		Assessment data preparation (SPC)	Assessment (if data supports)		
orbeagle	Pacific-wide (southern hemisphere)	2017					
	WCPO	-					
eye thresher	Pacific-wide	2017					
mmerhead	WCPO	-		Biological research to determine species-specific age, growth and reproductive parameters? #3 Update catch history? Can be done as part of #4 SC13 #8 can be withdrawn if rolled into #4 Both projects above should be discussed in the light of proj 7	Stock discrimination? Biological research to determine species-specific age, growth and reproductive parameters? #3 continued		
	Pacific-wide	-					
	WCPO	-	8:1	Stock discrimination? #5	Stock discrimination?		
'haleshark	Pacific-wide	-	Risk assessment based on purse seine interactions (SC14-EB-WP-xx) ABNJ				
lanta and nobulids	WCPO	-	Develop manta and mobulid - observer training and identification guides (SC14-EB-IP-xx) (ABNJ+SPC)				

Species	S tock	Last assessment	2018	2019	2020	2021	2022
neral shark work	WCPO	NA	Review of shark data and modelling framework to support stock assessments (proj 78) (SC14-EB-WP-02) WCPFC/SPC SRP mid-term review? SC13#7 but now rolled into proj 78. Post-release mortality of silky and oceanic whitetip sharks in longline and purse seine fisheries (SC13-EB-IP-06) (SC14-EB-IP-02) SPC/ABNJ Identifying LRPs for elasmobranchs (ongoing initial draft to SC14) (SC14-MI-WP-XX) WCPFC tender Longline bycatch estimation (SC14-ST-WP-xx) - SPC Purse seine bycatch estimation (SC14-ST-IP-xx) - SPC Project 42 silky shark tagging movement and FAD entanglement (ongoing - no paper for SC14) (ISSF+SPC)	Operational and management histories #4 Updated indicator analysis? (Pending outcome of proj 78 and SC14 deliberations decide on scope and species to be covered) Shark modelling Project #6 Operational planning for shark biological data improvement #7 Assess spawner recruit relationships? #8	Develop a 2021-2025 shark research plan to be presented to SC16 in 2020?		
ew of shark CMM(s)	WCPFC key sharks	Not previously undertaken:	Potentially scheduled for 2023 in suggestions in the text		ed in the CMM under develop his should be decided after any		

Short finned mako (Isurus oxyrinchus) – Southern Hemisphere

Can we d

Assessment type		Inputs	Data needs	Do we have it (may need to provide detail)	Can we get it or estimate it? (may need to provide detail)	(if NO, sh we wor towards th YES should do it)
		Age and growth	Reliable length-at-age estimates	Yes		
ı Rich Assessment.	Biology	Maturity	Reliable maturity schedule	No	Uncertainty with the reproductive cycle timing and the gestation period (9-25 mo.)	
grated or other ytic assessment - e.g.		Stock structure	Some understanding of stock structure	Yes		Yes – no
et al.		М	Reliable M estimate	Yes	Approximate estimates 0.1-0.15	
Pt based	Fisheries	Catch	Catch history (more than 20 years)	No	Yes	
		Effort	Effort data	Yes, mostly longline effort		
		Length	Length samples from some fisheries	Yes for some fleets		
		Weight	Weight samples from some fisheries	Yes for some fleets		
ium Data Assessment	Biology	Age and growth Maturity Stock structure				Yes estim of catch indices
cator based		Catch				
ssment (e.g. Rice et	Effor Lengt Fisheries	Effort				abundar
or SRA - e.g. MIST		Length				should produced checked reliabili
et al.) Pt sed		Weight				
a Poor Assessment	PSA score	PSAI	PSA2	PSA3		Kirby a
or ERA- eg PSA	Deep Risk	MEDIUM	MEDIUM	MEDIUM		
or EKA- eg FSA by and Hobday) Risk indicator H, M, L	Shallow Risk	MEDIUM	MEDIUM	MEDIUM		Hobday 2 WCPFC-S EB SWG/

Whale Shark (Rhincodon typus)

Assessment type		Inputs	Data needs	Do we have it (may need to provide detail)	Can we get it or estimate it? (may need to provide detail)	Can we do (if NO, she we wor towards th YES should do it)
		Age and growth	Reliable length-at-age estimates	No		
	Biology	Maturity	Reliable maturity schedule	No		
Rich Assessment. grated or other		Stock structure	Some understanding of stock structure	No		
ytic assessment - e.g. et al.		M	Reliable M estimate	No		No
Pt		Catch	Catch history (more than 20 years)	No		No
based	Fisheries	Effort	Effort data	Yes		
		Length	Length samples from some fisheries for	Limited		
		Weight	Weight samples from some fisheries	Limited		
		Age and growth		Limited information		
		Maturity		Limited information		As part of 2018 Com
ium Data Assessment		Stock structure		Limited information		
cator based ssment (e.g. Rice et		Catch		No		Ocean
or SRA - e.g. MIST		Effort		No		program Pacific w
et al.)		Length		Limited		analysis
Pt sed		Weight		Limited		whale sh purse se interactio
	PSA score	PSAI	PSA2	PSA3		
a Poor Assessment,	Deep Risk	HIGH	MEDIUM	MEDIUM		Kirby ar
or ERA- e.g. PSA by and Hobday) lisk indicator H, M, L	Shallow Risk	HIGH	MEDIUM	MEDIUM		Hobday 2 WCPFC-S EB SWG/V

Smooth hammerhead (Sphyrna zygaena)

Assessment type Inputs Data needs Do we have it (may need to provide detail) Do we have it (may need to provide detail) Age and growth Reliable length-at-age estimates No Reliable maturity schedule No Yes- based on studies from other areas Stock structure Some understanding of stock structure Reliable Mestimate Catch Reliable Mestimate Reliable Mestimate Fisheries Effort Effort data Length Weight Stock structure No Reliable from some fisheries Very Limited Weight No Regional information Regional information Stock structure No Regional information Estimate overall coverall coveral coverall coveral cov								
Rich Assessment rated or other rated or other fice assessment - e.g. et al. Effort Effort Effort Ength Weight Weight Age and growth Reliable maturity schedule No Yes- based on studies from other areas No Yes- based on studies from other areas HHD sharks are often not misidentified HHD sharks are often not misidentified No With high uncertainty No With high uncertainty Weight Weight samples from some fisheries Very Limited Very Limited Age and growth No Eastern Pacific estimates exist Age and growth No Reagonal information No Estimate overal ic. Reported No Catch No With high uncertainty With high uncertainty Fisheries Effort Effort Reported No With high uncertainty Would by first st towards towards	Assessment type		Inputs	Data needs		_	(if NO, show we wo towards if YES show	
Rich Assessment Rich a			Age and growth	Reliable length-at-age estimates	No			
Stock structure Stock stru		Biology	Maturity	Reliable maturity schedule	No			
t based Effort Length Weight Weight Stock structure Fisheries Biology Maturity Catch Catch Catch Catch Catch Catch Weight Weight Maturity Catch Catch Catch Catch Catch Catch Catch istory (more than 20 years) No With high uncertainty Wery Limited Wery Limited Very Limited Very Limited No Eastern Pacific estimates exist exist No Regional information No General information only. Stock structure Catch No With high uncertainty With high uncertainty With high uncertainty With high uncertainty Would be first to towards SRA - c. g. MIST (Fu et Length Weight Fisheries Poor Assessment, or ERA- eg PSA yand Hobday) Stell indicator Minimal observed species specific data MEDIUM HIGH MEDIUM MEDIUM Yes, shou update	grated or other		Stock structure	-	Limited			
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or ERA- eg PSA y and Hobday) isk indicator TIEDIOTY THEDIOTY Yes, shou update			PSAI					
y and Hobday) isk indicator update		•						
	or ERA- eg PSA on the second in the second i	Shallow Risk	MEDIUM	HIGH	MEDIUM		Yes, shou update	