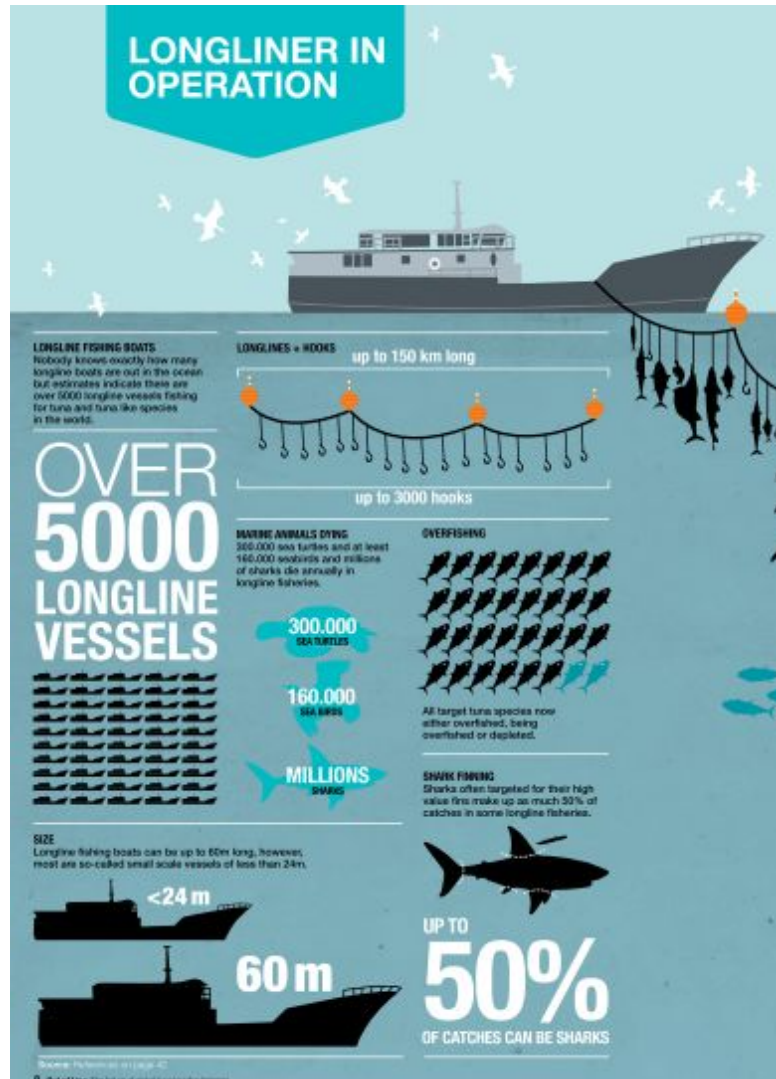


LONGLINE FIP FCF YELLOWFIN & ALBACORE WCPO



J. Murua, J.P. Monteagudo, H. Murua

MARKETS TOWARDS SUSTAINABLE FISHING PRODUCTS



And killing hundreds of thousands of albatross each year in longline and other fishing gear.



SUPERMARKETS RATED BY SUSTAINABLE FISH SOURCING



TUNA FIPS

A **fishery improvement project** is a multi-stakeholder effort to improve the sustainability of a fishery. While FIPs vary in scope and nature, to be considered as such, a FIP must meet a number of requirements pertaining to participation, funding, transparency, and scientific rigor

Tuna FIP fisheries



MSC TUNA FISHERIES

GEAR	CERTIFIED	ASSESSMENT
LL	14	12
PL	8	14
PS	9	11

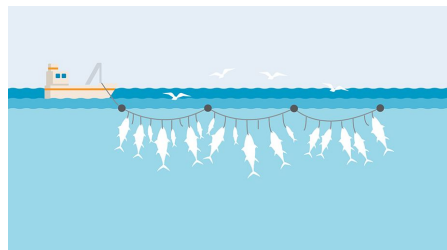
Longline Bumble Bee/FCF WCPO FIP

Main species: Yellowfin & Albacore tuna

Area: WCPO, FAO area 71 & 81

Gear: Pelagic longline

Fishing fleet: Fiji and China longliners

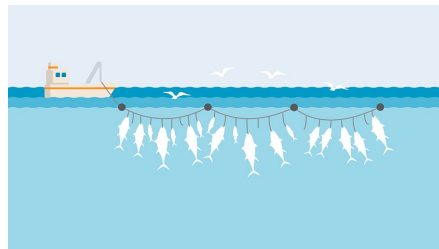


Longline Bumble Bee/FCF WCPO FIP

FIP Leads: FCF Co., Ltd. And Bumble Bee Seafoods

FIP Coordinator: Ocean Outcomes

Technical and Training Support: ISSF



MSC PRINCIPLES & SCORING SYSTEM

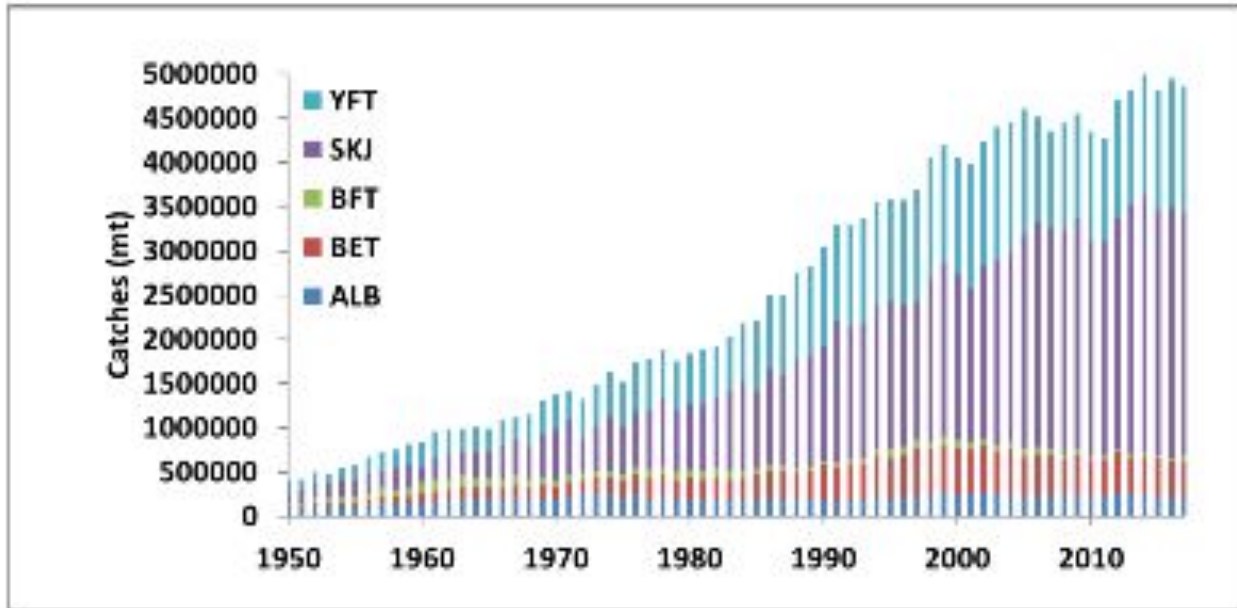


BUMBLE BEE FIP PRE-ASSESSMENT

	Key issues
P1 – Stock status	<ul style="list-style-type: none">• Lack of well-defined reference points and harvest control rules for both stocks, with agreement and application of the tools required to implement them in a way that is demonstrably effective.
P2 – Ecosystem impacts	<ul style="list-style-type: none">• Lack of verified and comprehensive bycatch and ETP data.• Data collection and reporting issues.• No management of secondary species.• Lack of measures and management action for ETP by national governments.
P3 - Governance	<ul style="list-style-type: none">• No application of sanctions (WCPFC)• Lack of compliance by fishers (WCPFC and Vanuatu).• Decision-making is not fully transparent (WCPFC and Solomons)• Not effectively responds to important issues (e.g. stock status) (WCPFC).• Evaluations of the Vanuatu national management system not conducted.

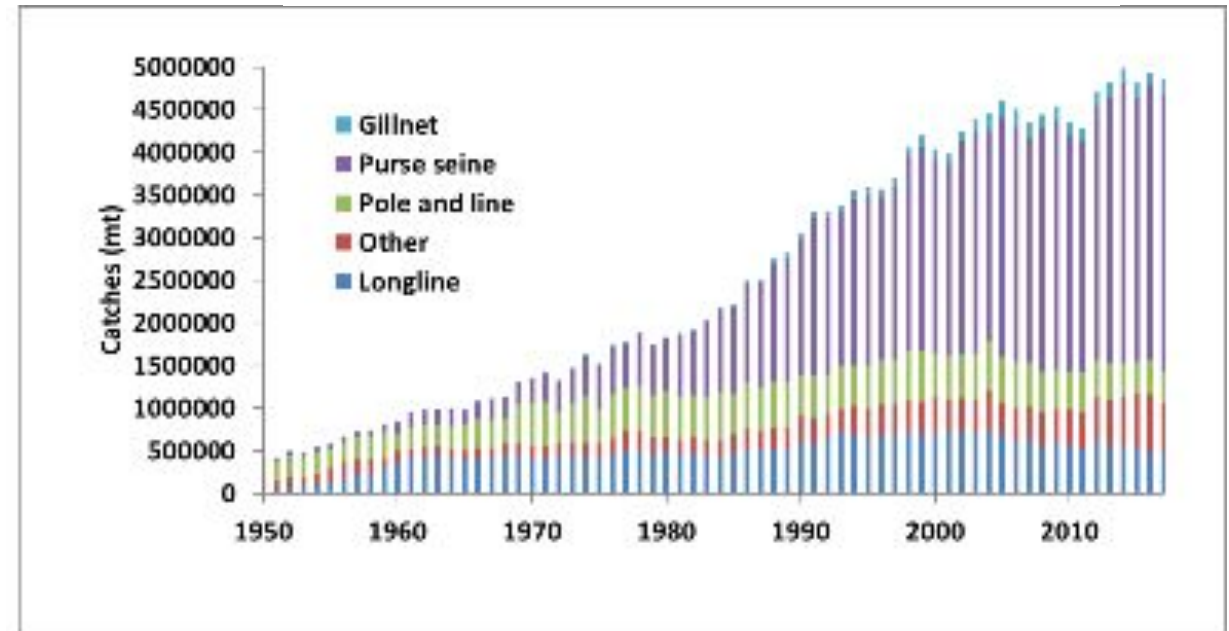
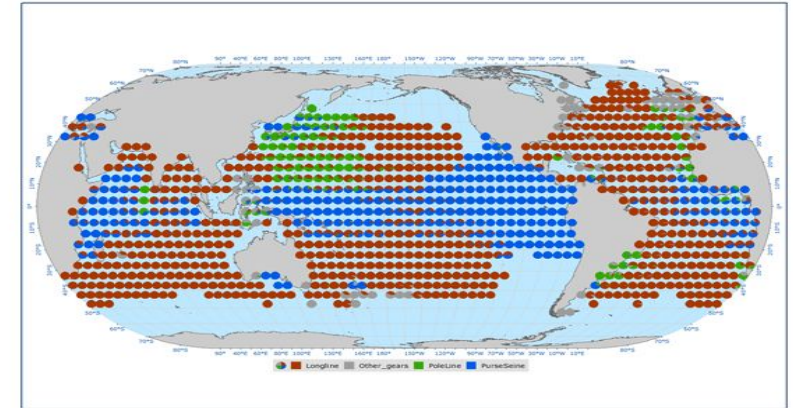
PRINCIPLE 1
SUSTAINABLE
TUNA STOCKS

GLOBAL TUNA CATCHES



Global catches tropical tuna are around 5 million tonnes.
Skipjack (56%), yellowfin (30%), bigeye (8%), albacore (5%)

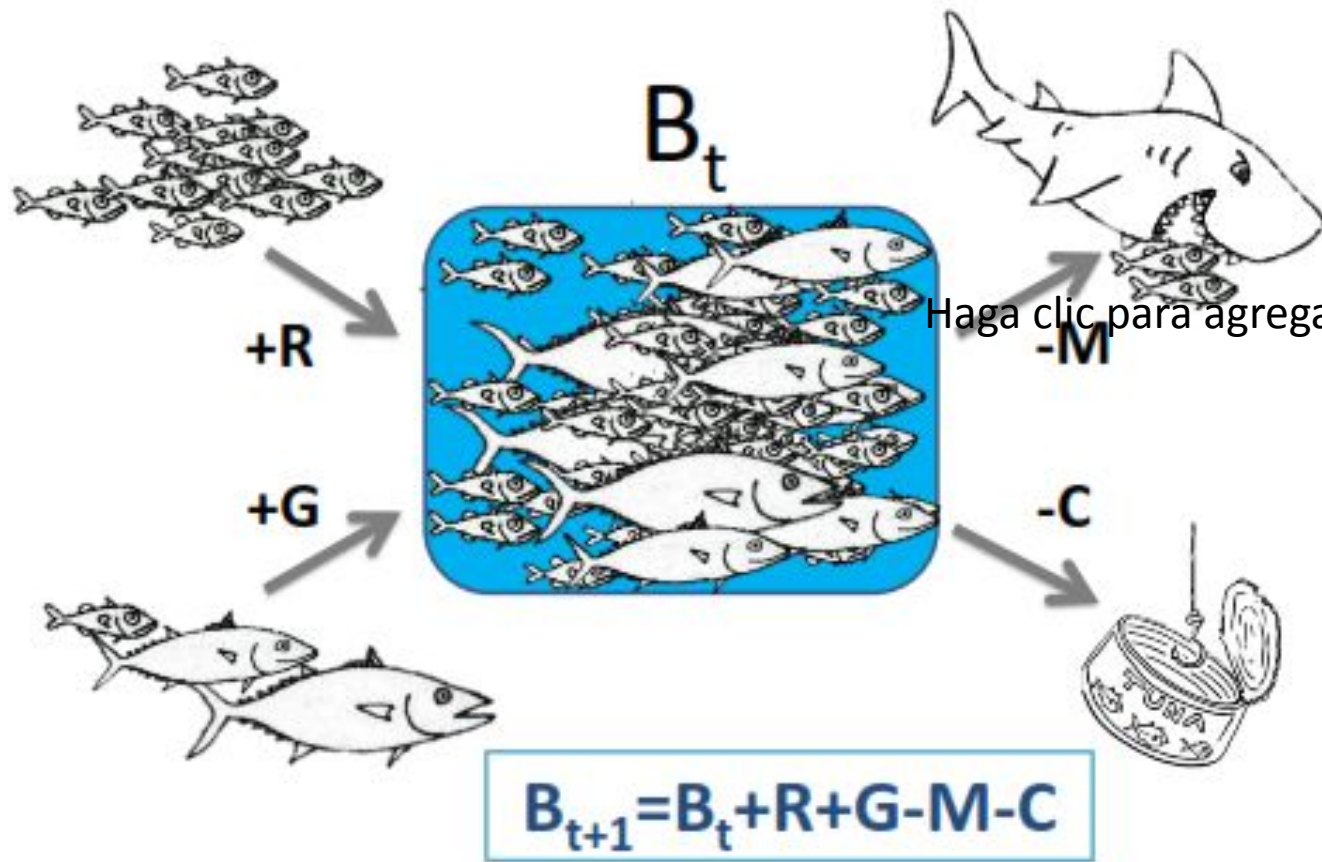
By fishing gear, 65% of the catch is by purse seining,
11% by longline, 8% pole and line, 4% gillnets and
12% miscellaneous gears



ISSF, 2019

[Link:](https://iss-foundation.org/about-tuna/status-of-the-stocks/)
<https://iss-foundation.org/about-tuna/status-of-the-stocks/>

P1 - STOCK ASSESMENTS



STOCK MODELS calculated with BIOLOGICAL + **FISHING DATA**

Assessment Models
used to provide
Management Advice

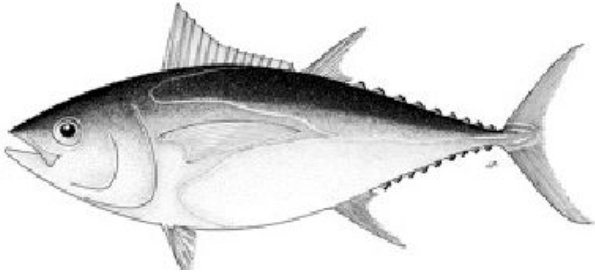
SS3

Model feature	SS3
Software availability	SS3
Population spatial structure / areas	4
Period	1950-2014
Number CPUE Series	4
Uses Catch-at-length	Yes
Tagging data	Yes
Age-structured	Yes
Sex-structured	No
Number of Fleets	21
Stochastic Recruitment	Yes

TOTAL TUNA = TUNA LEFT + RECRUITS + GROWTH - NATURAL MORTALITY - FISHING MORTALITY

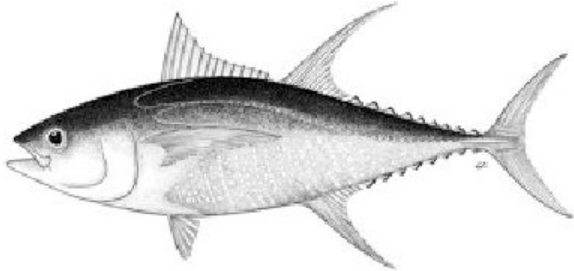
TUNA GENERAL BIOLOGICAL PARAMETERS

BET



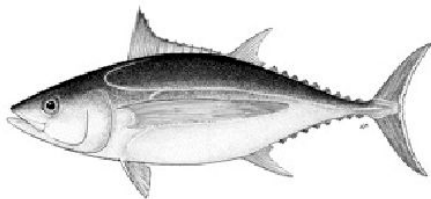
	SIZE (CM)	WEIGHT (KG)	AGE (Y)
COMMON	40-180	1.4-130	
MAXIMUM	230	210	15
MATURITY	102-135	25-57	3-4

YFT



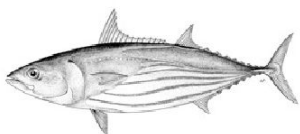
	SIZE (CM)	WEIGHT (KG)	AGE (Y)
COMMON	40-170	1.2-100	
MAXIMUM	205	194	8
MATURITY	85-108	12-26	2-3

ALB



	SIZE (CM)	WEIGHT (KG)	AGE (Y)
COMMON	40-100		
MAXIMUM	130		
MATURITY	75-90	8-15	2-5

SKJ

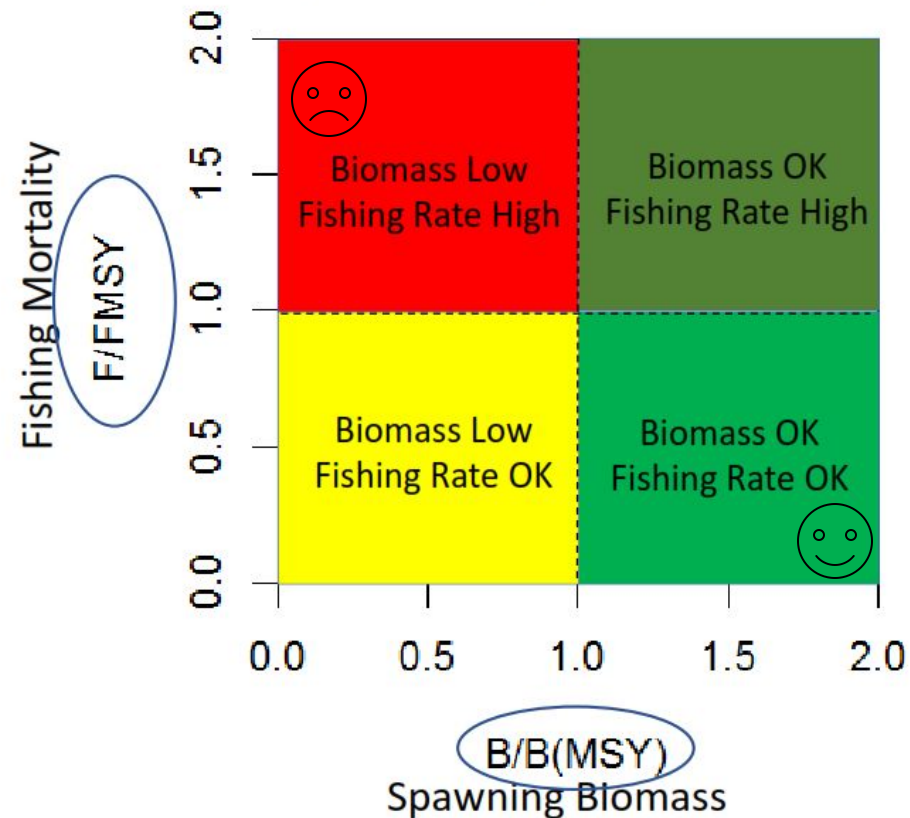


	SIZE (CM)	WEIGHT (KG)	AGE (Y)
COMMON	40-80		
MAXIMUM	108	33	6-10
MATURITY	43	1.6	1-1.5

KOBE PLOTS TO REPRESENT STOCK STATUS

The Kobe Plot

Where is your fishery now?



WCPO STOCK STATUS

ALBACORE

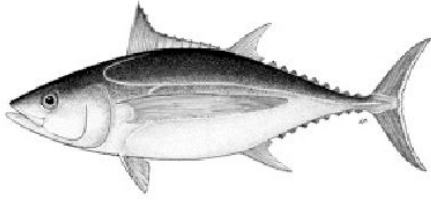


Figure PO-4. Latest estimate of SSB/SSB_{MSY} and F/F_{MSY} (in blue) for albacore tuna in the southern PO. Solid black line represents interim target reference point and dashed black line represents limit reference point. Note that the X axis has been adjusted to the SSB/SSB_{MSY} range.

YELLOWFIN

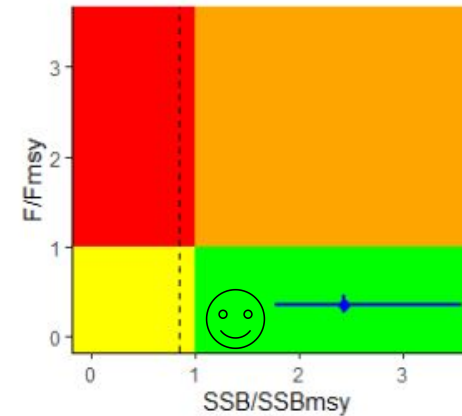
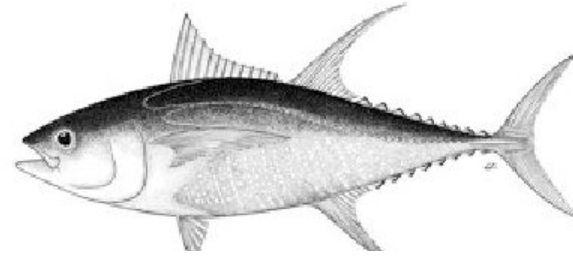
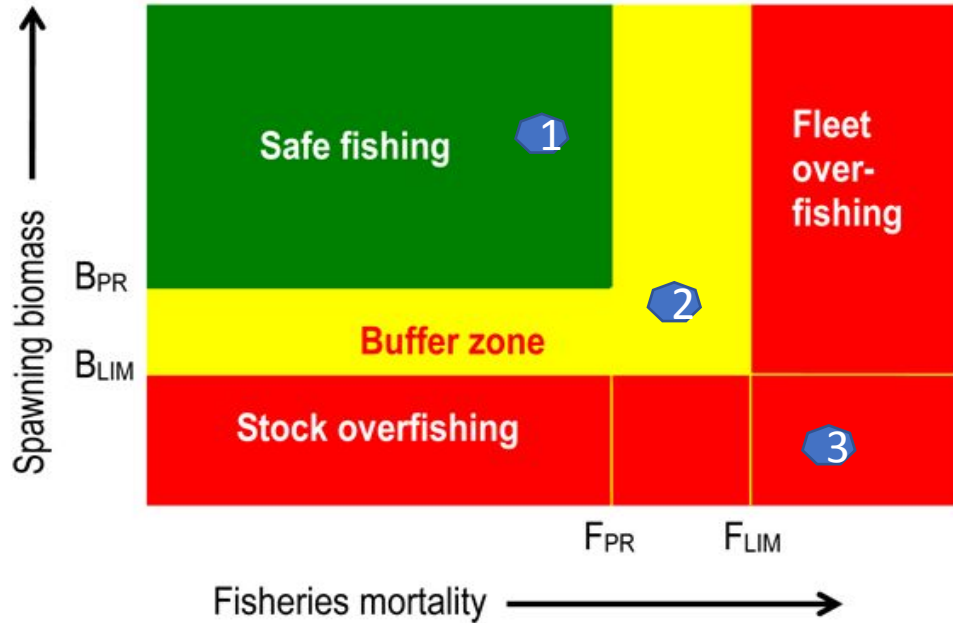


Figure WCPO-6. Latest estimate of SSB/SSB_{MSY} and F/F_{MSY} (in blue, including range) for WCPO yellowfin tuna. Dashed black line represents limit reference point.

At present both albacore and yellowfin tuna stocks show that they are not overfished and overfishing is not occurring

HARVEST CONTROL RULES



- Harvest Control Rules are pre-agreed actions taken when stock status situation changes, to prevent short-term interests
- **However, WCPFC has not defined yet a HCR for YFT.** Explicit harvest strategies and HCR are required to pass MSC

Recommendation by ISSF: Collaborate with other FIPS and stakeholders to support P1 (e.g. HCR) and P3 (e.g. monitoring and control system) actions.

本渔业改进项目的目标(以下统称项目目标):与其他项目和本项目的利益相关方合作,支持MSC原则1(如:捕捞控制规则)和原则3(如:监管系统)的改进行动

INFORMATION GAP IMPROVEMENTS

Stock Information and Monitoring:
资源信息和监管：

- **Improve provision of operational level catch and effort data at vessels & flag states**
- **提高船只和船旗国在捕捞层面渔获努力数据的提供能力**
- **Improve monitoring programs (discards, observer coverage)**
- **提升船上监控程序(如增加对丢弃物的监控, 提高观察员覆盖率等)**
- **Skipper training to improve data collection , including discards.**
- **对船长进行培训提高船上的数据收集能力, 包括对丢弃物的统计**
- **Development of verifiable bycatch code of practice and appropriate monitoring policies**
- **制定可验证的兼捕操作守则及适当的对应监督政策**

CHINA LONGLINE LOGBOOK

CHINA LONGLINE LOGSHEET - 中国金枪鱼延绳钓渔获日志		生产海区: 太平洋区 <input checked="" type="checkbox"/> 印度洋区 <input type="checkbox"/> 大西洋区 <input type="checkbox"/>		PAGE 1 OF 1	
NAME OF VESSEL 船名: 远望 901		COUNTRY OF REGISTRATION 注册国别: 中国		FISHING PERMIT OR LICENSE NUMBER(S) 渔船捕捞许可证/渔人渔获许可证号	
NAME OF FISHING COMPANY 船舶所有人/公司: 远望渔业公司		Vessel Number 渔船注册号: 远望 901		NAME OF CAPTAIN 船长姓名: 王德胜	
REGISTRATION NUMBER IN COUNTRY OF REGISTRATION 注册国别号: 82400		VESSEL SIZE 渔船长度/宽度: 43m / 8m		TARGET SPECIES 主要渔种: 金枪鱼	
INTERNATIONAL RADIO CALL SIGN 国际无线电呼号: 82400		LENGTH OF FLOAT LINE (KM) 浮绳长度: 40km		PORT OF ORIGIN 起运港: 上海	
LENGTH OF BRANCH LINE (M) 支绳长度: 30m		LENGTH BETWEEN BRANCH LINE (M) 支绳间距: 40m		THIS YEAR'S FIRST YEAR 今年首次: 2015.1.1	
BRANCH LINE MATERIAL 支绳材料: 2		BRANCH LINE SUPPORT 支绳支撑: 2		DATE AND TIME OF ARRIVAL 到达日期/时间: 2015.1.1 08:00	
SET DETAILS 下网信息		NO. OF SETS 2		NO. OF SETS 2	
LATITUDE (T) (N/S) 20°N		LONGITUDE (E/W) 120°E		NO. OF SETS 2	
LONGITUDE (E/W) 120°E		NO. OF SETS 2		NO. OF SETS 2	
SET START TIME: 18:00		NO. OF SETS 2		NO. OF SETS 2	
NUMBER OF HOURS: 24		NO. OF SETS 2		NO. OF SETS 2	
HOURS BETWEEN FLOATS: 24		NO. OF SETS 2		NO. OF SETS 2	
CATCH 渔获信息		NO. OF SETS 2		NO. OF SETS 2	
ALBACORE 金枪鱼		15		225	
BIGEYE 大眼金枪鱼		20		600	
SKIPJACK 鲐鱼		10		300	
YELLOWFIN 黄鳍金枪鱼		10		300	
BLUEFIN 蓝鳍金枪鱼		10		300	
SPINACH 鲐鱼		10		300	
BLUE MARLIN 蓝枪鱼		10		300	
STRIPED WHITE MARLIN 条纹白枪鱼		10		300	
BLACK MARLIN 黑枪鱼		10		300	
SALEFISH 箭鱼		10		300	
SHORTBILL LONGBILL 短嘴长嘴		10		300	
BLUE SHARK 蓝鲨		10		300	
SHORTFIN Mako 短鳍马鲛		10		300	
HAMMERHEAD SHARK 锤头鲨		10		300	
OCEANIC WHITE TIPS 大洋白鳍		10		300	
POINTE SHARK 点鲨		10		300	
SILVER SHARK 银鲨		10		300	
THRESH SHARK 姥鲨		10		300	
TIGER SHARK 虎鲨		10		300	
OTHER SHARKS 其他鲨鱼		10		300	
MANTA 蝠鲼		10		300	
SEA TURTLE 海龟		10		300	
SEA SNAKE 海蛇		10		300	
NAME OF CAPTAIN 船长姓名: 王德胜		DATE 日期: 2015.1.1			

P1 RECOMMENDED BEST PRACTICES – catch and effort reporting

Operational-level data (set-by-set) no required by all RFMOs but useful for stock assessment:

捕捞层面的渔获数据统计并非所有区域性渔业组织(RFMOs)的规定要求, 但这些数据对评估渔业资源状况而言是非常有用的

- Catch in weight and numbers for each species 每一捕获物的重量和数量统计
- If discarded, numbers released by individual species 若存在丢弃物, 每一丢弃种的数量
- Start and finish times of set 钓具放出和完成的时间
- Position (latitude, longitude) 位置(经纬度)
- Number of branchlines between two floats 两浮标间的支线数量
- Number of hooks in set 每一组钓具中的鱼钩数量
- Types of hooks and bait 鱼钩及鱼饵类型



INFORMATION GAP CHECK


- ☐ Are there gaps in logbook and observer data sets?
- ☐ Are logbooks being sent to flag state and data to WCPFC?
- ☐ Are discards being recorded?
- ☐ Do logbooks distinguish between releases of live (healthy) and releases/dicards of unlikely to survive/dead fish?
- ☐ Are estimates of discards both in weight and numbers?
- ☐ Does the logbook have species names in skippers' native language?
- ☐ Do the skippers know how to identify all species and have an identification guide for consultation?
- ☐ Is e-logbook reporting available?

SPC LOGBOOK EXAMPLE

[illegible]

In 2020 Suva port visit
non-English speaking
captains were filling in
English only logbooks!!

Make sure logsheets are in English **and also native language** for captains to understand logbook required fields.

Can be downloaded from 

<https://oceanfish.spc.int/en/data-collection/241-data-collection-forms>

GOOD QUALITY LOGBOOK EXAMPLE – AUSTRALIA LONGLINE



Australian Government

Australian Fisheries Management Authority

www.afma.gov.au

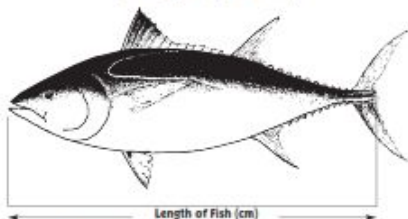
Australian Pelagic Longline Daily Fishing Log

Commonwealth of Australia

AL06

GOOD QUALITY LOGBOOK EXAMPLE

How to Measure Your Fish (For Tag Recapture Form)



- Make sure mouth is closed;
- Measure the fish on its side, as soon as possible after capture;
- Measure alongside or under the fish (in centimetres), from mouth to tail fork.

FORM CODES

W = Whole
GG = Gilled and Guttled (sashimi)
HG = Headed and Guttled (Tuna)
F = Filleted
BI = Bile only
TR = Trunked (Headed & Guttled)
SHARK ONLY

BAIT CODES

SQO = Squid
PIL = Pilchard
MAY = Yellowtail scad
MAC = Mackerel
MAS = Blue Mackerel
MIX = Mixed Fish

DISCARD / RETAINED CODES

MP = Marketable species but it was considered uneconomical to land on this occasion.
US = Fish is below a regulated minimum size or it is a size that makes it unmarketable.
UM = Markon place considers it to be inedible.
DM = Unmarketable due to damaged during capture or hauling.
TL = Fish marketable but trip limit already reached.

TW = Toothed whale damage
SD = Shark damage
CC = Cooks cutter shark damage
SQ = Squid damage
SB = Seabird damage
UK = Unknown

MITIGATION MEASURES CODES

TORI = bird scaring line & pole
THAW = thawed bait
PSBL = punctured swim bladder (Bait)
NSET = night setting
LWEI = live weighting (branch line)
CHUTE = under-water setting chute
CAPS = under-water setting capsule
DYED = dyed bait
OTHER = please describe in comments section, eg. bait casting machine
NAPP = eg. fishing north of 35° or caught during haul

- All details must be completed on a shot-by-shot basis and the logbook must be completed before the boat docks at the conclusion of each trip.
- This book must remain within a 50 metre radius of the nominated vessel.
- Logsheet(s) must be sent to AFMA with corresponding CDR(s) within 3 days of the trip end date.
- You must record information in this logbook for every day that your fishing concession is in force, regardless of whether or not you fish on that day (see instructions for non-fishing section).
- It is your responsibility to ensure that you are aware of the catch limits and regulations for all species under state jurisdiction.

Don't forget to insert this template under the log page you're writing on

Australian Fisheries Management Authority
Box 7051
Canberra Mail Centre ACT 2610

Australian Pelagic Longline Daily Fishing Log – AL06

NOTE: DO NOT USE A SINGLE PAGE FOR MORE THAN ONE TRIP

Original Copy – Send to AFMA

Boat Name: **Cormorant** Dist. Symbol: **LFB963** Log No. Page No.

Port Departed: **SYDNEY** Date Departed: **25 / 6 / 07** NON-FISHING PERIOD: I did not work between **19 / 6 / 07** and **24 / 6 / 07**

Port Returned: **ULLADALLA** Date Returned: **27 / 6 / 07**

Non-Fishing Codes (reasons):
 1 – Bad Weather 2 – In Port 3 – Broken Down
 4 – Scurrying 5 – Searching 6 – Other Fishery reasons:
 1B – Bait

SHOT INFORMATION		Shot 1 Date: 26/6/07	Shot 2 Date: 27/6/07	Shot 3 Date:
Target species		Yellowfin, Bigeye	Yellowfin, Bigeye	
Start set time (24h)		0300	0230	
Start set Lat. (dd mm)		33 35	36 31	
Position Long. (ddd mm)		151 42	151 55	
End set time (24h)		0610	0915	
End set Lat. (dd mm)		35 19	36 25	
Position Long. (ddd mm)		151 40	151 40	
Start haul time (24h)		1500	1300	
Start haul Lat. (dd mm)		35 20	36 20	
Position Long. (ddd mm)		151 41	151 42	
End haul time (24h)		2200	1900	
End haul Lat. (dd mm)		33 36	36 30	
Position Long. (ddd mm)		151 40	151 56	
Vessel shooting speed (kt)		7	7	
Marine length/No.		30 m/1000	25 m/700	
Line checker used (CIRCLE)		Yes	Yes	
Seabird mitigation measure used (CIRCLE) (see legend)		CHUTE	CHUTE	
Targeted depth (m metres)		30 m	30 m	
No. of hook/s used		6	6	
Bait species/ source(s)/size (catch/weight/s) used for shot		SQO (S) L (U) 50 kg	SQO (S) L (U) 35 kg	
		MAY (S) L (U) 50 kg	PIL (S) L (U) 45 kg	
CATCH DETAILS				
Yellowfin Tuna		11 350 GG 3 US	14 480 GG 1 DM	
Bigeye Tuna		4 150 GG	6 160 GG 4 TL	
Albacore Tuna		7 50 W	4 40 W	
Southern Bluefin Tuna				
Broadbill Scaupfish			2 90 TR	
Singed Marlin		1 35 TR		
Shortfin Mako			3 10 GG	
Raj's Dream				
Moonfish				
Rubberfish				
Gilthead Thresher				
Opah				
Whale				
Leopardfish			4 UM	
Short Finned Mako Shark		1 80 TR	1 US	
Bonnet Head Shark				
Grey Nurse Shark			4 UM	
Blue Shark				
Scalloped Hammerhead Shark				
Thresher shark		4 60 GG	1 UM	
Yellowfin		1 20 GG	SB	
Bigeye		3 25 W	SB	
Other Species				
No. Fish Species				
Species		Number Released	Dead	
Blue Marlin			1	
Black Marlin			1	

Did you have an Observer on Board (circle) **(NO)** / Yes Observer Trip ID

Did you have an interaction with a Listed Marine or Threatened Species? (circle) **Yes** / **(NO)**

Please provide an estimate of the time taken to complete this form: **10** mins

Further details of all Listed Marine and Threatened Species interactions must be recorded on the Listed Marine and Threatened Species Form at the back of the logbook.

Concession holder or authorized agent - I certify that the information provided on this form is a true and accurate record.

Printed Name: **Tim Gardener**

Signature: **7 Gardener** Date: **27 / 6 / 07**

Comments: **5 fish damaged by sharks in first shot but fish still retained**

NOTE • If tagged fish / animals or banded birds are captured, please complete tag form at back of book and return to AFMA.

GOOD QUALITY LOGBOOK EXAMPLE

[illegible]

Date		Boat Name	Dist. Symbol	Home Port	Log No.
Gear and Boat Details					
Vessel Details					
Trawl Type (Tick)	Mon	<input type="checkbox"/>	Multi	<input type="checkbox"/>	
Vessel Colour	<input style="width: 100%;" type="text"/>				
Length (LDA)	<input style="width: 100%;" type="text"/> metres				
Beam	<input style="width: 100%;" type="text"/> metres				
Draught	<input style="width: 100%;" type="text"/> metres				
Displacement	<input style="width: 100%;" type="text"/> tonnes				
Fish Hold Capacity	<input style="width: 100%;" type="text"/> tonnes				
Main Engine Power	<input style="width: 100%;" type="text"/> kW				
Fuel Capacity	<input style="width: 100%;" type="text"/> litres				
Maximum Range	<input style="width: 100%;" type="text"/> nautical miles				
Cruise Speed	<input style="width: 100%;" type="text"/> knots				
Vessel Phone Number	<input style="width: 100%;" type="text"/>				
Mobile Number	<input style="width: 100%;" type="text"/>				
Facsimile Number	<input style="width: 100%;" type="text"/>				
Please place a Y (Yes) or an N (No) in the adjacent square to indicate whether your vessel is equipped with any of the following equipment.					
Sea Surface Temp. Recorder (Y/N)	<input type="checkbox"/>	Echo Sounder (Y/N)	<input type="checkbox"/>		
Inertial A, B or C (Y/N)	<input type="checkbox"/>	Radar (Y/N)	<input type="checkbox"/>		
Weather Facsimile (Y/N)	<input type="checkbox"/>	Sonar (Y/N)	<input type="checkbox"/>		
GPS (Y/N)	<input type="checkbox"/>	Plotter (Y/N)	<input type="checkbox"/>		
Sea Surface Imagery (Y/N)	<input type="checkbox"/>				
Gear Details					
Mainline material	<input style="width: 100%;" type="text"/>				
Mainline diameter (mm)	<input style="width: 100%;" type="text"/>				
Mainline length (km)	<input style="width: 100%;" type="text"/>				
Branchline haulers? Y/N <input type="checkbox"/> Line dresser hauler? Y/N <input type="checkbox"/>					
Hobbs	Net Type	Net Size		Fitted to % of Branchlines	
	Circle				
	Japanese (J)				
	Other				
Sonobu	Net Type (g)		Fitted to % of Branchlines		
	Gly				
	Gly				
	Other — g				
Other Comments					
<input style="width: 100%; height: 40px;" type="text"/>					
Trawl Pole Details					
Height above sea level					
<input style="width: 100%;" type="text"/>					
Main trawl line length					
<input style="width: 100%;" type="text"/>					
Diameter of trawl line					
<input style="width: 100%;" type="text"/>					
No. of streamer poles					
<input style="width: 100%;" type="text"/>					
Alternative to trawl pole (ie. undertrawl setting, capsule or drape)					
<input style="width: 100%;" type="text"/>					
Other commensurate other mitigating devices					
<input style="width: 100%;" type="text"/>					
Vessel Master's Details					
Name					
<input style="width: 100%;" type="text"/>					
Address					
<input style="width: 100%;" type="text"/>					
<input style="width: 100%;" type="text"/>					
<input style="width: 100%;" type="text"/>					
Vessel Master's Experience					
Fishing Type				Years Experience	
Pelagic Longline				<input style="width: 100%;" type="text"/>	
Demersal Longline				<input style="width: 100%;" type="text"/>	
Other				<input style="width: 100%;" type="text"/>	
Other				<input style="width: 100%;" type="text"/>	
Concession Holder's Details					
Name					
<input style="width: 100%;" type="text"/>					
Address					
<input style="width: 100%;" type="text"/>					
<input style="width: 100%;" type="text"/>					
<input style="width: 100%;" type="text"/>					
Concession Holder's Contact Numbers					
Business					
<input style="width: 100%;" type="text"/>					
Home					
<input style="width: 100%;" type="text"/>					
Mobile					
<input style="width: 100%;" type="text"/>					
Facsimile					
<input style="width: 100%;" type="text"/>					
Other					
<input style="width: 100%;" type="text"/>					
Vessel Master's Contact Numbers					
Business					
<input style="width: 100%;" type="text"/>					
Home					
<input style="width: 100%;" type="text"/>					
Mobile					
<input style="width: 100%;" type="text"/>					
Facsimile					
<input style="width: 100%;" type="text"/>					
Other					
<input style="width: 100%;" type="text"/>					

ELECTRONIC LOGBOOKS

- Save captain time and effort
- Easy software interface and multiple output formats for different authorities (port, RFMO, state, etc.)
- Near Real-Time information for company and fishery managers

WORLD FISH 1.58r14

Descartes de otras especies

1. Pinchar sobre nuevo

2. Seleccionar la pestaña de "Otras especies"

3. Introducir la información de la especie.

4. Pinchar sobre añadir

Descartes de túnidos

1. Pinchar sobre nuevo

2. Seleccionar la pestaña de "Túidos"

3. Introducir la información de la especie.

4. Pinchar sobre añadir

1. Pinchar sobre informe y declaración de capturas 2. Elegir zona, fecha, especie

1. Pinchar sobre informe y declaración de capturas

2. Elegir zona, fecha, especie

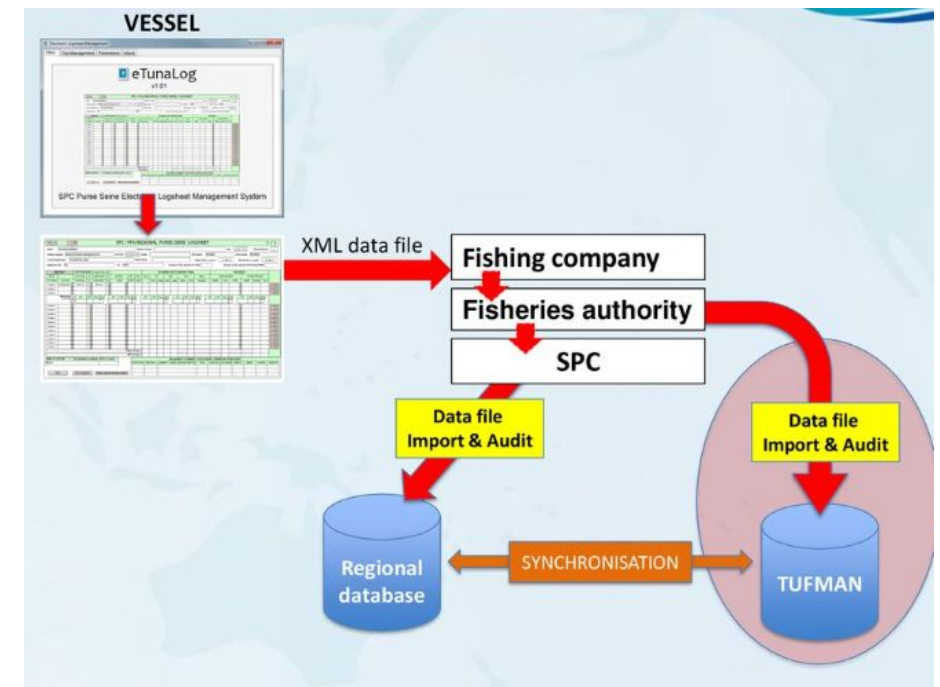
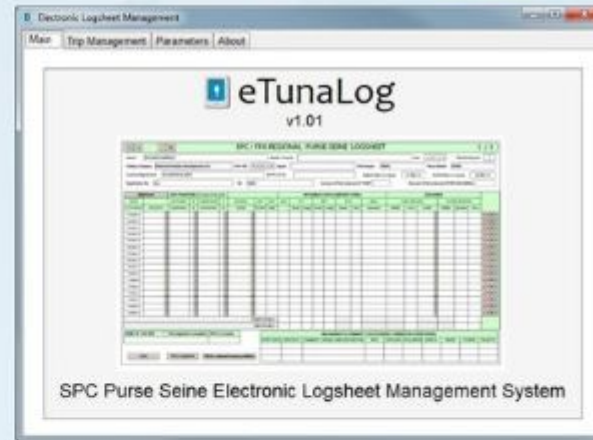
3. Elegir el buque

4. Elegir el tipo de informe



EXAMPLE PS ETUNA LOG IN WESTERN PACIFIC

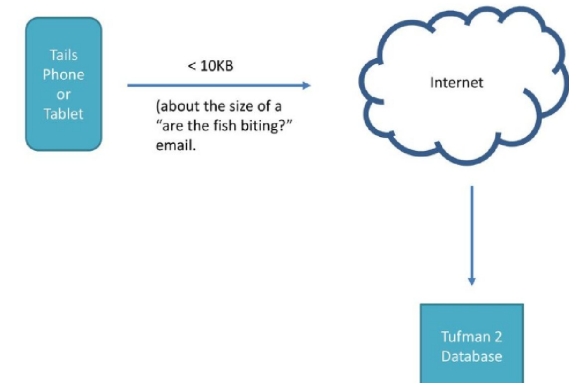
1. Installed on vessel's computer
2. Smart Logsheet vs paper logsheet
3. Trip data sent by email
4. Data received **easily loadable into databases**
5. PDF Logsheet is almost **identical to regional standard logsheet**



LONGLINE ANDROID LOGSHEET

The screenshot shows the 'OnBoard' DATA ENTRY APPLICATION interface. The main screen has a blue header with the app name and a list of icons: EDIT LOGSHEET, ACTIVITIES, FINISH LOGSHEET, and UPLOAD. Below this is a photo of a fishing boat. To the right, the 'Activity - Details' form is visible, containing fields for Log date (March 17, 2017), Activity (1 A set), Latitude (2200 N), Longitude (15800 W), Start time (14:13), Num hooks (2100), Hooks btw floats (35), and Whale pred.?. At the bottom are 'Catches' and 'Done' buttons.

The screenshot shows the 'Catch - Details' form. It includes sections for Tuna species (ALB, YFT, BET), Other species (WAH, DOL, BUM, BLM, MLS, SWO, FAL, OCS, SMA, LMA, BSH, PTH), Species (YFT, YELLOWFIN), # retained (5), Kg retained (100), and # discarded. At the bottom are 'Add new Catch' and 'Done' buttons.



VOLUNTARY DATA – IMPROVE SCIENTIFIC ADVICE



New Zealand and Fiji rewarded for their efforts in major Pacific shark tagging study

8 June 2018

One of the aims of the Common Oceans ABNJ Tuna Project is to reduce the impacts caused by tuna fishing on biodiversity in the marine areas beyond national jurisdiction (ABNJ) by improving data and assessment methods for sharks, thereby promoting their effective management. As part of this project, the Western and Central Pacific Fisheries Commission, with technical support from the National Institute for Water and Atmospheric Research (NIWA) of New Zealand and additional funding from the European Union, is conducting a major study of shark post-release mortality. While many sharks caught on tuna longlines are retained and recorded as catch, others are released alive. However, the survival rate of the released sharks is unknown and this magnifies uncertainties when evaluating shark stock status and the effectiveness of no-retention management measures.



Silky Shark Tagging Project

When our purse seiner Jai Alai (<https://echebaster.com/sobre-nosotros/>) leaves port in Seychelles on October 22nd for a 28-day fishing trip in the Indian Ocean, it will have on-board a more equipment that usual. It will carry highly sophisticated fish tags that will be attached by a specialist fishery expert, who will specially embark on the vessel to sample the limited number of silky sharks that are taken as a by-catch in some of the

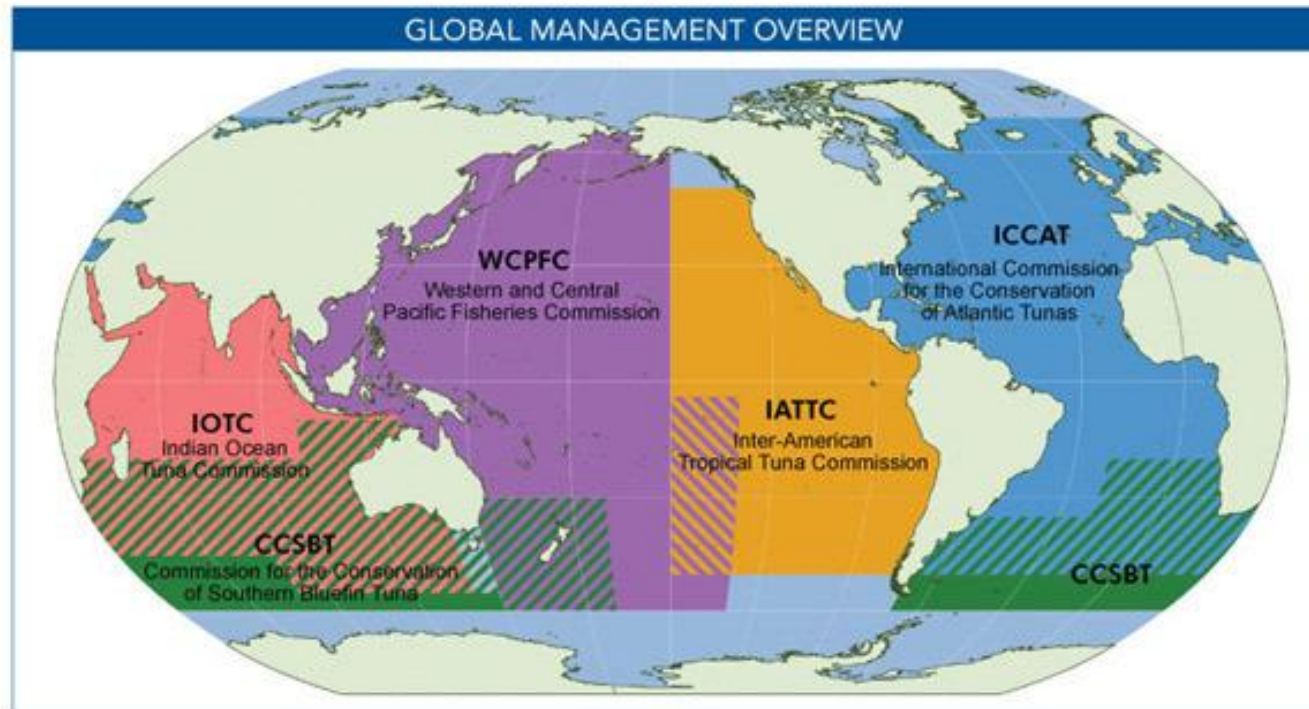
- Potential stock evaluations and ecosystem improvements (e.g. collecting samples, photos, etc.)
- Collaboration in tagging programs, test of novel mitigation gear, etc...

Recommendation by ISSF: Provide high quality logbook information, preferably electronically, with species identified, number, weight and sizes, and animals released or discarded (life status) recorded. Ensure reports are provided to RFMOs.

项目目标：提供高质的渔捞日志信息，最好以电子形式提供，其中包含识别物种名称、数量、种类和尺寸，和释放或丢弃动物（含丢弃时状态）的记录。确保相关记录报告提供给所属的区域性渔业组织（RFMOs）

RFMOs LONGLINE OBSERVER REQUIREMENTS

- Tuna purse seiner human observer coverage (IATTC, ICCAT, WCPFC 100%)
- ISSF Tuna purse seiner human/electronic observer coverage 100%
- Longline human observer coverage (IATTC, IOTC, WCPFC 5%), ICCAT 10%
- Many NGOs, retailers calling for **100% observer coverage in longliners next 5 years**



OBSERVER INFORMATION

□ **Low levels of observer coverage** result:

- 1) inaccurate data on target and bycatch species/ illegally
- 2) underreported and mis-reported caught fish
- 3) fishing beyond the authorised zones
- 4) shark finning.

□ Flag state has right to request observer data, but can be **difficult obtaining original observer reports.**

□ Discussion for moving to **e-reporting and electronic monitoring systems** (NGOs, retail pressure)

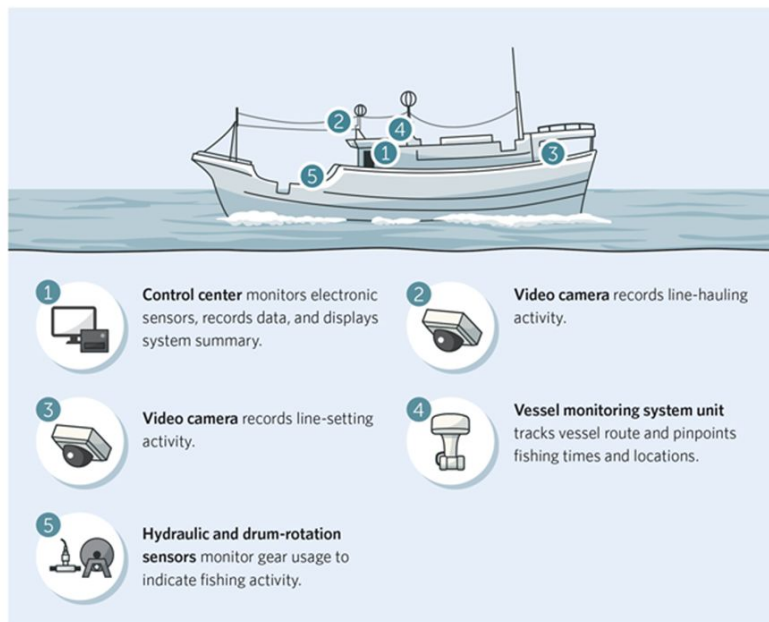
□ **Covid-19 highlights needs for EMS (e.g. transshipments) and long-term easier/cheaper**

□ **Application developments** to allow operators and observers to report catch data electronically on a **daily basis**

□ **FIP vessels should develop data access, and sharing plans/agreements, internally and with other partners**

LONGLINE ELECTRONIC MONITORING OBSERVER TRIALS

Figure 1
How Electronic Reporting Improves Fisheries Management
Onboard technology yields better catch data



© 2016 The Pew Charitable Trusts



•Cam 1: Starboard and forward



•Cam 2: Aft section (shooter and bait station)



• Cam 3: Fish processing area

Sensor in the drum (trigger)



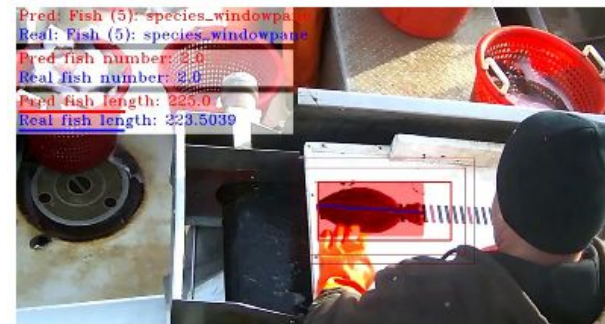
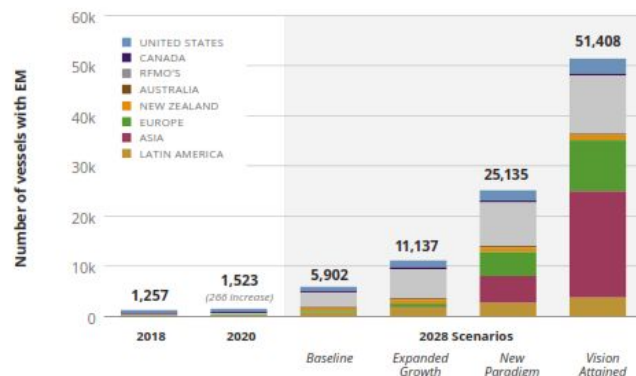
ONGLINE ELECTRONIC MONITORING SYSTEMS (EMS) GROWING FAST

- Over 1500 vessels have EMS, and predicted to **increase by x20 in 10 years**.
- Electronic monitoring allowing for **more flexible management**, with some instances of increasing individual target quotas and scaling back time/area closures. Also less IUU activities means more fish.
- **Examination of 20-30% trips sufficient** for good data. Onboard artificial intelligence for species recognition will further reduce analysis time/costs.
- Implementing bulk procurement with **coordinated bidding processes will reduce buying costs**.

FIGURE 1

Growth of EM systems from 2018 to 2020 and future scenarios for EM in 2028

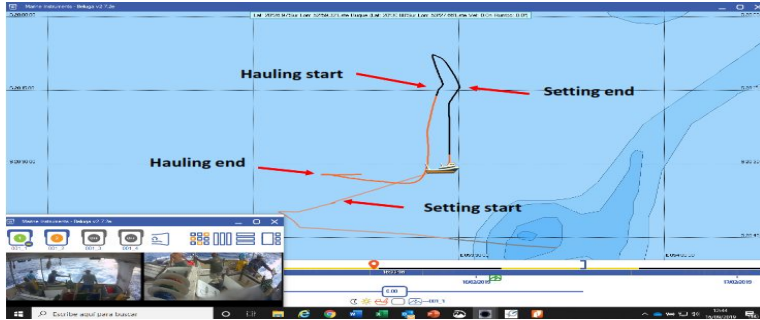
The number of EM systems are estimated based on literature review and expert interviews. Numbers are approximate and may not be comprehensive.



Length measurement using AI, Rhode Island.
Photo: Ayla Fox / The Nature Conservancy

LONGLINE ELECTRONIC MONITORING

HAULING POSITIONS



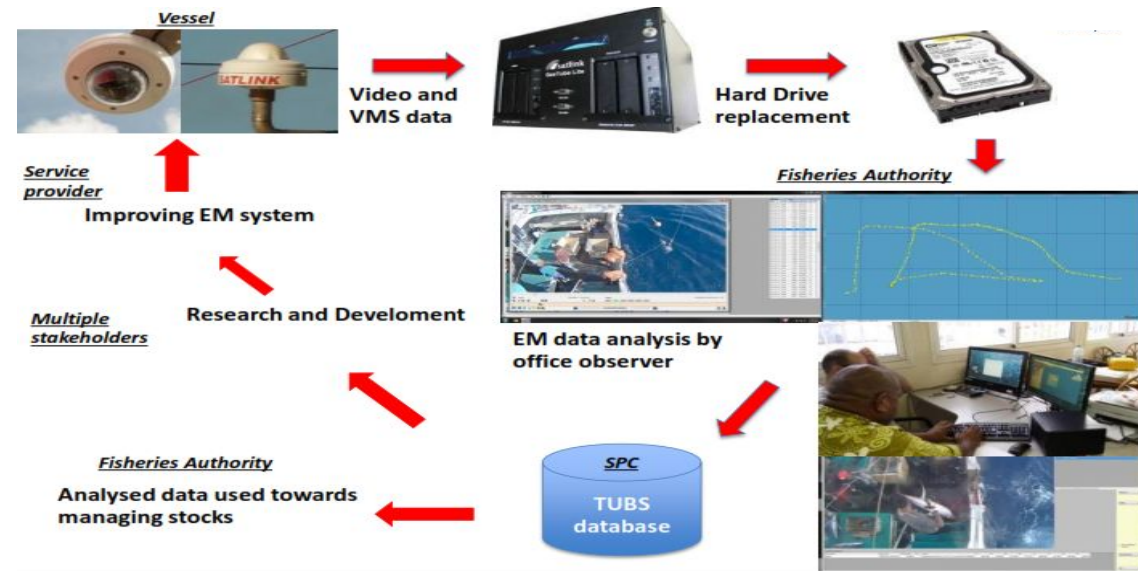
LENGTH SAMPLING



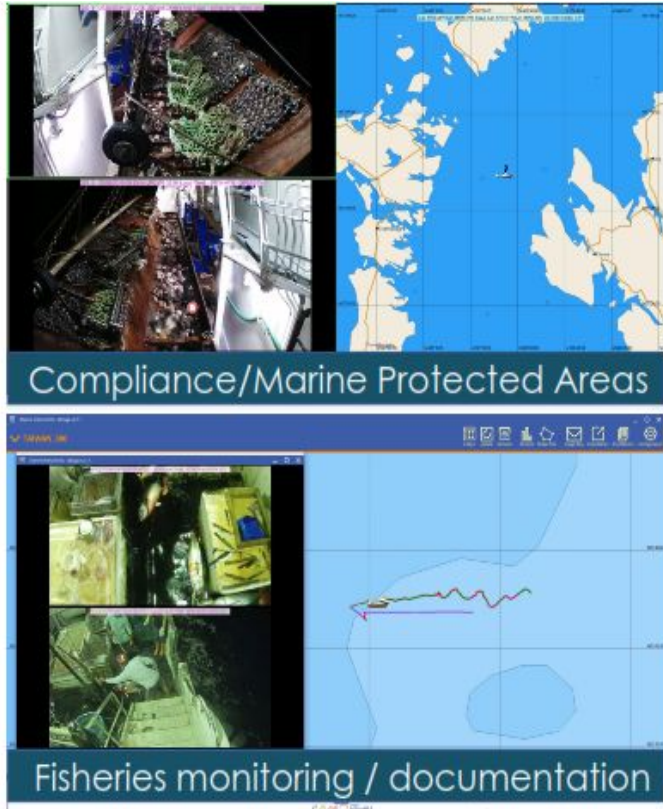
DATA ENTRY

Work on integrating e-logs and e-monitoring into RFMO formats and information requirements

ISSF produced minimum standards for e-observers as reference for RFMOs



LONGLINE ELECTRONIC MONITORING OBSERVER TRIALS



PROS

- Robust data for science and enforcement
- Tamper proof and auditable
- Cost efficient
- Access vessels with limited space
- Reduced health/safety risks
- Better compliance
- Improved data quality (e-logs)
- Compliance (MPAs, data, transshipment)
- Independent, retailer trusted fishery data
- Prevent de-certification

CONS

- Maintenance, servicing
- No weight measures
- No tagging
- No otolith/genetic samples
- Industry privacy, public image concerns
- Price analysis data



BUILD
DEMAND



REDUCE
COSTS



SUPPORT
REGULATORS



PROMOTE
INDUSTRY
LEADERSHIP

Recommendation by ISSF: Aspire to 100% scientific electronic observer coverage on all FIP vessels (with at least 20% analysed) including sampling at landing and transshipment operations to demonstrate compliance with RFMO, national government and market obligations

项目目标：追求实现项目渔船上，电子观察员的100%覆盖率（并对至少20%的监控数据进行分析），包括对港口卸货和转载行为进行电子监控片段的分析，证明操作符合RFMO、国家政府的规定及市场端的要求

SUMMARY

P1 SUSTAINABLE FISH STOCKS RECOMMENDED BEST PRACTICES

Promote de adoption of measures by RFMOs: 推动RFMOs对以下措施的采纳:

- **Identifying share of the catch/effort and ensuring stock levels consistent with MSY** 识别捕捞努力水平并确保现存资源量与最大可持续产量相一致
- Adoption of harvest strategies (e.g. reference points) 实施渔获策略(如:制定参考点)
- Science-based capacity limits for all gears 对所有渔具制定基于科学的容量上限
- If target stock overfished, adoption of a rebuilding plan 若目标资源被过度捕捞, 执行资源恢复计划
- Demonstrate no shark finning is taking place (e.g. human/electronic observers) 验证不存在鲨鱼割鳍行为(如科学或电子观察员)

Support research and capacity building of: 支持科研和以下领域的能力建设:

- Management Strategy Evaluation for testing harvest strategies 通过测试渔获策略来对渔业管理策略进行评估
- Research for selective gear, stock structure and productivity 研究选择性渔具, 资源组成和生产力
- Support equal level of monitoring for all fisheries and gears 支持对所有渔业和渔具的平等监管
- Support training of regional observers or alternatives like electronic monitoring 支持对区域性渔业观察员的培训或建立其它替代措施(如电子监控)

Evaluate and assist compliance with RFMO requirements: 评估和协助遵守RFMO规定

- Comply with flag state and RFMO reporting requirements for fisheries statistics (detailed effort and species information)*
- 遵守RFMO和船旗国对渔业统计的汇报规定(具体的渔获努力和物种信息数据)
- Longline data gaps for stock assessment, facilitate such data
- 对当前延绳钓中缺乏的数据进行收集以用于资源评估

P2 – MINIMIZING ENVIRONMENTAL IMPACTS

LONGLINE

BYCATCH IMPACT

ETP SPECIES
OVERFISHED TUNAS
BAIT

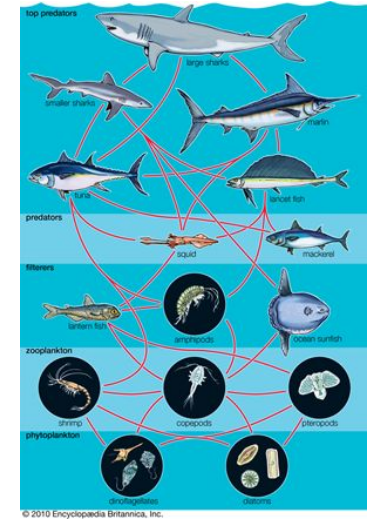
HABITAT IMPACT

ABANDONED GEAR
VESSEL RUBISH

MSC PRIMARY, SECONDARY, ETP SPECIES

SPECIES CATEGORY	TYPE
Primary*	Targeted and managed (e.g. YFT, BET)
Secondary*	Caught but not managed (e.g. mahi-mahi, barracuda)
Endangered, Threatened or Protected (ETP)	Listed as ETP by legislation (sharks, marine turtles, seabirds)

- **MAIN SPECIES**: primary and secondary species making > 5% catch weight
- **MINOR**: < 5% catch weight



If BET, YFT, SKJ are in P1, unlikely be any main or minor primary species. Unless there are stocks with management tools and measures (e.g. swordfish, marlin)

Bait species likely classified as Main Secondary (check origin and amount of bait sourced)

Minor Secondary species will include swordfish, billfishes, mahi-mahi, wahoo, opah, barracuda, perhaps some sharks. Depending on catch percentages, some could be Main Secondary.

NECESSARY TO HAVE GOOD CATCH DATA TO KNOW TO WHICH CATEGORY EACH SPECIES BELONGS & IMPLEMENT STRATEGIES

BYCATCH RFMO CONSERVATION MEASURES

Group	WCPFC CONSERVATION MEASURES
Sea turtles	CMM2018-04 (HANDLING, LL TOOLS)
Sharks	CMM2010-07 (DATA, FIN RATIO, RELEASE), CMM2011-04 (NO RETENTION WHITETIP), CMM2013-08 (NO RETENTION SILKY SHARKS), CMM2012-04 (NO PS WHALESHARKS, REPORT), CMM2014-05 (NO SHARK LINES, IPOA-SHARKS)
Sea birds	CMM2018-03 (MITIGATION GEAR, RESEARCH)
Non-target sp.	CMM2010-01 (LL LIMIT STRIPED MARLIN)

WHAT CAN SHIP-OWNERS DO? 船东能做什么？

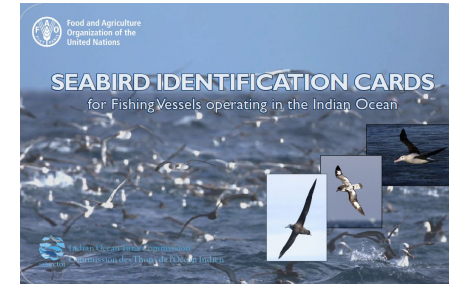
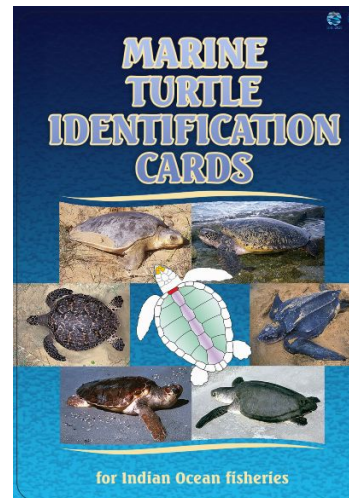
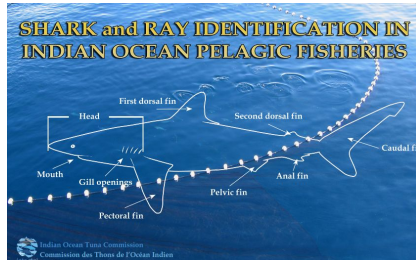
- Inform captains and crew bycatch mitigation is an important issue for the company
- 告知船长和船员缓解兼捕问题对公司而言很重要
- Ensure skippers and crew are trained in best release practices, know regulations and can ID species
- 确保船长和船员获得兼捕最佳释放操作的培训，知悉相关兼捕规定并能辨别物种
- Check that skippers fill in accurately paper or e-logbook data (ID, sizes, discard status)
- 检查船长是否准确填写纸质或电子渔捞日志数据(物种名、尺寸、丢弃状态)
- Make sure vessels comply with prohibitions and apply required mitigation measures
- 确保渔船遵守各类禁止规定并执行要求的缓解措施
- Have proper kit of bycatch release instruments in each vessel
- 每艘船上备有适当的兼捕释放协助工具包
- Have person or electronic observer to ensure monitoring and transparency
- 船上具备科学或电子观察员确保监控存在和操作透明
- Sign a non-finning policy and FCF Sustainability Policy
- 签署不割鳍政策和丰群可持续政策(体现企业支持可持续环境和社会行为)

DATA COLLECTION IMPROVEMENTS

- Require vessels to fill in discard information in logbooks and commence improvement of the species composition data resolution (life status of discards (dead or alive) and size frequencies required
- 要求渔船在渔捞日志中填写丢弃物信息, 且开展物种组成数据精度【丢弃物状态(死亡或存活)】和尺寸频度要求的改进工作
- Work with national flag if needed to improve logbook format for complete data collection
- 在必要情况下与船旗国政府共同改进渔捞日志格式以便于更好收集渔捞数据
- Promote logbook info is compiled and shared with RFMO scientific bodies
- 推动渔捞日志信息的完整填写并将其分享给RFMO的科学委员会
- Improved fishery data enable assessment of which species are primary 'main and 'minor' and level of impact on population dynamics
- 改进的渔业收集数据能协助评估哪些物种是目标渔业中主要物种的主要和次要组成, 渔业对捕捞种群动态的影响
- Fishery catch and fate data is comprehensive to understand if scale of secondary species taken is adequate and similarly for ETP species design mitigation strategies where necessary
- 当收集的渔业捕捞和处置数据完整全面时, 这些数据能用于分析目标渔业对次要物种的影响程度, 在必要条件下也可用于设计减少ETP兼捕的缓解策略。

LOGBOOK DATA COLLECTION

- . The first step to good catch data is to be able to identify the principal species in the fishery
第一步，好的渔获数据能让人快速辨别其中渔业的主捕物种
- . Vessels should carry species ID guides and skippers be familiar with names and codes
渔船应随船携带物种编号名录且船长熟悉常见物种名和对应编号
- . Ensure that logbooks are in native skippers language to understand species names
确保渔捞日志以船长所属国籍的语言呈现，以便其理解各物种名称



TURTLE BYCATCH MITIGATION

All sea turtles are protected internationally, as these long-lived animals face several environmental challenges:

- breeding ground destruction
- ingestion and entanglement with marine debris
- disease linked to ocean pollution
- interactions with boat traffic
- Interactions with fishers

There are seven species of sea turtle, with five commonly encountered during tuna fishing.

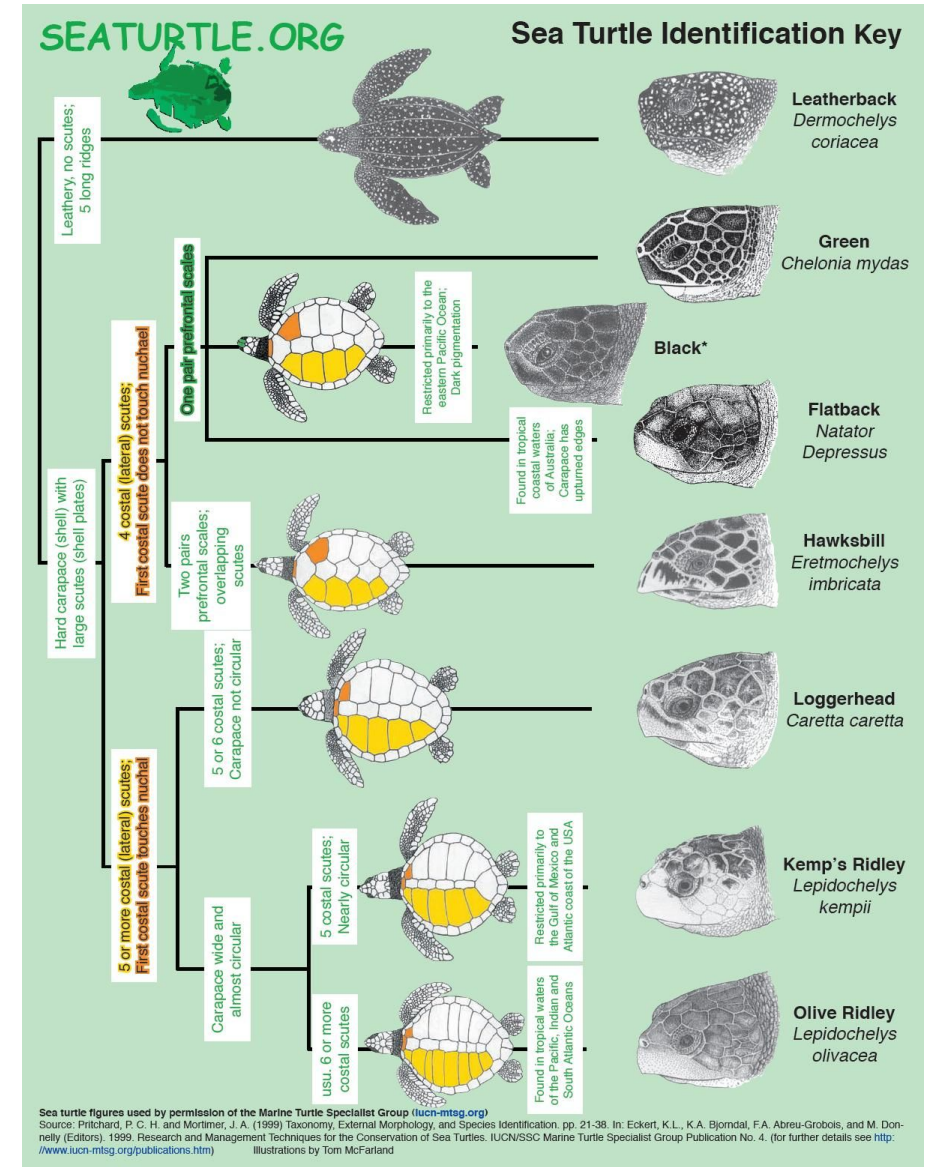
LOGLINE BYCATCH SPECIES – MARINE TURTLES

Simple picture guides are available that allow fishers to quickly identify marine turtle species.

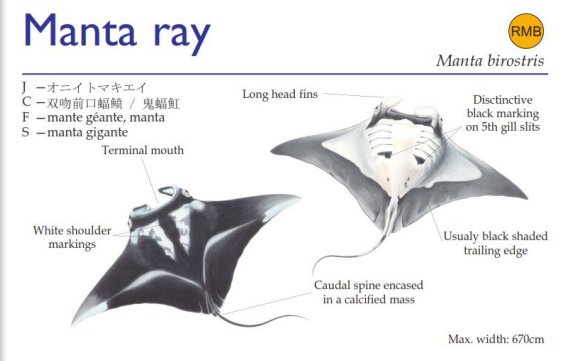
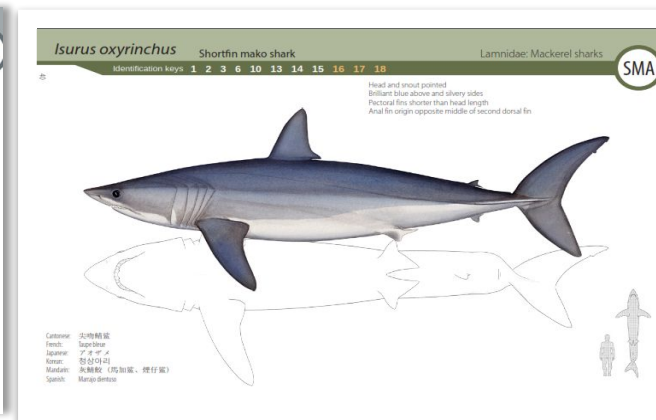
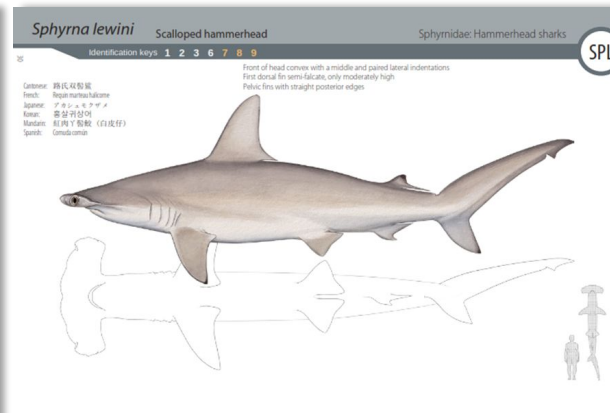
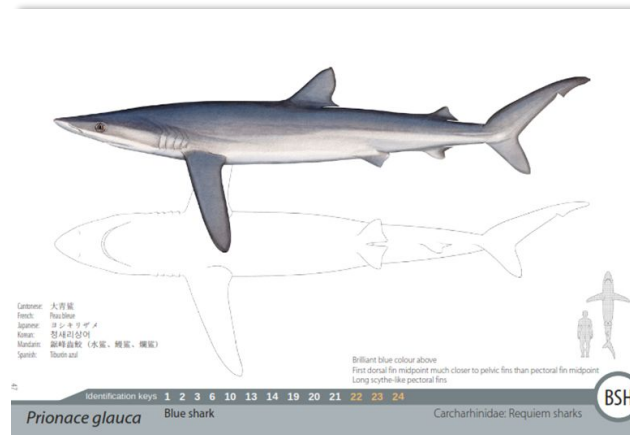
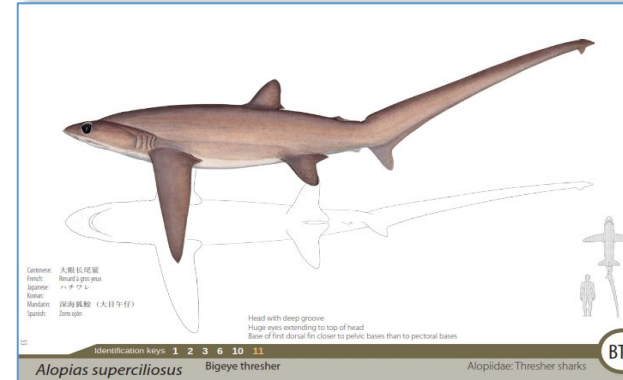
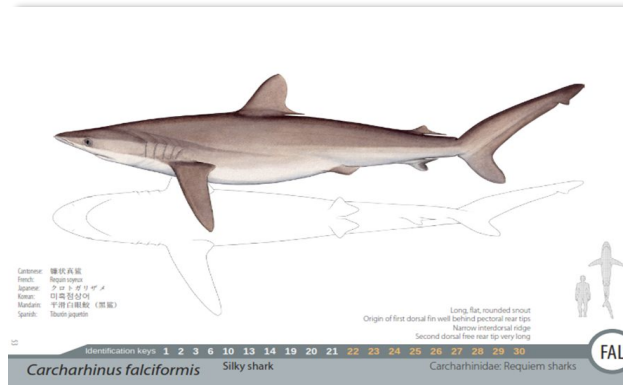
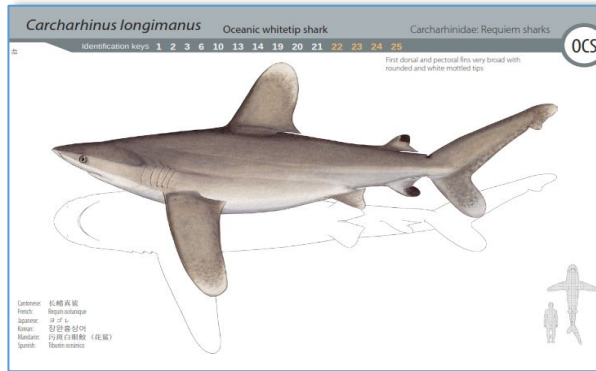
The guide on the right is a good example.

These guides should be posted on fishing vessels to assist in accurate data reporting.

<http://www.issfguidebooks.org/species-guides>



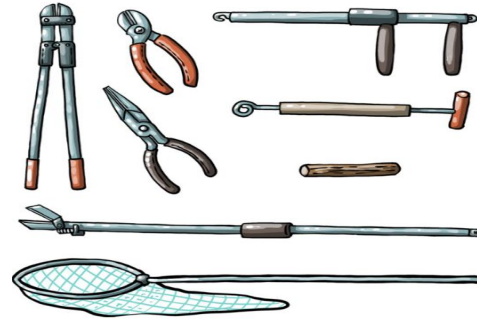
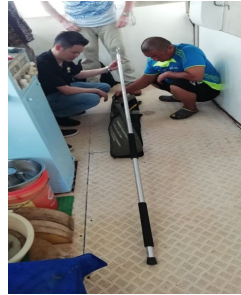
CARRY ELASMOBRANCH IDENTIFICATION SHEETS ONBOARD



BYCATCH MITIGATION – PROVIDE MEANS TO IMPLEMENT THEM

TURTLES

- Use of circle hooks
- Fish bait
- Set hooks below 100 m
- Safe handling and tool kit



Poisson et al. 2015 ©

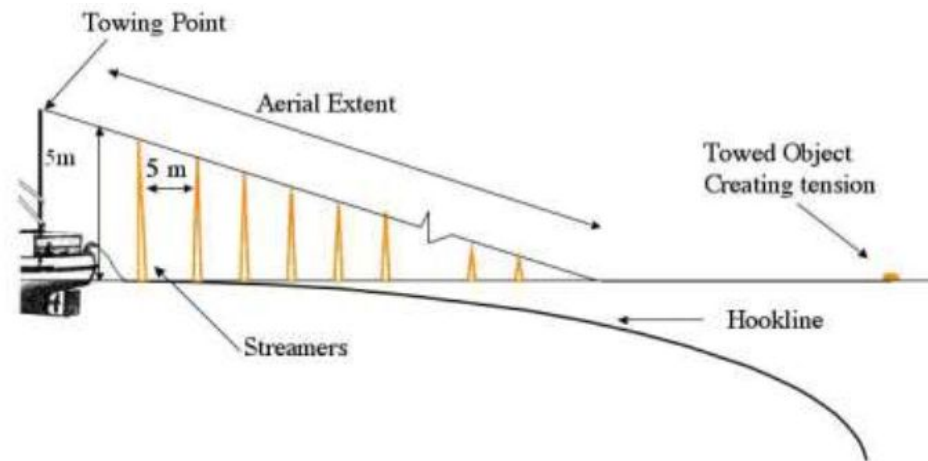


J and Circle hooks (Gilman et al. 2007)



SEABIRDS

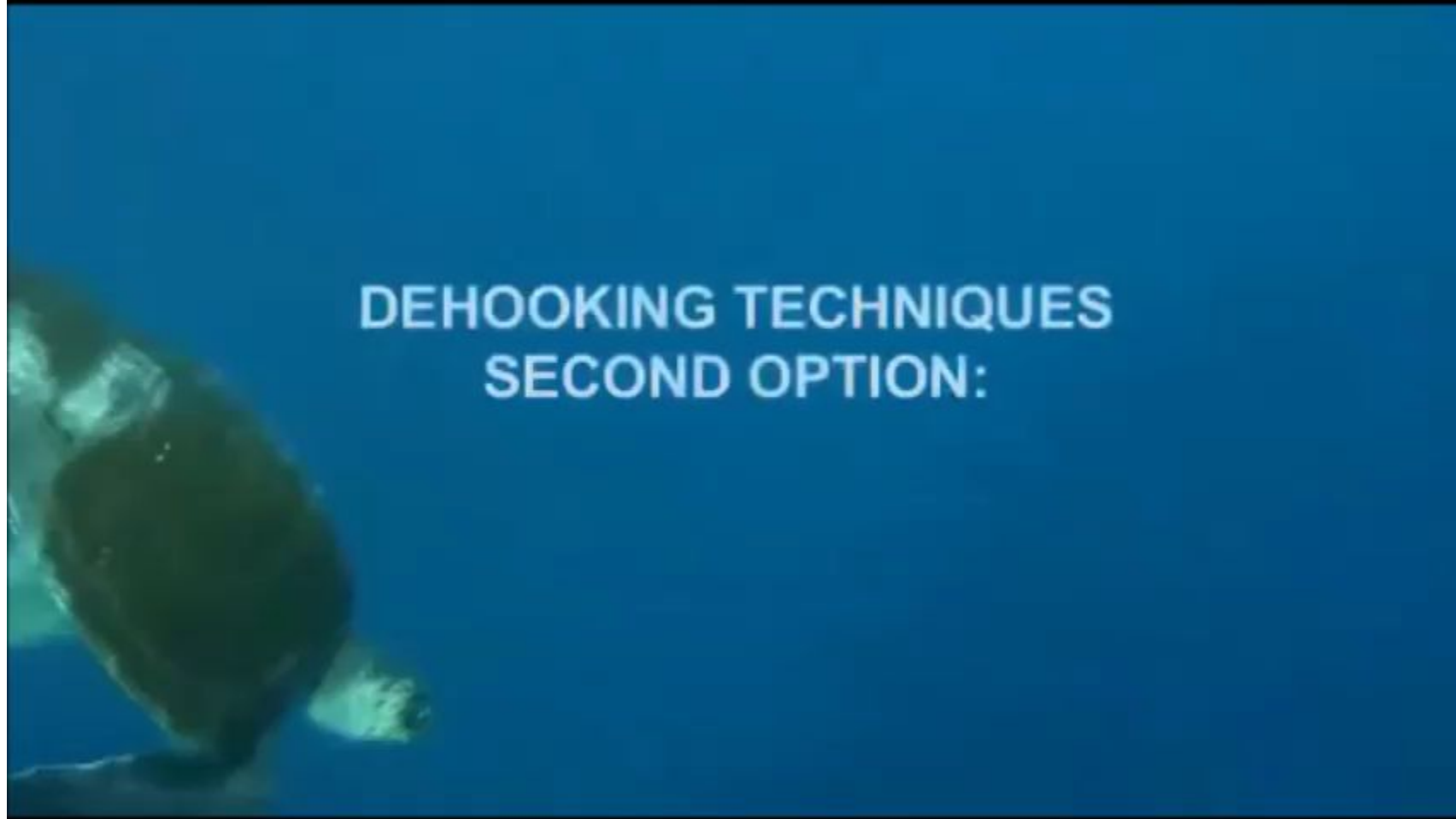
- Night setting with minimum deck lighting
- Bird-scaring lines (Tori lines)
- Line weighting
- Safe handling techniques



Recommendation by ISSF: Vessels with adequate bycatch mitigation and release equipment for sharks, turtles, seabirds and cetaceans.

项目目标：渔船执行充分的兼捕缓解措施并携带释放鲨鱼、海龟、海鸟和鲸豚兼捕的工具

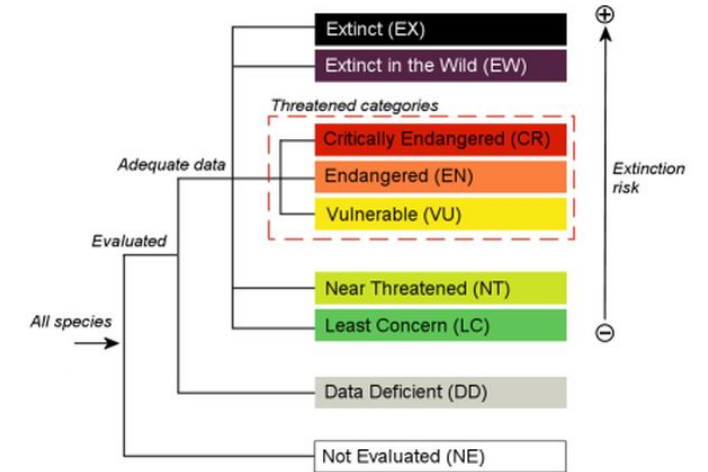
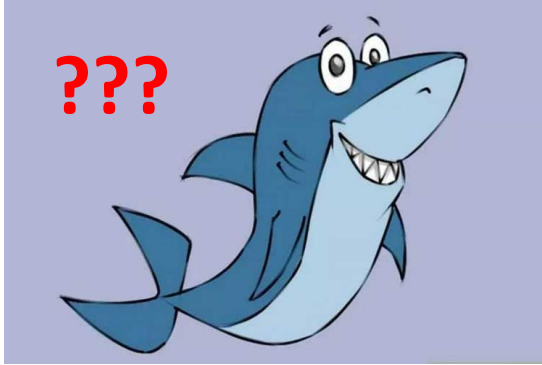
TURTLE – DEHOOKING IAATC CLIP



Recommendation by ISSF: Skippers and crew implementing best release practices and aware and complying with all conservation measures, with emphasis on ETP species

项目目标：船长和船员执行最佳释放操作、意识到且遵守所有必要的保育措施，尤其是ETP物种

SHARK BYCATCH ISSUES



- Endangered or critically endangered shark species in the IUCN Red List in 2020 has gone up to 105 species due to their slow growth and poor recovery rate.
- Tuna longliners are considered the greatest cause of fishing mortality, but better data collection is required to fully assess impacts by species.
- Vicious cycle where, if countries fail to collect and submit data on sharks, accurate population assessments cannot be made. Note: under precautionary approach prohibitions and area closures more likely.

SHARK ACTIONS

Regarding sharks, ensure the compliance with:

- i. **Shark finning ban (5% ratio)**
- ii. **Prohibition from retaining, transshipping, storing or landing oceanic whitetip and thresher sharks**
- iii. **Releases, and generally with the Resolutions pertaining to sharks**
- iv. **Required data on species interactions, including discards and live status**

Encourage the supply chain to voluntarily **adopt a ban on the use of wire traces and shark lines**

Promote the adoption by the fleet of a **requirement for shark fins to be naturally attached**, and the requirement promoted at relevant RMFO meetings.

Support that countries implement a FAO International Plan of Action for Conservation and Management of Sharks.

LARGER SHARK HANDLING AND RELEASE

For larger sharks hooked or entangled, use long-handled line cutters and dehookers while the animal remains in the water.

If a smaller hooked shark is safe to bring aboard, do so carefully. As with turtles and seabirds, bolt and line cutters can be used to remove a hook. Disentangle an animal or cut the leader if the hook is too deep.



Poisson et al. 2015 ©



Poisson et al. 2015 ©

SHARK HANDLING AND RELEASE

SHARK FINNING is prohibited by FAO and tuna RFMOs and ISSF has measures against finning

There are many threats to shark populations and shark finning adds to it

If sharks are retained, fins should be naturally attached to the carcass, and catches landed, reported and fully utilized



[Home](#) > [What We Do](#) > [Verification](#) > [Conservation Measures & Commitments](#) > [Bycatch Mitigation – 3.1\(a\) Shark-Finching Policy](#)



3.1(a) Shark-Finching Policy

In light of the difficulties in enforcement and accurate data collection, all ISSF Participating Companies shall establish and publish policies prohibiting shark finning. "Publish" for the purpose of this measure includes posting the policy on the company's public website.

In the event a Participating Company does not have a public website, the Participating Company shall make its policy otherwise available to the general public.

Gear
Type: All

Adopted: January 23, 2012
Amended: October 20, 2015
Effective: June 1, 2012

ENSURE COMPANY HAS SIGNED A NON FINNING POLICY

Shark Conservation Policy 鯊魚保育政策

As a responsible member of the fishing community we recognize the most shark species are highly susceptible to overfishing, and many are considered threatened or endangered. Furthermore, we understand the wasteful practice of shark finning (the removal and retention of shark fins and discarding at sea of the carcass) contravenes many international rules and regulations, including those of all major tuna regional fisheries management organizations (RFMOs)

身為漁業團體裡負責任的一員，我們承認鯊魚物種極易受到過度捕撈，並有許多受到威脅或瀕臨滅絕。此外，據我們了解處理魚翅浪費的做法（去除只保留鯊魚鰭，並丟棄魚體入海）違反許多國際規則和規章，包括那些所有主要的金槍魚區域漁業管理組織（區域漁業管理組織）

To better protect sharks, our company and/or vessel(s) :

為了有效保護鯊魚，我們的公司和/或漁船（s）：

1. Does not actively target sharks 不針對鯊魚捕漁作業
2. Does not set shark lines on buoys 不設置鯊魚釣線在浮標上
3. Prohibits the use of wire traces 禁止使用鋼絲線
4. Prohibits the practice of shark finning 禁止採取魚翅的做法
5. Promotes the release of sharks that are caught alive 倡導釋放捕獲的活鯊魚
6. Does not retain oceanic whitetip or silky sharks 不持有遠洋白邊真鯊或平滑白眼鯊
7. For other sharks that are landed, the carcass is retained with fins attached
對於那些已卸貨上岸的鯊魚，需鯊魚鰭不離身
8. Records the shark species in the fishing logbook for all sharks that are landed
捕撈日誌須記載卸出的所有鯊魚物種
9. Does not engage in trading with the fishing companies which do not observe above clauses. 不與未遵守上述的條款的漁業公司從事交易

Company Name (s) 公司名稱(s) Tunago Fishery Co., Ltd.

Fishing Vessel Name 船隻名稱 Tunago No.31

Fishing Vessel Flag 船籍國 Vanuatu

RFMO of Fishing area 區域漁業管理組織作業漁區 WCPFC & IATTC

Name of Vessel owner and / or Captain 船東和/或船長 LIANG, CHUN FU

Signature of Vessel Owner and / or Captain 船東和/或船長簽名

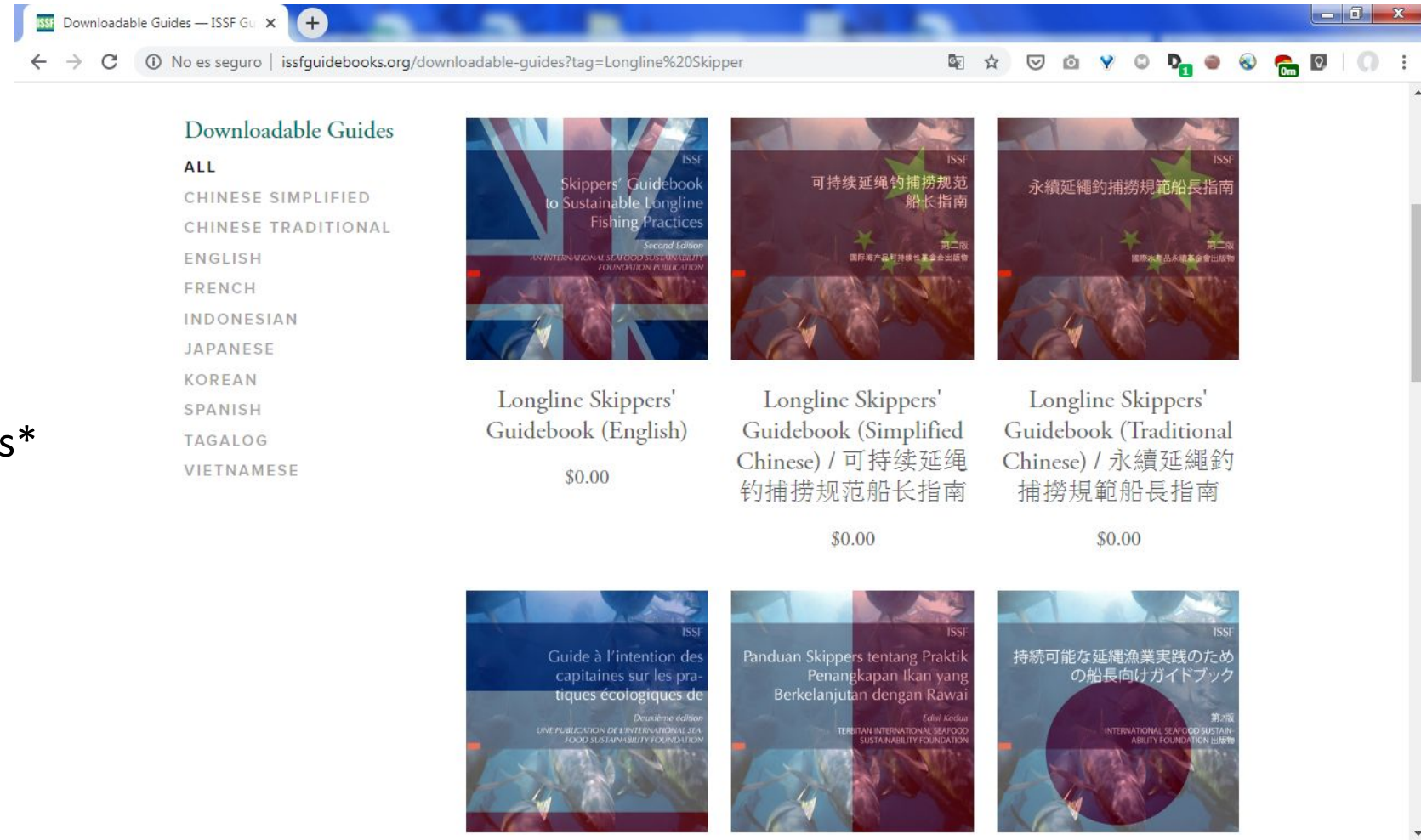
SKIPPER PVR CERTIFICATION

Two methods of certification:

- Longline ISSF Skippers Workshops*

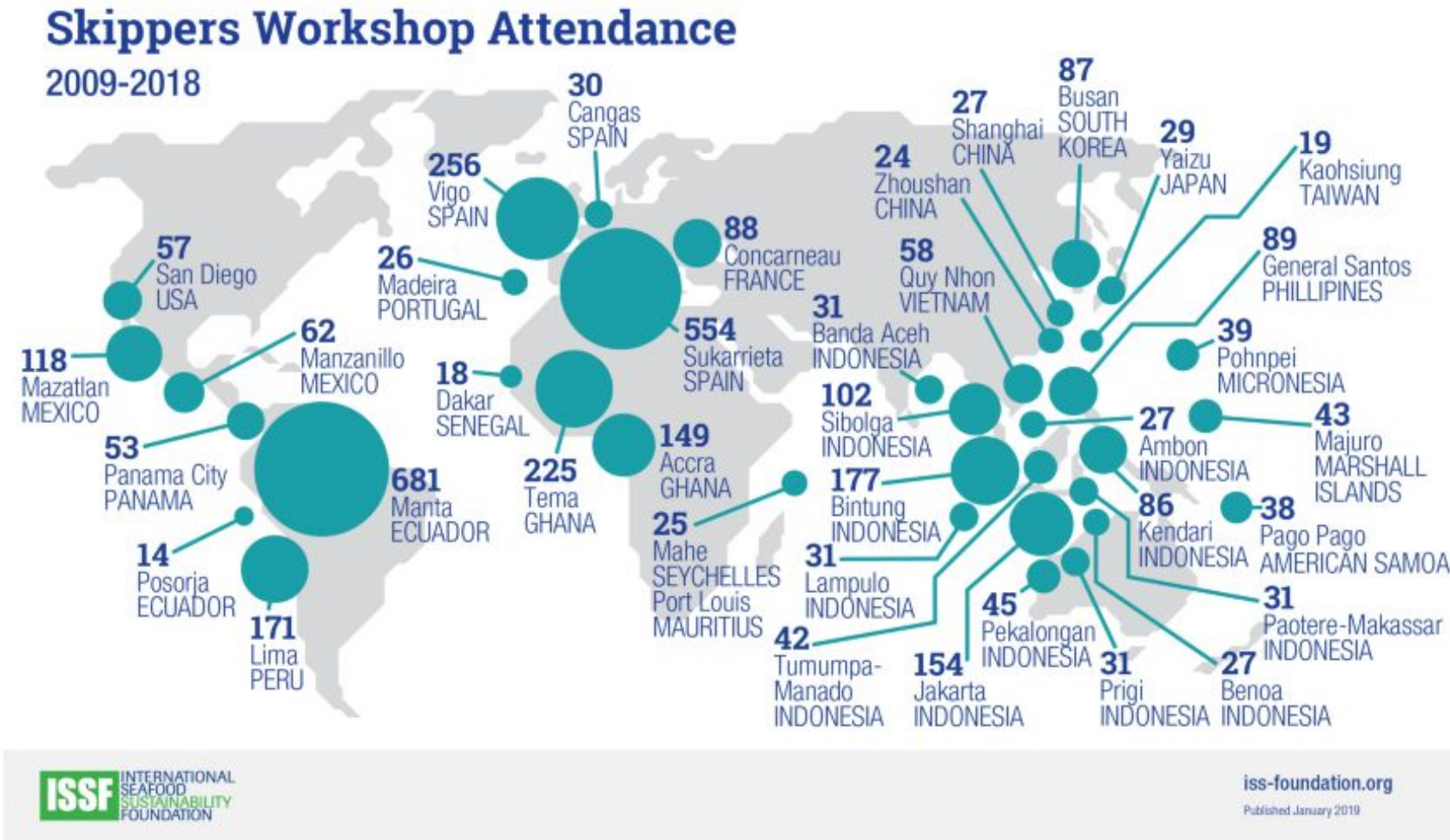
(*By ISSF certified trainers)

- ISSF Guidebook online



<http://www.issfguidebooks.org/downloadable-guides?tag=Longline%20Skipper>

TRAINING PS CAPTAINS AND CREW IN SUSTAINABLE PRACTICES



OVER 100 WORKSHOPS, 4000 PARTICIPANTS, 25 PS FLEETS

FEEDBACK COLLABORATION SKIPPERS AND SCIENTISTS



SKIPPER WORKSHOPS



ISSF BYCATCH SCIENTISTS

- Listen and learn from fishers to find best bycatch practices with their help
- Design appropriate bycatch reducing measures that suit best each fleet and ocean
- Scientist pass information to fishers on the latests research in bycatch mitigation

BYCATCH AND SUSTAINABLE POLICY LETTER – DRAFT ISSF (part 1)

Bycatch Policy and Responsible Fishing Guidelines for Longline Tuna Fisheries involved in FIPs under the MSC standard

The current document is intended to serve as a guide for Longline Fisheries engaging in Fishery Improvement Projects (FIPs) aiming to meet the MSC standard.

The various sections identify the elements that the FIP should be willing to commit to in order to consistently support its objectives to contribute to:

- avoid overfishing through supporting and complying with a sound harvest strategy at the RMFO and flag level
- restore fish stocks through advocating and lobbying for adoption of adequate harvest strategies and rebuilding plans when necessary
- protect ecosystems by fully characterizing fishery impacts, research and implement required strategies
- avoid illegal, unreported and unregulated fishing by adhering to international and national regulations and implementing transparent, verifiable activities.

Elements listed under every section stem from ISSF recommendations on Best Practices for Longline fisheries in transition to MSC certification

Recommendation by ISSF: Development of a comprehensive and verifiable Bycatch Policy of Practice for participating vessels which includes full retention of tunas, best practices, gear improvements, mitigation and research, best practices for ETP species, 100% observer coverage, data collection and reporting of all interactions and fate.

项目目标：针对参与项目的渔船制定综合、可验证的兼捕操作政策，包括金枪鱼渔获的全保留、良好操作、渔具改进、缓解和科研、对ETP物种的最佳处理操作，100%观察员覆盖、所有渔获物捕获和处置的数据收集和汇报

HABITAT IMPACTS

- This pelagic gear has low impact on habitats (e.g. unlike demersal bottom-trawling gear)
- Only potential impacts is entanglement and ghost fishing by lost and abandoned gear

- ☐ Ensure data on accidental loss of gear is recorded
- ☐ Have a fishing gear recycling policy
- ☐ Study quantification of impact by lost longline gear to prove it is slow relative to other gears (e.g. gillnets, entangling FADs, etc.)



ADOPT VOLUNTARY CODES OF GOOD PRACTICES

- Many fleets, especially in purse seiners (e.g., French, Spanish, Ecuadorian, USA, etc.), coordinated through their associations are adopting voluntarily best recommended practices for bycatch mitigation
- These responsible fishing codes are good publicity and help them to be proactive and go in front of conservation measures instead of reacting to them.

CODE OF GOOD PRACTICES ON BOARD FOR
MANAGEMENT AND RELEASE OF ACCOMPANYING SENSITIVE FAUNA
ACCORDING TO MITIGATION MEASURES ADOPTED BY
THE INTER-AMERICAN TROPICAL TUNA COMMISSION (IATTC)

Good Practices for Responsible Tuna Purse-Seining

The good practices below are aimed at improving the tuna purse-seining fleet's practices in every ocean across the world. They reflect the practices implemented by the OPAGAC/AGAC and ANABAC-OPTUC fleet to make tuna purse-seining more selective and sustainable, for a responsible approach to fishing that minimises the impact of tuna purse-seining on the marine ecosystem and makes the management of sustainable tuna purse-seining possible. This code was signed in 2012 and is revised each year to include improvements based on the latest scientific findings. The agreement is based primarily on the following points:

1. The design and use of FADs (fish aggregating devices) that do not entangle sensitive associated species (primarily turtles and sharks).
2. The development and application of releasing techniques that are pose less risk to associated species and optimise those species' survival. This includes materials and equipment provided expressly for releasing associated species.
3. The application of a FAD management system through the implementation of a FAD logbook.
4. 100% observer coverage, including support vessels.
5. Training for fishing masters, crew and scientific observers.
6. Scientific verification of activities related with good practices and continuous tracking by a steering committee.



SUMMARY

P2 MINIMIZING ENVIRONMENTAL IMPACT RECOMMENDED BEST PRACTICES

- The FIP should implement an appropriate management strategy to manage its impacts on P2 components. The strategy, should include elements to ensure characterization, research and mitigation of impacts as well as verification and reporting elements:
- 渔业改进项目应当执行适当的管理策略来处理目标渔业对原则2要素的影响。该策略应包含渔业特征、科研和渔业影响缓解要素, 和验证和报告要素
- Report of catch/discard and interactions especially for ETP species 报告渔获物/丢弃物和其它物种, 尤其是与ETP的接触
- Promote retention and utilization of non-prohibited species 推动对非禁捕且非目标物种的保留和利用
- Follow best practices to release unwanted catch, training fishers 遵守释放非目标捕获物的最佳操作, 训练渔民遵守操作准则
- Prohibit shark finning and demonstrate 禁止鲨鱼割鳍并验证遵守
- Implement high observer coverage (especially for ETP interactions) 实现高观察员覆盖 (尤其与ETP物种接触的覆盖)
- Promote research primary and secondary species, and ETP mitigation 推动对主要和次要捕获物种、ETP物种的研究
- Support efforts species management assessments 支持物种管理评估的努力工作
- Demonstrate compliance with management measures 验证渔业遵守相关管理规定
- Collect lost and abandoned gear data for habitat impacts 收集丢弃或遗弃渔具的数据来评估对栖息地的影响
- Provide data required by scientists for ecosystem impacts assessment 提供评估渔业对生态系统影响的所需科研数据

PRINCIPLE 3 – EFFECTIVE MANAGEMENT

- Support transparent mechanisms for resolution of legal disputes
- 支持建立对法律纠纷的透明解决机制
- Support adoption of RFMO mechanisms to evaluate compliance of CMMs
- 支持采用RFMO机制来评估各项CMMs的执行程度
- Support full implementation of relevant RFMO measures
- 支持全面执行RFMO的各类相关管理措施
- Flag state should be an active member of relevant RFMO (ISSF CM1.2)
- 船旗国应为相关RFMO的活跃成员 (ISSF CM1.2)
- Support management objectives P1-P2 for sustainability become part of flag state legislation
- 支持原则1-2的管理目标, 使得可持续渔业发展成为船旗国的部分立法内容
- Support RFMO decisions that take action when stocks overfished or have data gaps
- 支持RFMO对渔业遭过度捕捞或缺乏数据时采取补救行动的决议

COMPLIANCE ISSUES

- IUU products risk to stocks, but also stakeholders seafood value chain at risk and livelihoods of abiding fishers.
- Some RFMO contracting parties failed to transpose international fisheries laws, leaving flag States in a legal void without enforcement rules to regulate fisheries.
- Fisheries with regulated and sustainable practices can restore ocean health, making fish stocks more productive.
- Collect data of fisheries activities through electronic monitoring and/or observer coverage to conduct scientifically-robust stock assessments and surveillance of activities that impact unregulated species.
- Empower RFMOs to manage unregulated species. RMFOs must extend its mandate to include pelagic sharks directly
- RFMO Parties must urgently adopt harmonised and real time traceability tools like electronic catch documentation schemes to ensure a transparent supply chain

Recommendation by ISSF: Amend/update national regulations to meet international conservation measure obligations and market sustainability demands

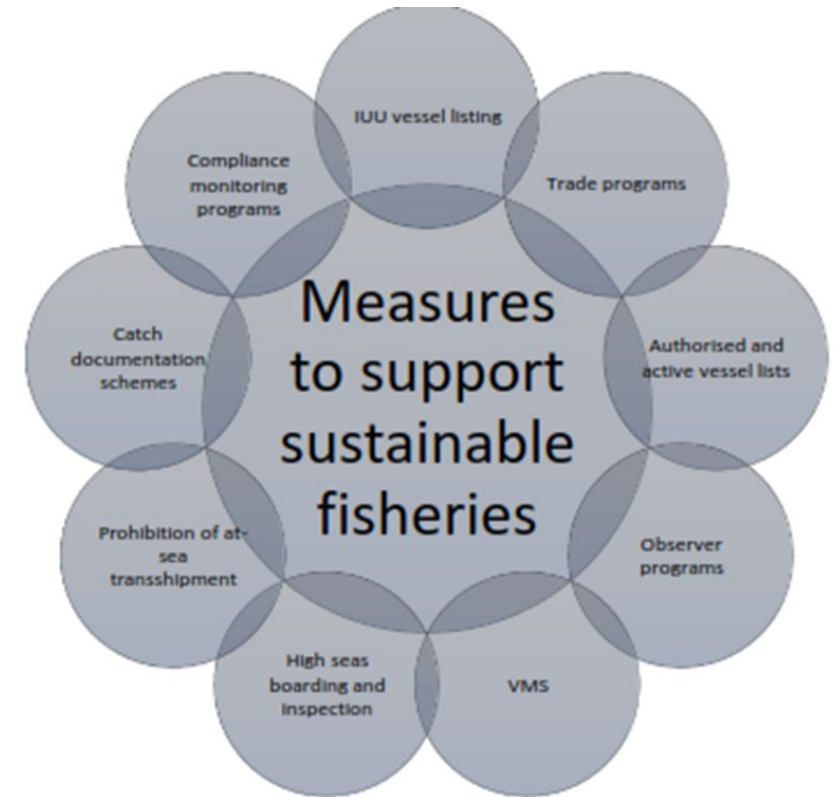
项目目标：推动修改/更新渔船所属国的渔业管理规定，使其符合国际渔业资源保育措施要求和国际市场的可持续需求。

MSC IN LINE WITH RFMO AND INTERNATIONAL REQUIREMENTS

- The FIP fishery should work with the flag state, the RFMO and other international requirements (e.g. Port State Measures Agreement) and respect them.

MONITORING, SURVEILLANCE AND CONTROL TOOLS:

- Vessel licensing and registration
- VMS
- Electronic monitoring and logbooks
- Observer coverage
- Monitoring of landings and transshipments
- Authorised and active vessel lists

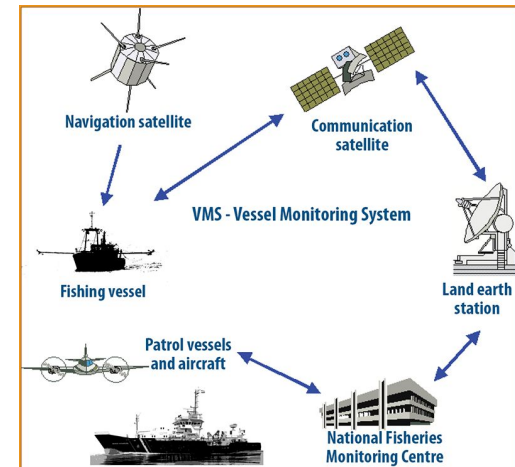


ISSF Technical Report 2019-04

**COMBATTING IUU FISHING:
Continual Improvement and Best Practices
for IUU Listing Measures in Tuna RFMOs**

VMS RECOMMENDATIONS

- Ensure VMS used in vessels > 20 m LOA in EEZs and High Seas.
- Include VMS cover in reefers, carriers and support vessels or any other type engaged in fishing-related operations, such as transshipment,
- Procedures for transmission of near-real time VMS reports to RFMOs for scientific & compliance purposes (e.g. implementation CMMS, transshipment verification).



<https://www.wcpfc.int/doc/tcc-05/vms-reporting-requirements-draft-guidelines>

PROACTIVE VESSEL REGISTER (PVR)

OBJECTIVE:

To identify a tuna vessel as taking positive steps towards implementing sustainable practices

FEATURES:

- Facilitates identification of compliance with ISSF Commitments for buyers
- Not restricted to PS vessels, also longline and pole and line, etc. can apply

<http://iss-foundation.org/pvr/>



ISSF PVR DATABASE

TO DATE > 625 TUNA PURSE SEINERS AND ~460 LONGLINERS

Vessel Name	Vessel Type	UVI Number	UVI Type	Vessel Flag	Authorized RFMO	Active Region Authorized?	Flag/RFMO?	Not IUU Listed	Shark Finning Policy?	Observer?	Full Tuna Retention?	Skipper WS/GB
 JINN JVI CHYUN	Longline	8791203	IMO#	Chinese Taipei	IOTC					-	-	-
 KHA YANG 399	Longline	8789377	IMO#	Chinese Taipei	IOTC					-	-	-
 KHA YANG 939	Longline	8531366	IMO#	Chinese Taipei	IOTC					-	-	-
 KHA YANG 969	Longline	8789339	IMO#	Chinese Taipei	IOTC					-	-	-
 KUANG YING 12	Longline	9880087	IMO#	Chinese Taipei	IOCAT					-	-	-
 KUANG YING 3	Longline	9806548	IMO#	Chinese Taipei	IOCAT					-	-	-
 LI CHENG 28	Longline	8782915	IMO#	Chinese Taipei	WCPFC					-	-	-
 LI HUNG 666	Longline	8792659	IMO#	Chinese Taipei	WCPFC					-	-	-
 LI HUNG No. 858	Longline	8782927	IMO#	Chinese Taipei	WCPFC					-	-	-
 LIAN JI FA 212	Longline	8781181	IMO#	Chinese Taipei	WCPFC					-	-	-

EXAMPLES OF IUU BY RFMO

Table 2: Comparison of the activities that constitute IUU Fishing in each of the five t-RFMOs.

	CCSBT	IATTC	ICCAT	IOTC	WCPFC
Harvesting species covered by the treaty when not authorised to do so	✓	✓	✓	✓	✓
Failure to record and report catches or making false reports	✓	✓	✓	✓	✓
Used prohibited fishing gears	✓	✓	✓	✓	✓
Transshipped or had joint operations with non-authorised vessels or IUU listed vessels	✓	✓	✓	✓	✓
Fishing during spatial or temporal closures		✓	✓	✓	✓
Take or land under-sized fish		✓	✓	✓	✓
Conducted fishing operations in national waters without authorisation or contrary to the laws of that coastal State	✓	✓	✓	✓	✓
Are without nationality and harvested species covered by the treaty		✓	✓	✓	✓
Are under the control of the owner of any vessel on the IUU Fishing List of the relevant t-RFMO		✓	✓	✓	✓
Fished without sufficient quota, catch limit or effort allocations			✓	✓	
Engaged in fishing or related activities having intentionally falsified or concealed its identity, registration or markings				✓	
Engage in fishing activities contrary to any other binding CMM relevant to that treaty	✓	✓	✓	✓	✓

Illegal (violation of national or RFMO laws)

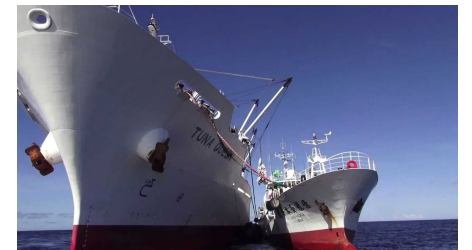
Unreported (not reported or misreported)

Unregulated (no permit, no flag, no registry)

Fishing

SUPPORT FOR RFMO RECOMMENDATIONS THAT DIMINISH IUU

- ❑ Strengthen Monitoring and Control measures that support identification of IUU activities, such as increasing VMS polling rates, prohibitions on at-sea transshipment and increasing observer coverage rates on vessels.
- ❑ Develop a scheme of responses to non-compliance and implement strong and decisive punitive measures to effectively deter IUU fishers.
- ❑ Consider implementing an independent audit process for individual flag States or companies that repeatedly have vessels listed as IUU.
- ❑ Increase information sharing between t-RFMOs and between individual member States.



Recommendation by ISSF: Advocate for stronger application of monitoring and enforcement regulations against IUU by flag states and RFMOs
项目目标：倡导执行更严格的渔船监管，船旗国和RFMOs共同执行打击IUU的管理规定。

HUMAN RIGHTS LABOUR CONDITIONS

Labour


The Marine Stewardship Council condemns the use of forced or child labour and recognises the importance of social issues when considering sustainability.

Fishing and supply chain companies and their subcontractors that have been successfully prosecuted for forced labour violations in the past two years are not eligible to participate in the MSC program.



Human rights issues can also be considered as a form of IUU

ISSF NEW MEASURE HUMAN RIGHTS LABOUR CONDITIONS

	9.1 Public Policy on Social and Labor Standards	<p>1. Processors, traders, importers, transporters, marketers and others involved in the seafood industry shall develop and publish a public social and labor standards policy and/or sourcing policy that applies to it and its <u>supply chain</u>, including production facilities and fishing and <u>supply vessels</u>, that addresses, at a minimum, the following categories:</p>
Gear Type: All	Adopted: October 28, 2020 Effective: January 1, 2021	<ul style="list-style-type: none">a. Forced laborb. Child laborc. Freedom of associationd. Wages, benefits and employment contractse. Working hoursf. Health and safetyg. Discrimination, harassment and abuseh. Grievance mechanisms <p>2. For the purposes of this measure a policy is “public” if it is published on the company’s website or is otherwise available to the general public.</p>

TRANSSHIPMENT BEST PRACTICES

- ❑ Four RFMOs have expressed “grave concern” that transshipment at sea facilitates organized tuna laundering and increases levels of IUU fishing
- ❑ A large number of high seas transshipment occur just outside the EEZ of CMMs
- ❑ In accordance with CMM2009-06, there has been a requirement for 100% coverage by WCPFC observers, usually on the receiving vessel for high seas transshipments.
- ❑ Effective transshipment management relies on strong MCS measures. Recommendation for mandatory observer coverage on all carrier and fishing vessels (human/electronic) combined with near real-time electronic reporting sent directly to the Secretariat.
- ❑ Exemptions must be removed, and measures applied across the RMFO area of competence
- ❑ Limiting the number of consecutive transshipments is likely to improve transparency
- ❑ Implement the scheme for high seas boarding and inspection

PORT STATE MEASURES

FAO Agreement on Port State Measures (PSMA) is the first binding international agreement to specifically target **illegal, unreported and unregulated (IUU) fishing**.

Its objective is to prevent, deter and eliminate IUU fishing by preventing vessels engaged in IUU fishing from using ports and landing their catches.

<http://www.fao.org/iuu-fishing/international-framework/psma/en/>

Information to be provided in advance by vessels requesting port entry

1. Intended port of call										
2. Port State										
3. Estimated date and time of arrival										
4. Purpose(s)										
5. Port and date of last port call										
6. Name of the vessel										
7. Flag State										
8. Type of vessel										
9. International Radio Call Sign										
10. Vessel contact information										
11. Vessel owner(s)										
12. Certificate of registry ID										
13. IMO ship ID, if available										
14. External ID, if available										
15. RFMO ID, if applicable										
16. VMS	No		Yes: National		Yes: RFMO(s)		Type:			
17. Vessel dimensions	Length		Beam		Draft					
18. Vessel master name and nationality										
19. Relevant fishing authorization(s)										
Identifier	Issued by	Validity	Fishing area(s)	Species	Gear					
20. Relevant transshipment authorization(s)										
Identifier	Issued by	Validity								
Identifier	Issued by	Validity								
21. Transshipment information concerning donor vessels										
Date	Location	Name	Flag State	ID number	Species	Product form	Catch area	Quantity		
22. Total catch onboard								23. Catch to be offloaded		
Species	Product form	Catch area	Quantity		Quantity					

Recommendation by ISSF: Encourage unloading at port and work with national authorities to ensure declarations are completed

项目目标：鼓励在港口进行渔获卸载，同时与所在国监管当局合作，确保相关卸载声明完整真实。

SUMMARY

P3 EFFECTIVE MANAGEMENT RECOMMENDED BEST PRACTICES

Management at 3 levels: Flag state(s), RFMO, countries EZZ licensed

管理体现在3个层面：船旗国、RFMO和在他国专属经济区作业的所在国管理

- Vessels must be flagged to an RFMO member (ISSF CM1.2)
- 渔船国籍所属国，必须是RFMO的成员 (ISSF CM1.2)
- If fishery faced legal challenges, demonstrate how worked to comply with judicial decisions
- 若渔业面临合法性挑战，验证如何让渔业符合司法判决的解决过程（合法化）
- MCS system work in line with RFMO and international requirements. Tools include VMS, electronic logbooks, observer coverage, monitoring of landings and in-port transshipments
- 同步执行渔船监测系统、RFMO与国际规定。常见的工具包括船位监测系统、电子渔捞日志、观察员覆盖、渔获卸载和码头转载监控
- Proper monitoring of transshipment at sea and compliance with regulations
- 针对海上转载的适度监管并确保遵守相应规定
- Skippers should know about regulations at the RFMO and flag state
- 船长应知悉在RFMO和船旗国层面的各类规定要求