

Company and Vessel Training

PACIFIC LONGLINE TUNA (LIANCHENG) FIP



1. Who are we?

Key Traceability



Key Traceability is an independent services company based in the UK specialising in seafood projects

Global team of consultants that specialise in FIPs and getting fisheries to the level of MSC.

Strongly experienced in seafood issues, the MSC Standard and Fishery Improvement Projects

Currently running ten FIPs around the world targeting mostly tuna by longline or purse seine gear types.

<http://keytraceability.com>

Agenda

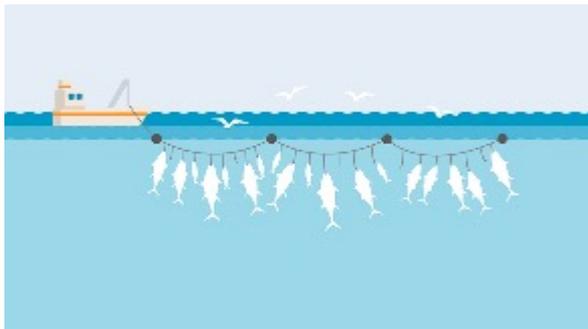
Activity / Topic	Notes
Welcome and overview	Introductions and explanations of the training
Overview of the FIP project, management and workplan	What is a FIP? Explanations of FIP objectives
Species ID	Increasing knowledge of species identification to improve quality of data
Efforts to reduce bycatch and unwanted catch including shark finning	Tools skippers can implement to reduce bycatch Knowledge of why shark finning must not occur
Effective handling and release	Some unwanted catch will always occur, knowledge of how to best handle and release species is necessary
Waste management	All waste on board needs to be managed effectively to reduce negative impacts



2. Fishery Improvement Projects

What is a FIP?

A Fishery Improvement Project, or FIP, 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.



FIP, roughly five year journey



[Photo from MSC](#)

Why do we need a FIP?

4 steps to a credible FIP

Supporting fisheries as they move towards MSC certification

Fisheries that are keen to become MSC certified but do not yet meet the MSC Fisheries Standard may choose to make the necessary improvements to their operations through a Fishery Improvement Project (FIP). A credible FIP involves four key stages, each with associated tools and support mechanisms.



Stakeholder engagement

Stakeholder engagement underpins every stage of the FIP process. Different stakeholder groups need to work together to deliver improvements



Pre-determined timeframe

There should be a pre-determined limit to the amount of time spent as a FIP. This should generally be no longer than five years



Stakeholder training

The Working to MSC certification guide and Capacity building training program equip stakeholders with knowledge to implement successful FIPs



- FIPs bring together multiple fishery stakeholders—fishers, managers and NGOs— to improve a fishery’s practices and management.
- FIPs can open new market opportunities and help reduce the impact of fishing on our seas and oceans.
- Particularly valuable in developing countries where small-to-medium scale fisheries are fishing under circumstances where there is very little governance.

Liancheng HS LL Tuna FIP Aims

Sustainable Fish Stocks – To ensure tuna and other primary species catches across the WCPO do not exceed sustainable levels

Minimising Environmental Impacts – To promote the ecosystem based approach to fisheries management

Effective Management – To strengthen governance systems in the WCPFC, flag states and Liancheng HS LL Tuna fishery.



Liancheng FIP Objectives



Achieve sustainable stock status for tuna that is consistent with the Maximum Sustainable Yield (MSY) and management systems strengthened to achieve this.



To collaborate with other institutions working on tuna fisheries issues in the country, to improve management for example Harvest Control Rules.



To improve the availability of accurate data on catches, retained and especially bycatch by strengthening information systems and training.

Liancheng FIP Objectives



Strengthen ETP and retained species management strategies.



Improve governance and decision-making process.



Achieve MSC certification and the objectives above by 2024.

<https://fisheryprogress.org/fip-profile/pacific-tuna-longline-liancheng>

FIP Issues

Principle 1 – All stocks would pass with conditions for P1. All stocks are fluctuating around F_{MSY} and are not likely to be subject to overfishing. However, the continued lack of HCRs for tuna species continues to be the main issue for P1.

Principle 2 – The lack of comprehensive management concerning ETP species causes issues for Principle 2 (P2). Further issues with the secondary species lowers the P2 score. The fishery must make active efforts to demonstrate it is highly likely that it is not hindering the recovery of ETP species.

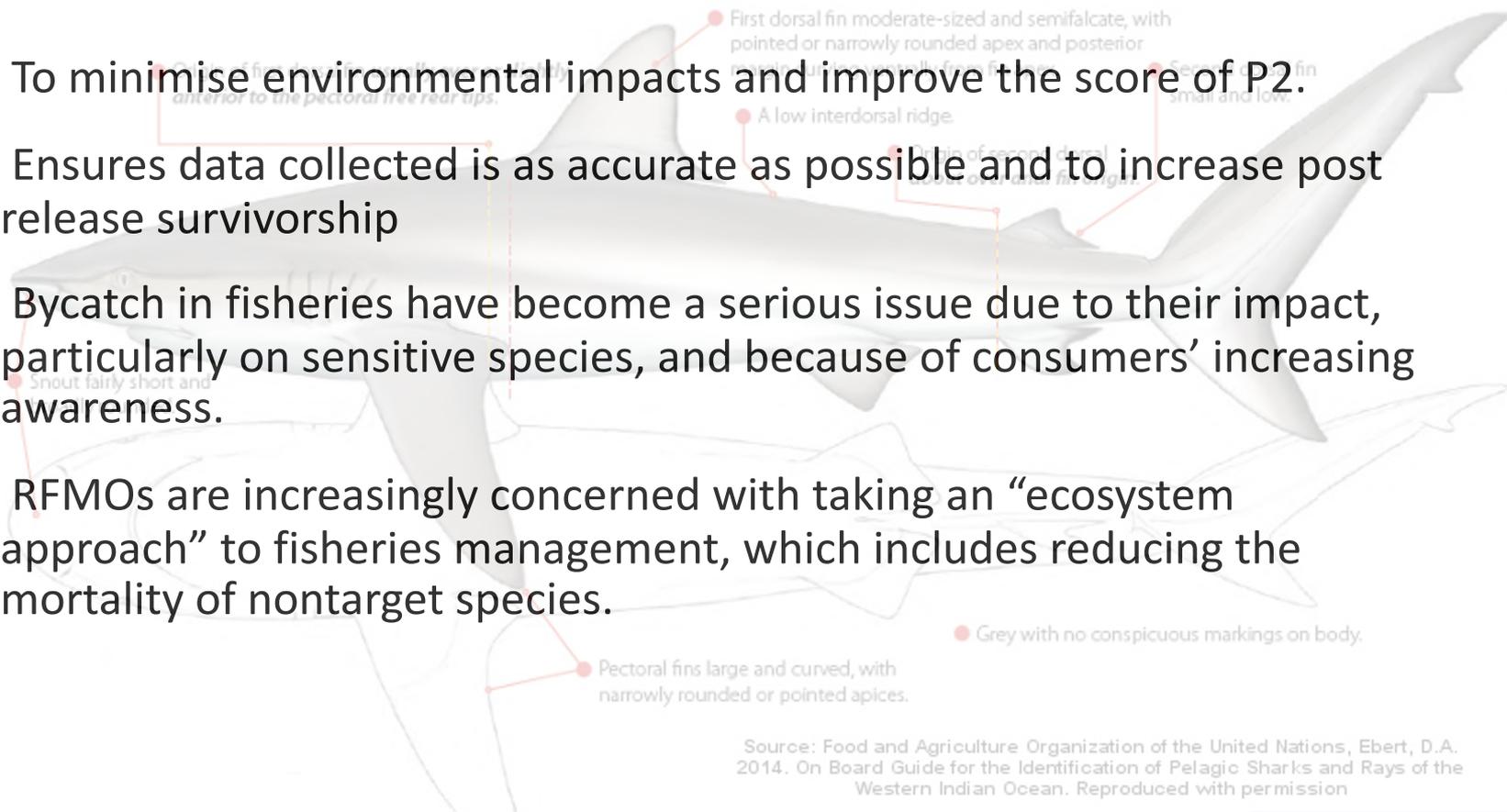
Principle 3 – For Principle 3 the two Pacific island states scored well, with China and Taiwan not scoring as well due to lack of evidence regarding fishery-specific management Systems, decision making processes and compliance and enforcement. The fishery must work with the flag states and RFMOs to be able to close out the conditions that would likely face China and Taiwan.

The background features a dark blue gradient with a silhouette of a fishing vessel at the top center and a school of fish swimming below it. The text is overlaid in white.

3. Species identification and best practices

Why we need effective species ID and best practices?

- To minimise environmental impacts and improve the score of P2.
- Ensures data collected is as accurate as possible and to increase post release survivorship
- Bycatch in fisheries have become a serious issue due to their impact, particularly on sensitive species, and because of consumers' increasing awareness.
- RFMOs are increasingly concerned with taking an “ecosystem approach” to fisheries management, which includes reducing the mortality of nontarget species.

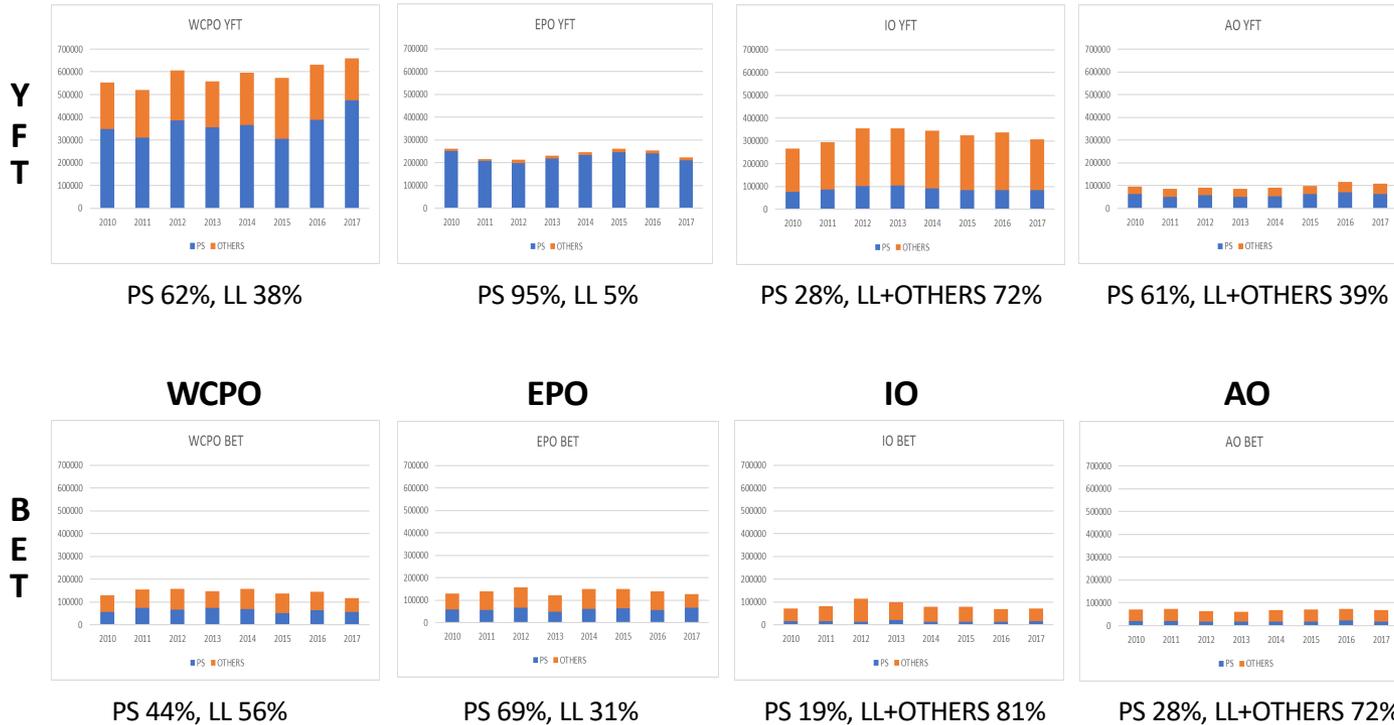


Source: Food and Agriculture Organization of the United Nations, Ebert, D.A. 2014. On Board Guide for the Identification of Pelagic Sharks and Rays of the Western Indian Ocean. Reproduced with permission

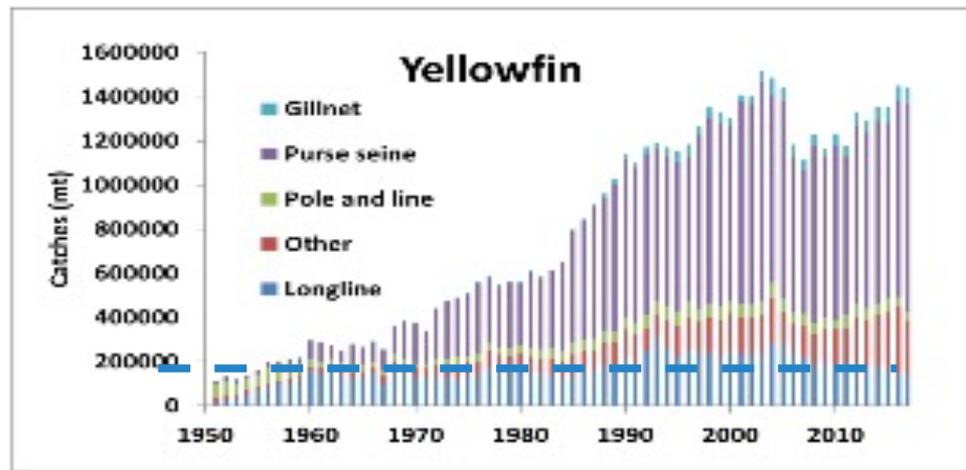
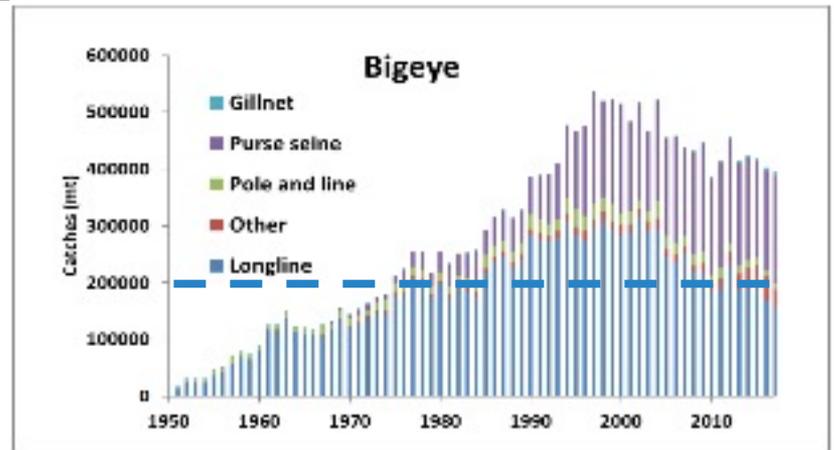
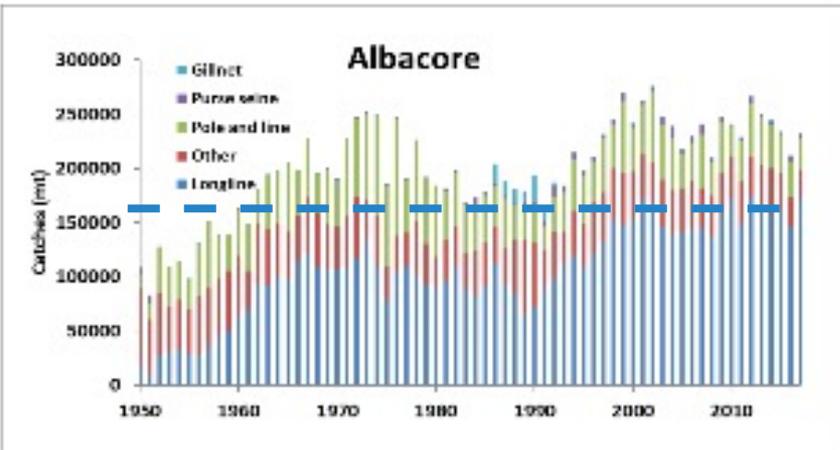


3.1 Tunas

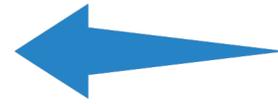
Tuna Catches by Gear and Ocean



Tuna Catches by Gear and Ocean

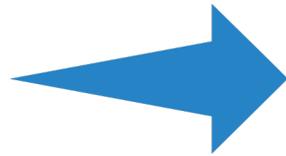




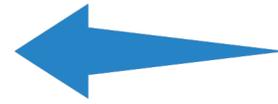


Bigeye

Yellowfin

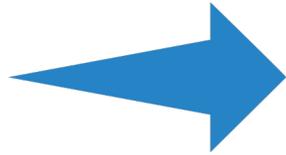






Yellowfin

Bigeye





3.2 Sharks & Rays

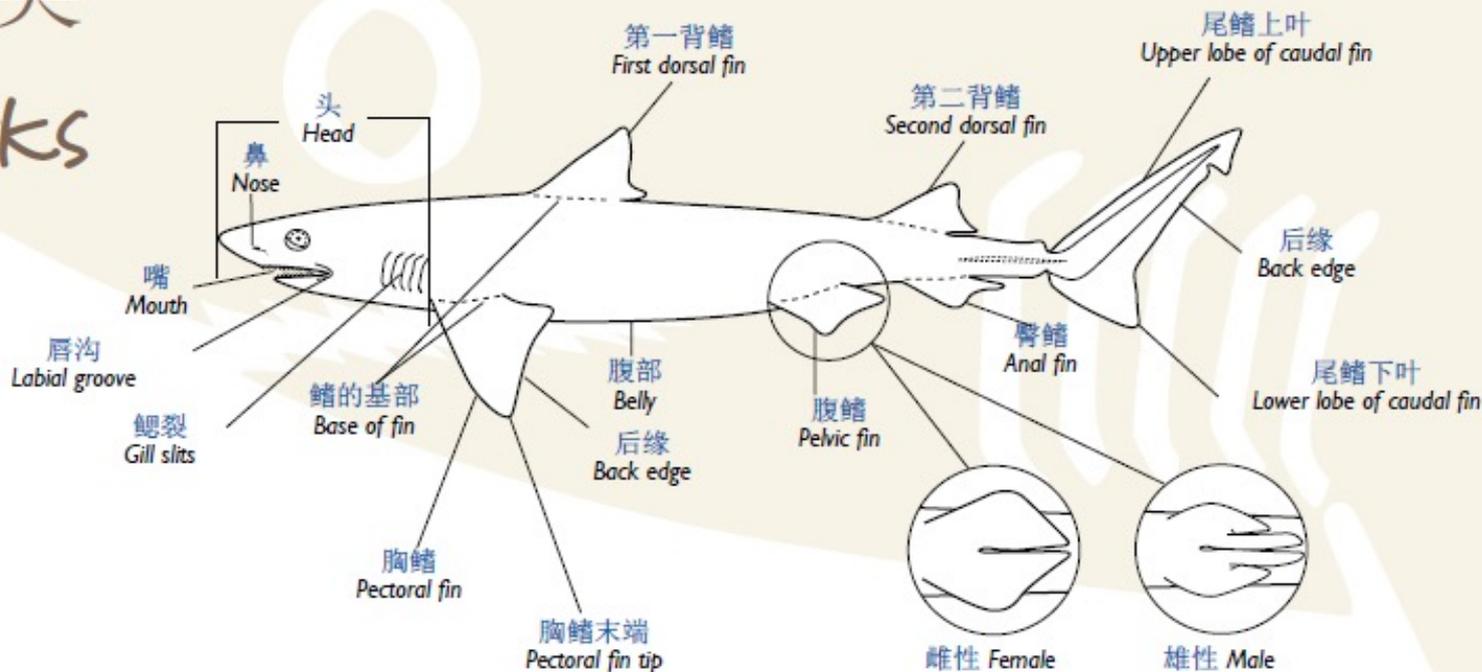


3.2a Species I.D.

	WCPFC	IOTC	IATTC
Sharks	<p>Prohibition on finning (5% ratio)</p> <p>Oceanic White-tip (OWT): Prohibition on retaining, transshipping, storing on a fishing vessel, or landing any oceanic whitetip shark, in whole or in part; prompt and live release; data collection; sampling (CMM 2011-04; in force 1 Jan 2013).</p> <p>Silky: Prohibition on retaining, transshipping, storing on a fishing vessel, or landing any silky shark, in whole or in part; prompt and live release; data collection; sampling (CMM 2013-08; in force 1 July 2014)</p> <p>Best Practices for Safe Release of Sharks (PS and LL): Use of back down procedures, fishing out with hook and line, using cargo nets, ramps or slings to release large sharks, specific handling practices for small sharks, no gaffing, no using gill slits, use de-</p>	<p>Prohibition on finning (5% ratio).</p> <p>Res. 17/05 requires sharks landed fresh have fins-naturally attached until the first point of landing.</p> <p>OWT: Prohibition on retaining, transshipping, storing on a fishing vessel, or landing any oceanic whitetip shark, in whole or in part; prompt and live release; data collection; sampling; exceptions for artisanal fleets in EEZs (Resolution 13/06)</p> <p>Thresher: Prohibition on retaining, transshipping, storing on a fishing vessel, landing, selling or offering for sale any thresher shark, in whole or in part; prompt and live release;</p>	<p>Prohibition on finning (5% ratio).</p> <p>Sharks general (C-16-05; in force 1 Jan 2018):</p> <ul style="list-style-type: none"> • Stock assessment work plan • Data collection <p>For LL: Prohibits shark lines</p> <p>OWT: Prohibition on retaining, transshipping, storing on a fishing vessel, landing, selling or offering for sale any oceanic white-tip shark, in whole or in part; prompt and live release; data collection. (C-11-10)</p> <p>Silky - for LL only: catch or bycatch limits (depends on license) & restrictions on use of steel leaders for 3 months each year (for those multi-species fisheries using surface LL that have captured more than 20% of silky sharks in weight on average). (C-19-05)</p>
	<p>WCPFC</p> <p>hookers, release when in water preferably, etc). (Adopted Dec 2018)</p>	<p>IOTC</p> <p>data collection; sampling (Resolution 12/09).</p> <p>Blue sharks: Catch and effort recording, data collection, catch monitoring, & scientific research (Res 18/02)</p>	<p>IATTC</p>
SUMMARY	<ul style="list-style-type: none"> ✓ Finning prohibition ✓ Retention prohibition of specific species ✓ Best practice release and handling procedures 	<ul style="list-style-type: none"> ✓ Finning prohibition ✓ Fins-attached for fresh sharks ✓ Retention prohibitions ✓ Catch and effort reporting 	<ul style="list-style-type: none"> ✓ Finning prohibition ✓ Retention prohibition of specific species ✓ Catch and bycatch limits ✓ Restriction on steel leaders

	WCPFC	IOTC	IATTC
Rays	Mobulid and manta ray best practice handling guidelines: Using cargo nets, ramps or slings to release large rays, stretchers for small rays & specific handling practices, no gaffing, no punching holes in the animal, no dragging, lifting by cephalic lobes, inserting hooks or hands into gill slits, etc, use de-hookers, release when in water preferably. (Adopted Dec. 2017)	Mobulid Rays: Prohibits targeted fishing; prompt release; best handling guidelines; data collection and research.	Mobulid Rays: Prohibition on retaining, transshipping, storing on a fishing vessel, landing, selling or offering for sale in whole or in part; prompt and live release/safe handling guidelines; data collection.
SUMMARY	✓ Best practice release and handling procedures	✓ Prohibits targeted fishing and retention ✓ Best practice release and handling procedures	✓ Prohibition on retention or sale ✓ Best practice release and handling procedures
Whale sharks	None	All LL: Must report interactions.	None
SUMMARY	None	✓ Report interactions	None
Cetaceans	None	All LL: Must report interactions.	None
SUMMARY	None	✓ Reporting interactions	None

鲨鱼类 Sharks



Scientific	Chinese	English	FAO code	Page
<i>Alopias pelagicus</i>	浅海长尾鲨	Pelagic thresher	PTH	37
<i>Alopias superciliosus</i>	大眼长尾鲨	Bigeye thresher	BTH	39
<i>Alopias vulpinus</i>	狐型长尾鲨	Common thresher, Thintail thresher	ALV	38
<i>Carcharhinus albimarginatus</i>	白边真鲨	Silvertip shark	ALS	35

Isurus oxyrinchus

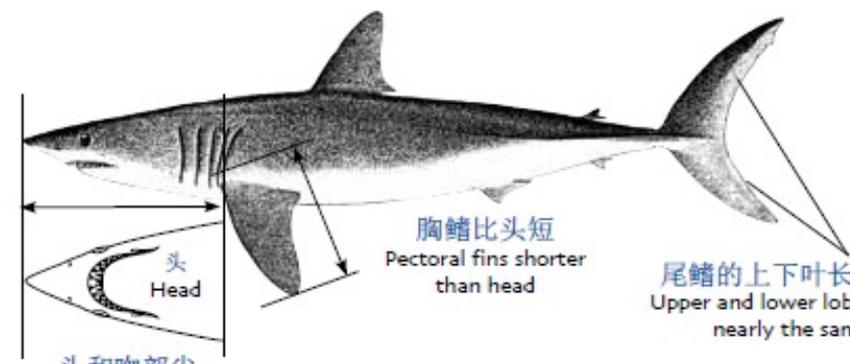
SMA



Chinese: 尖吻鲭鲨
English: Shortfin mako
French: Taupe bleue
Japanese: Aozame
Hawaiian: Mano
Local:



上齿形状
Shape of upper teeth



头和吻部尖
Head and snout pointed

胸鳍比头短
Pectoral fins shorter than head

尾鳍的上下叶长度几乎相同
Upper and lower lobes of caudal fin nearly the same length

Isurus oxyrinchus

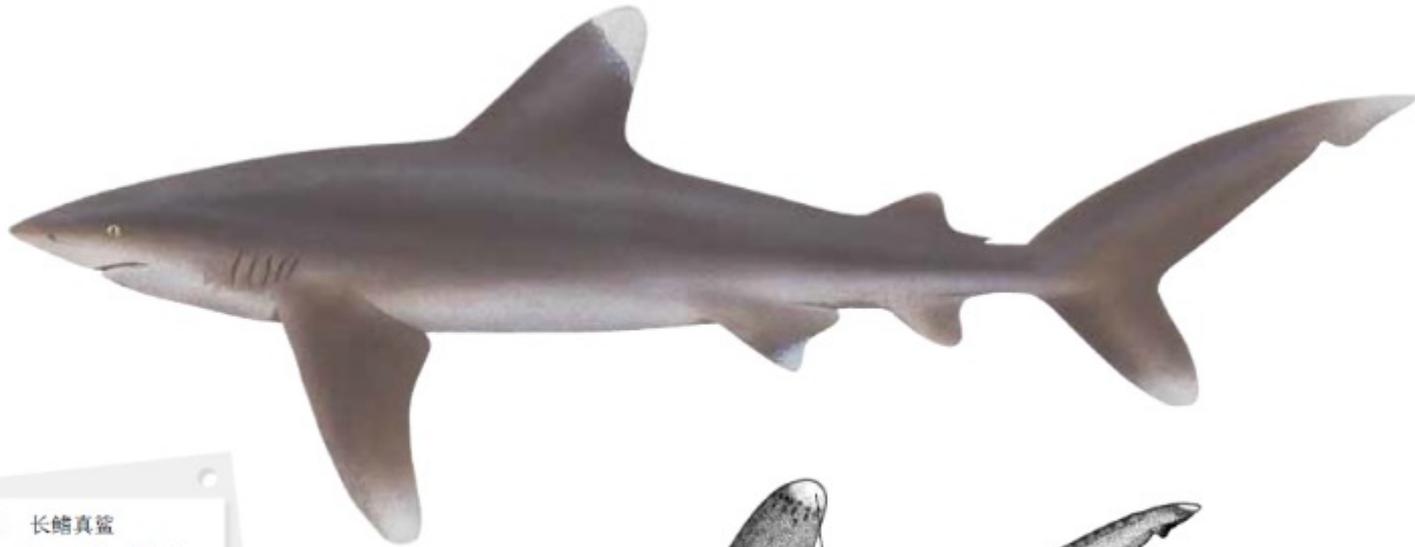
SMA



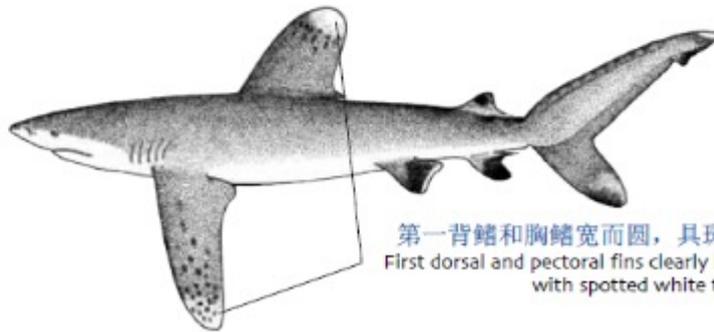
Photo: Andy Murch

Carcharhinus longimanus

OCS



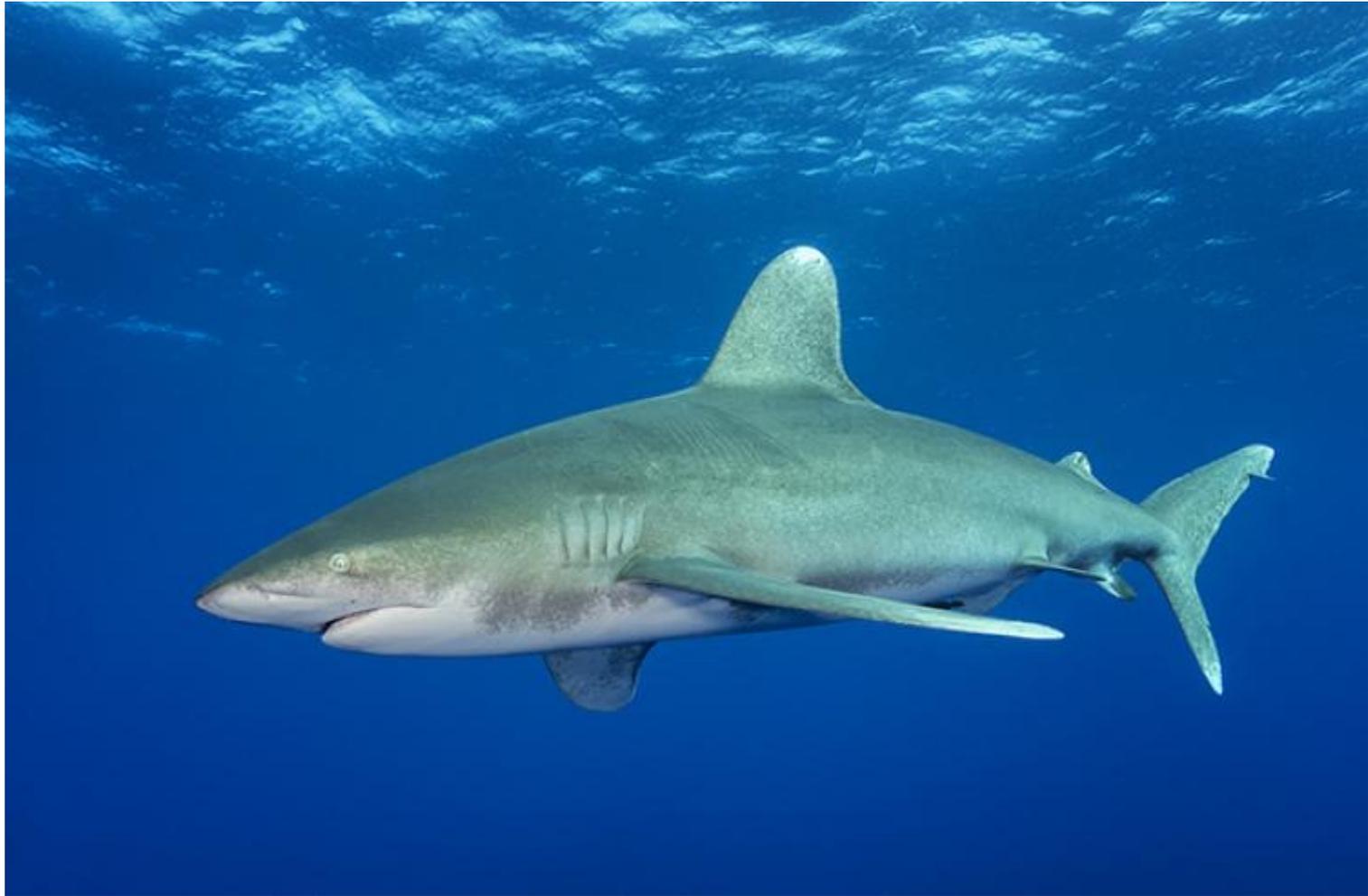
Chinese: 长鳍真鲨
English: Oceanic whitetip shark
French: Requin océanique
Japanese: Yogore
Hawaiian: Mano nigano
Local:



第一背鳍和胸鳍宽而圆，具斑点状的白色尖
First dorsal and pectoral fins clearly broad and rounded,
with spotted white tips

Carcharhinus longimanus

OCS

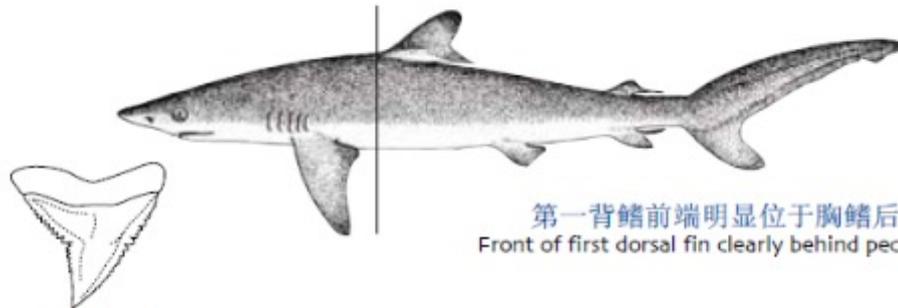


Carcharhinus falciformis

FAL



Chinese: 镰状真鲨
English: Silky shark
French: Requin soyeux
Japanese: Kurotogarizame
Hawaiian: Silk shark
Local:



上齿形状
Shape of upper teeth

第一背鳍前端明显位于胸鳍后方
Front of first dorsal fin clearly behind pectoral fin

Carcharhinus falciformis



Sphyrna lewini

SPL

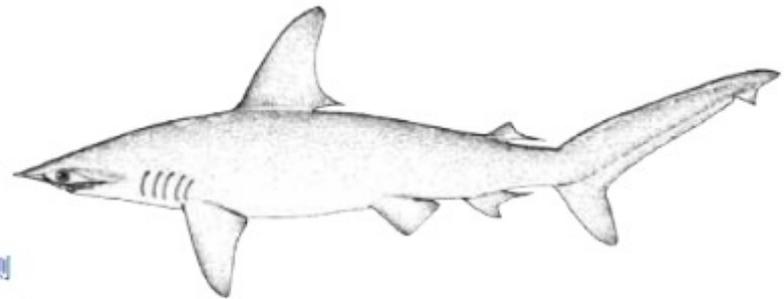


Chinese: 路氏双髻鲨
English: Scalloped hammerhead
French: Requin marteau halicorne
Japanese: Akashumokuzame
Hawaiian: Mano kihikihi
Local:



头前端弯曲，中间凹陷，每侧具独特末端

Front of head curved with middle dent and a distinct lobe at each end



Sphyrna lewini





3.2b Mitigation



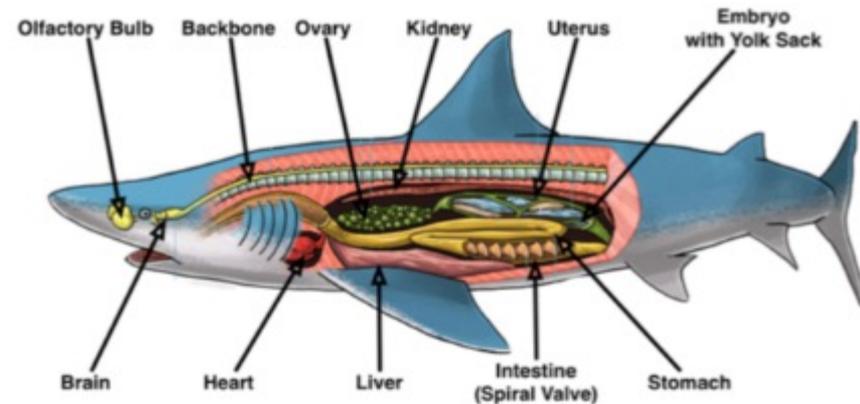
Sharks Bycatch Mitigation

- **Circle hooks:** Useful for turtles and seabirds too. Unsure if they catch less sharks but at least not hooked deeply. Thus, increasing survival.
- **Fish bait:** Sharks favour squid over fish, using fish bait such as mackerel can reduce shark catch rates (particularly blue sharks).
- **Set depth:** Shark catches are significantly higher on shallow-set longlines than deeper ones (>100 m). Shark catch with shallow lines can be 3 to 10 times higher.
- **Nylon leaders:** Wire leaders banned in some countries as maximize retention of hooked sharks. Further, catches of bigeye are higher with nylon than wire leaders.

Considerations for Handling

- Sharks must move forward to pass water over their gills. Being hooked for long periods can weaken sharks and reduce their ability to recover quickly

- The internal organs of sharks are not well anchored in their gut cavity. Lifting by the head or tail or simply removing them from the water can cause serious injury



Poisson 2012

- A shark's head contains many sensitive and fragile sensory organs needed to detect prey. Rough handling can damage these organs

Most Importantly, release sharks AS SOON AS POSSIBLE to Increase Survival



3.2c Handling & Release



Handling Sharks

- When releasing a shark or ray, follow the steps shown to reduce stress and injury and minimise your safety risk. The abundance of many shark and ray species have been declining and ineffective release is seen as a contributing factor.
- Minimise time spent handling and releasing sharks and rays. Some species and sizes of sharks and rays die if they experience too much stress when being caught and handled. Have a lifting device, bolt cutters, de-hooker and line-cutter readily available on deck where crew can get it quickly.

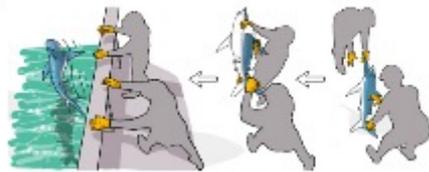
Handling Small Sharks

YES



One hand on the dorsal (top) fin and the other holding the body from below (Poisson et al, 2012)

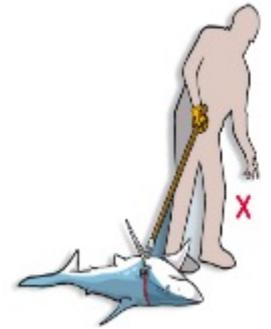
Handling Medium Sharks (2-3 People)



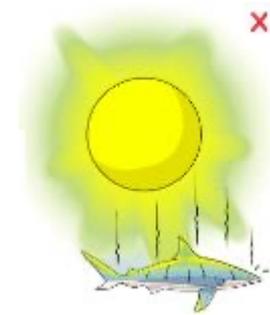
NO



DO NOT lift the animal by its head or tail, as this can severely damage the spinal cord (Poisson et al, 2012)



Lift the fish by pointing its head down toward the water and dropping it in (Poisson et al, 2012)



Handling Large Sharks

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 ©

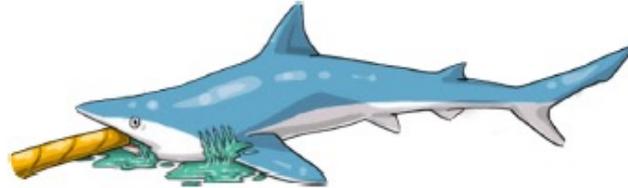


Poisson et al. 2015 ©

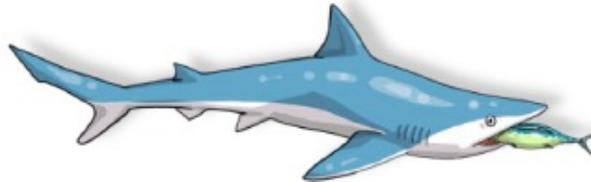
Sharks Handling – Dos and Don'ts



A cool, wet cloth lightly draped over its head can calm an energetic shark. (Poisson et al, 2012)



Inserting a seawater hose in its mouth might improve an animal's chance of survival if, for an unavoidable reason, the shark cannot be released right way. (Poisson et al, 2012)



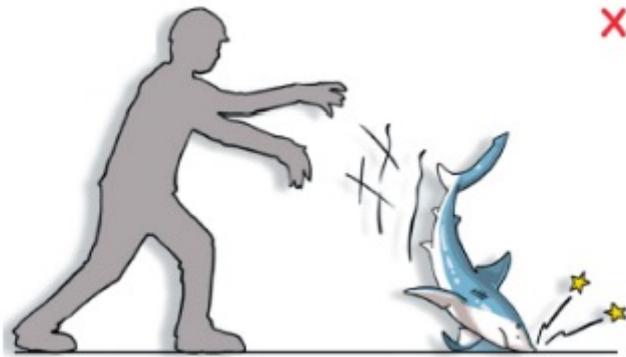
For crew safety, avoid the animal's jaws (some suggest placing a fish in its mouth to prevent bites), and regardless of the animal's state (live or moribund) be cautious at all times. (Poisson et al, 2012)



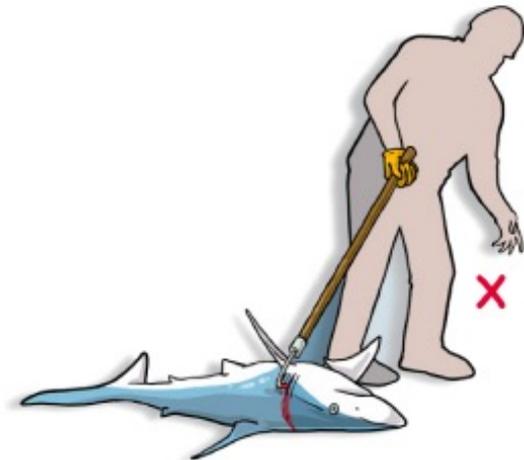
DO NOT lift the animal by its head or tail, as this can severely damage the spinal cord (Poisson et al, 2012)



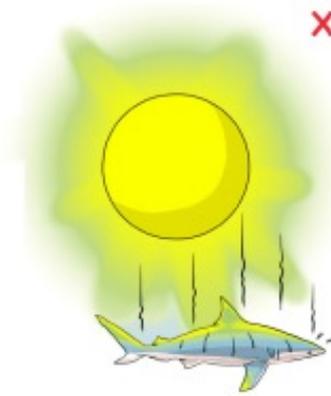
DO NOT insert hands or objects into the gill openings. (Poisson et al, 2012)



DO NOT throw, hit, or squeeze the animal. Prevent the animal from battering itself against the deck or other hard objects. (Poisson et al, 2012)



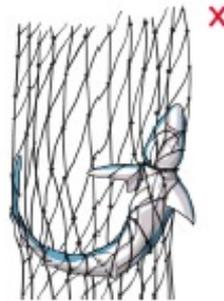
DO NOT insert a gaff, hook, or other pointed object to drag or lift the animal. (Poisson et al, 2012)



DO NOT leave the animal in the sun. If possible, handle the animal in the shade or otherwise reduce its exposure to the sun. (Potsson et al, 2012)

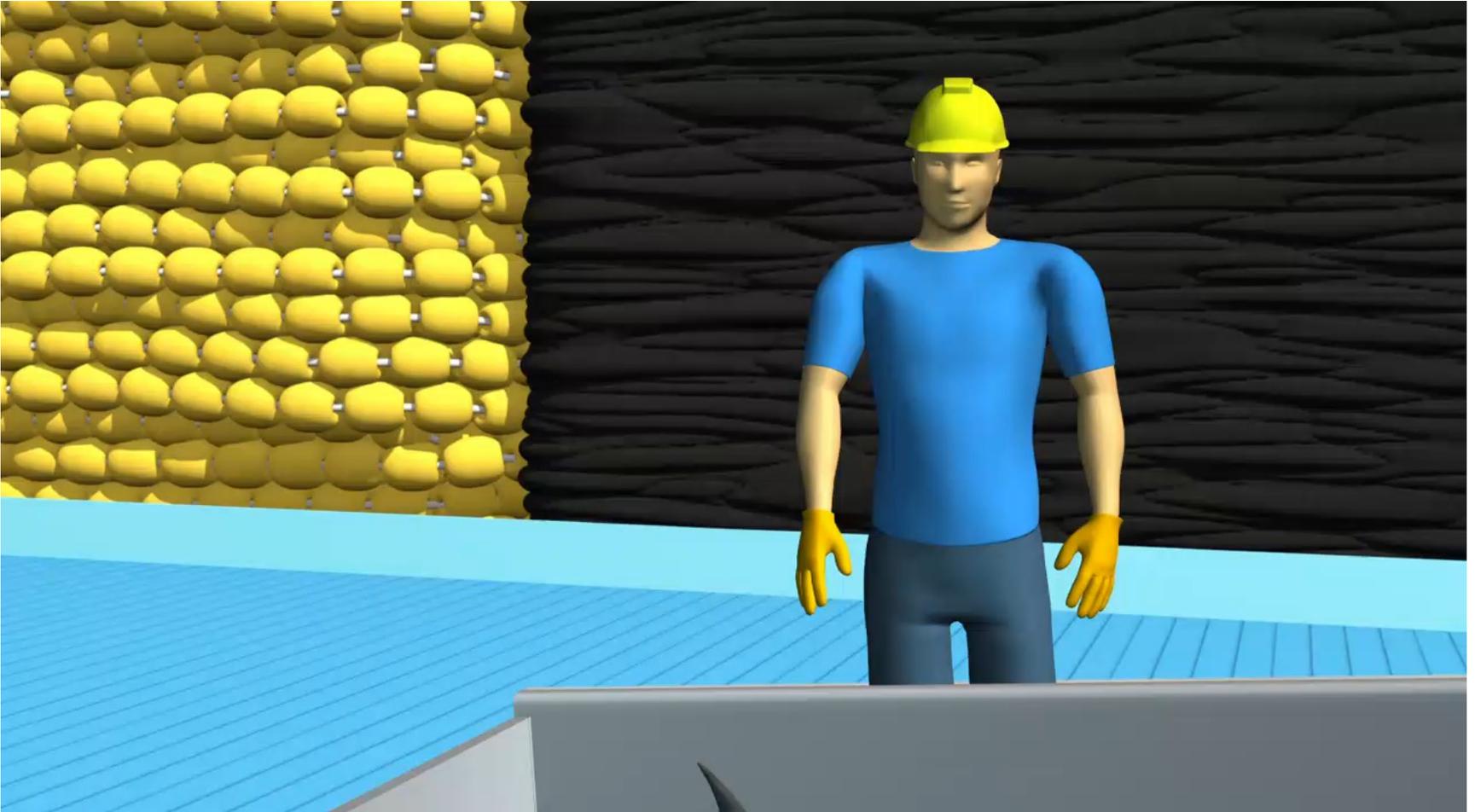


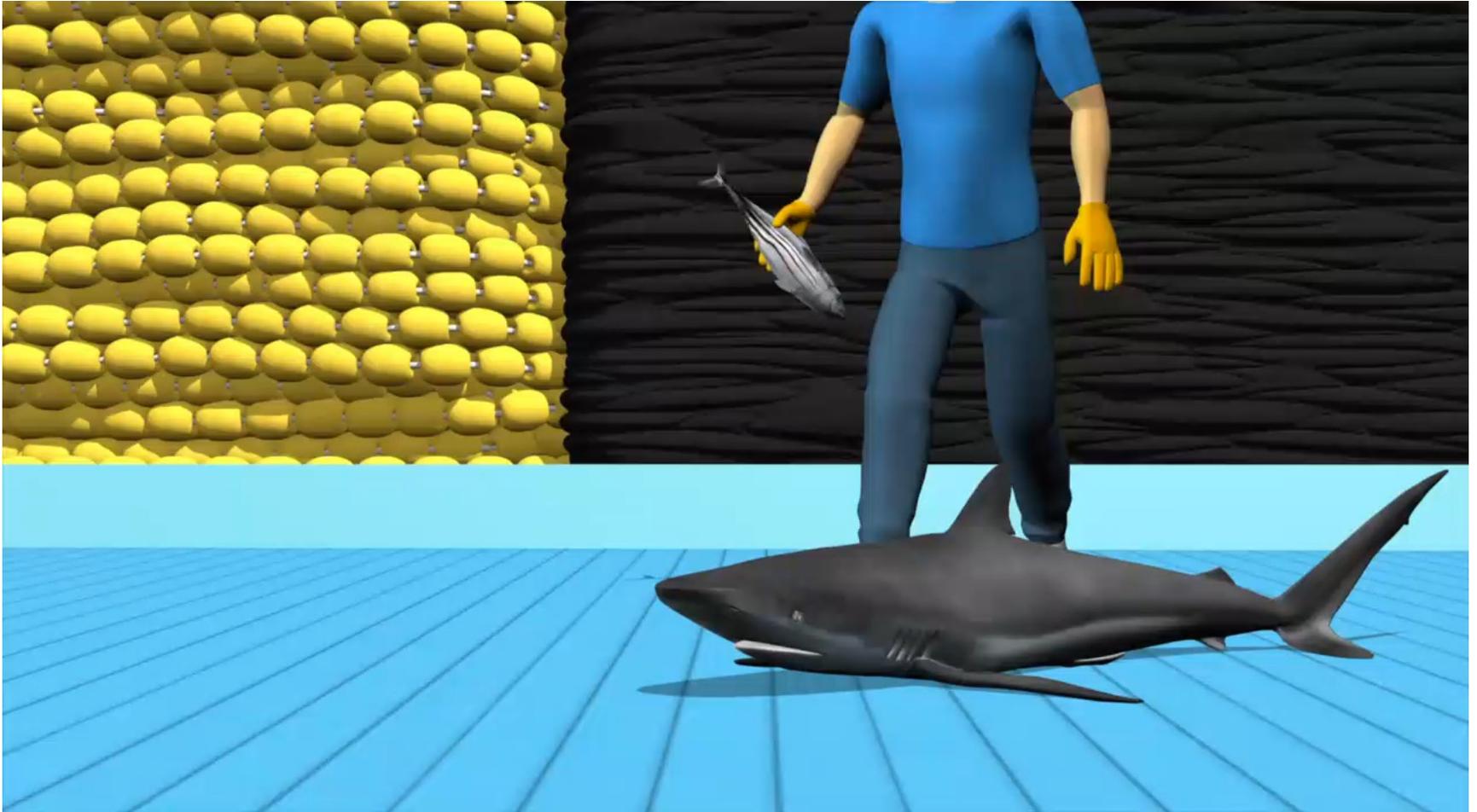
DO NOT yank or push the animal sharply. (Potsson et al, 2012)



DO NOT tug or yank the net around an entangled animal. Instead use clippers, if necessary. For animals entangled in the net, reduce the speed of the net reel. Once the tension is reduced, carefully remove the animal. (Photo: Potsson et al, 2012)









3.3 Turtles

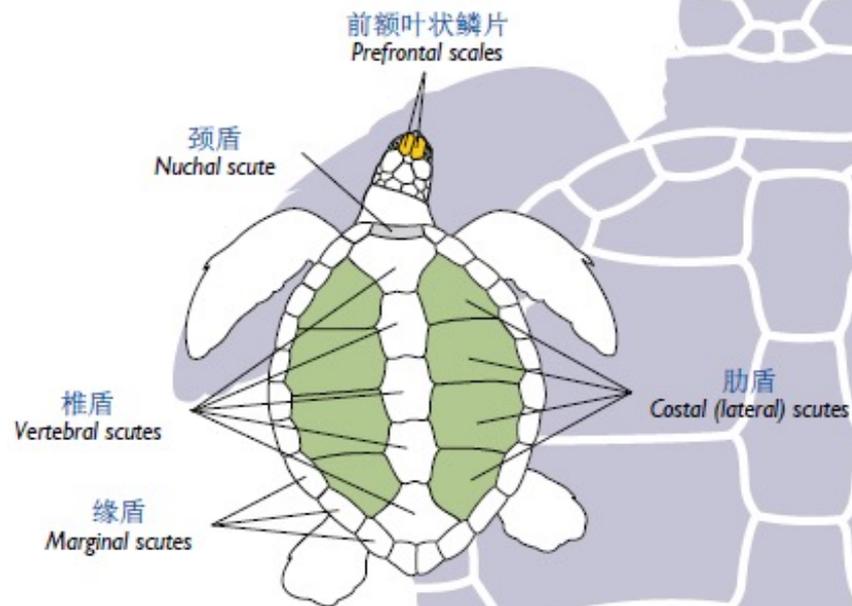
	WCPFC	IOTC	IATTC
Sea turtles	<ul style="list-style-type: none"> ✓ Implement FAO Guidelines ✓ Reporting requirements ✓ ROP collected data to Commission <p>All LL: Carry and use line cutters, de-hookers and dip nets; prompt release/safe handling (CMM 2018-04; in effect 1 Jan 2020).).</p> <p>Shallow set² LL fishery: Must use one of 3 mitigation methods (large circle hooks with 10 deg offset; use only whole finfish as bait; or any other measure or mitigation plan approved by the Commission as capable reducing the interaction rate (observed numbers per hooks fished). (CMM 2018-04; in effect 1 Jan 2020).).</p>	<ul style="list-style-type: none"> ✓ Implement FAO Guidelines ✓ Reporting requirements <p>All LL: Carry and use line cutters, de-hookers; prompt release/safe handling guidelines; encourage use of whole finfish bait (Resolution 12/04I)</p>	<ul style="list-style-type: none"> • Implement FAO Guidelines • Reporting requirements • Implement new observer programs • Resuscitation on board • Prohibit disposal of salt bags or plastic trash at sea (C-04-05 Rev2) • Education and safe handling guides (C-04-05 Rev2) <p>All LL: Carry and use line cutters, de-hookers, scoop-nets; prompt release; encourage research trials on circle hooks, depth, bait, gear modifications; use best practices for safe handling and release (C-19-04; in effect 1 Jan 2021).</p> <p>Shallow set LL²: Employ at least one of the following mitigation measures: (i) Use only large circle hooks; (ii) Use only finfish for bait, OR (iii) Another mitigation measure to reduce sea turtle bycatch that has been approved by the Commission. C-19-04; in effect 1 Jan 2021).</p>
SUMMARY	<ul style="list-style-type: none"> ✓ De-hookers, line cutters etc. ✓ Safe handling ✓ Circle hooks or whole finfish bait 	<ul style="list-style-type: none"> ✓ De-hookers, line cutters etc. ✓ Safe handling ✓ Encourages whole finfish bait 	<ul style="list-style-type: none"> ✓ De-hookers, line cutters etc. ✓ Best practices for handling ✓ Circle hooks or finfish bait ✓ Prohibits disposal of salt bags or plastic trash

The background features a dark blue silhouette of a fishing vessel at the top, with a crane and various structures on its deck. Below the boat, a large school of fish is depicted in various shades of blue, swimming in different directions. The overall scene is set against a dark blue background with subtle wavy lines representing water.

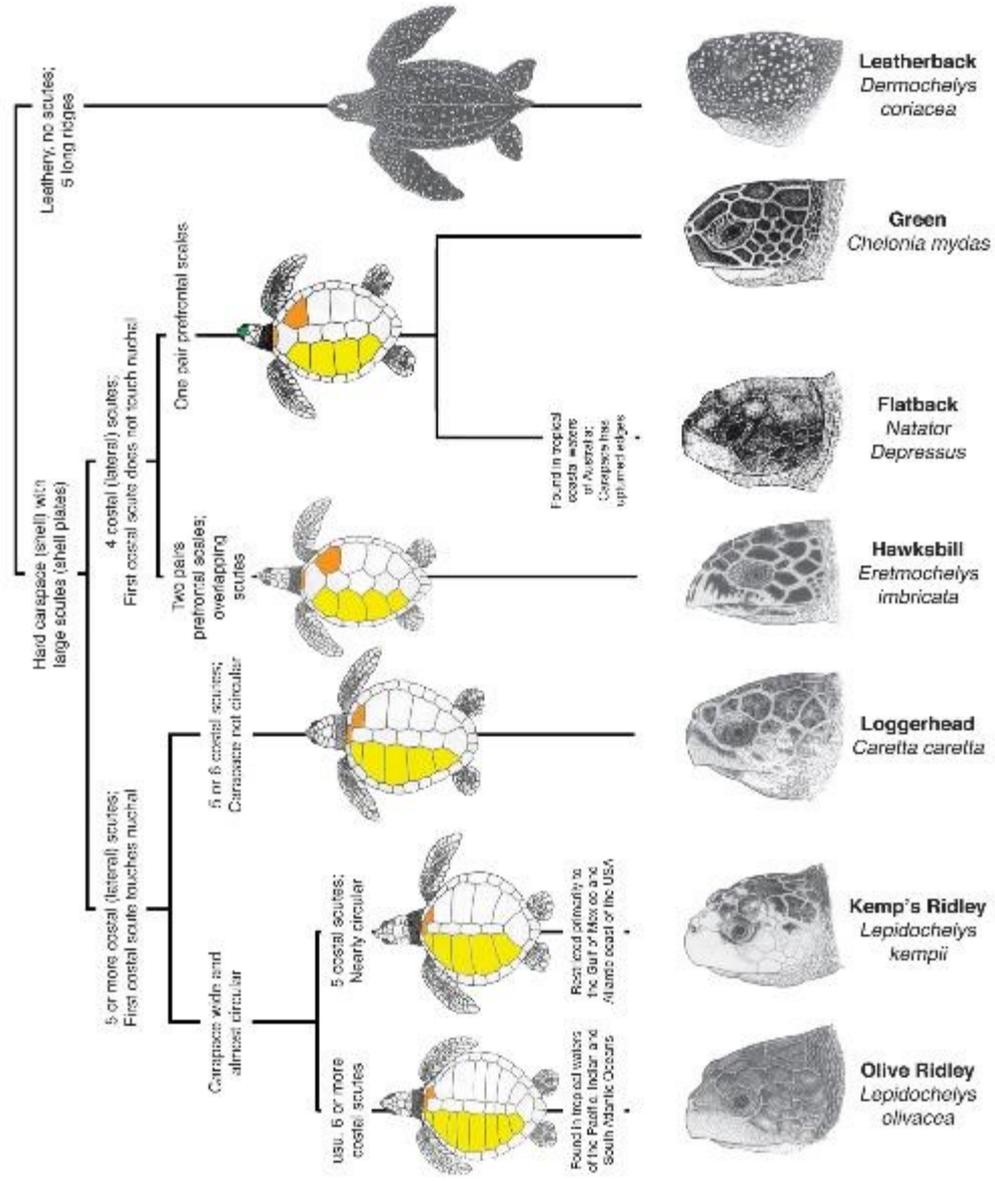
3.2a Species I.D

海龟

Sea turtles



Scientific	Chinese	English	FAO code	Page
<i>Caretta caretta</i>	赤蠎龟	Loggerhead turtle	TTL	103
<i>Chelonia mydas</i>	绿海龟	Green turtle	TUG	98
<i>Demochelys coriacea</i>	棱皮龟	Leatherback turtle	DKK	102
<i>Eretmochelys imbricata</i>	玳瑁	Hawksbill turtle	TTH	101
<i>Lepidochelys olivacea</i>	太平洋丽龟	Olive ridley turtle	LKV	99
<i>Natator depressus</i>	平背龟	Flatback turtle	FBT	100



					
Flatback turtle	Green turtle	Hawksbill turtle	Leatherback turtle	Loggerhead turtle	Olive ridley turtle
平背游龟	绿海龟	玳瑁	棱皮龟	蠍龟	丽龟
납작등 바다 거북	녹색 바다 거북	메부리 바다 거북	장수 바다 거북	붉은 바다 거북	꼬마 바다 거북
Penyu punggung rata	Penyu hijau	Penyu sisik	Penyu belimbing	Penyu anjing, penyu kepala besar, penyu kakaktua	Penyu lumpur
ヒラタウミガメ	アオウミガメ	タイマイ	オサガメ	アカウミガメ	ヒメウミガメ
	Bidog, Katsan, Payukan, Pudno, Tabogan, Tortuga, Tued.	Karahan, Sirik, Sisikan, Ulinaban.	Abi labi, Balimbing, Beneracan, Kanuhan, Kalod Manahanga	Balawan, Garanga.	Kalady, Lambangan, Latun, Lunok, Mukay.
平背龜	綠蠍龜	玳瑁	革龜	赤蠍龜	欖蠍龜

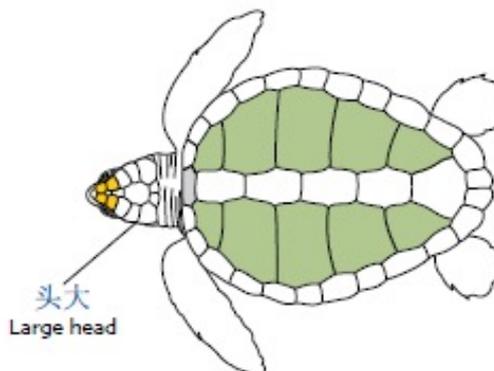
Caretta caretta

TTL



Chinese: 赤蠵龟
English: Loggerhead turtle
French: Tortue caouanne
Japanese: Aka-umigame
Local:

前额叶状鳞片两对
Two pairs of prefrontal scales



肋盾五对；第一对与颈盾
相连接

Five pairs of costal scutes;
the first pair is in contact
with the nuchal scute.

海龟
Sea turtles

Caretta caretta

TTL



海龟
Sea turtles

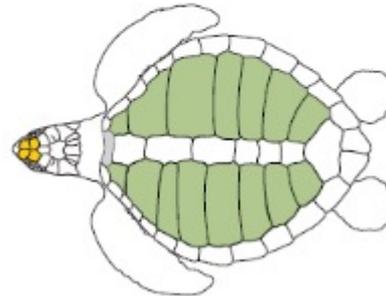
Lepidochelys olivacea

LKV



Chinese: 太平洋丽龟
English: Olive ridley turtle
French: Tortue olivâtre
Japanese: Hime-umigame
Local:

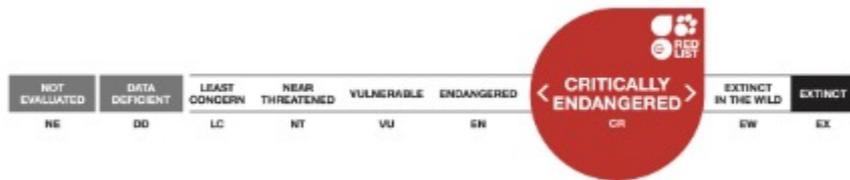
前额叶状鳞片两对
Two pairs of prefrontal scales



五到九对肋盾(两侧数量不一定相同); 第一对肋盾与颈盾相接
Five to nine pairs of costal scutes (not necessarily the same number on either side); the first pair is in contact with the nuchal scute.

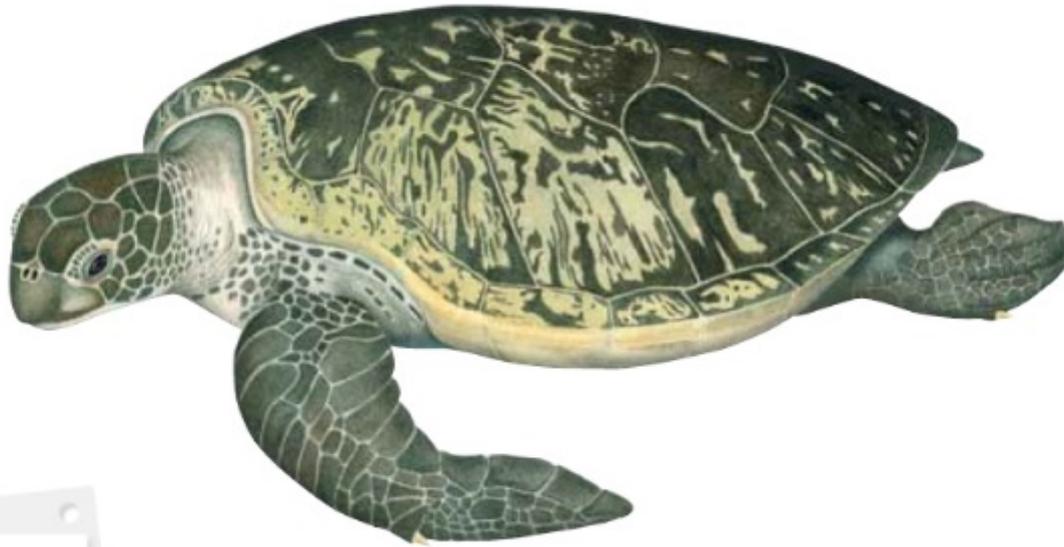
Lepidochelys olivacea

LKV



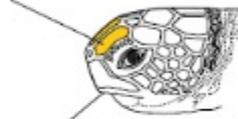
Chelonia mydas

TUG

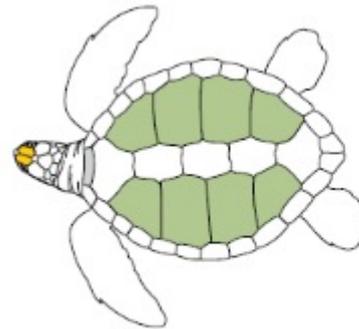


Chinese: 绿海龟
English: Green turtle
French: Tortue verte
Japanese: Ao-umigame
Hawaiian: Honu
Local:

前额叶状鳞片一对
One pair of prefrontal scales



嘴部具齿
Toothed beak



四对肋盾；第一对肋盾与颈盾分离
Four pairs of costal scutes; the first pair is not in contact with the nuchal scute

Chelonia mydas

TUG



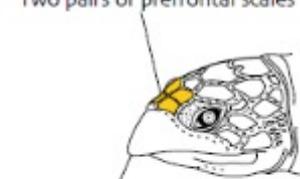
Eretmochelys imbricata

TTH



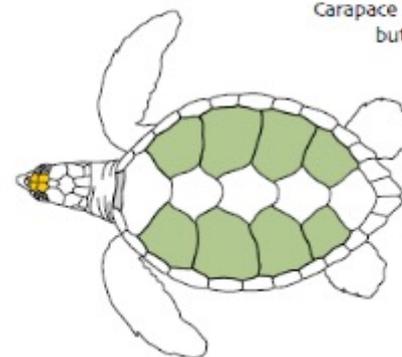
Chinese: 玳瑁
English: Hawksbill turtle
French: Tortue imbriquée
Japanese: Taimai
Hawaiian: Ea, Honu'ea
Local:

前额叶状鳞片二对
Two pairs of prefrontal scales



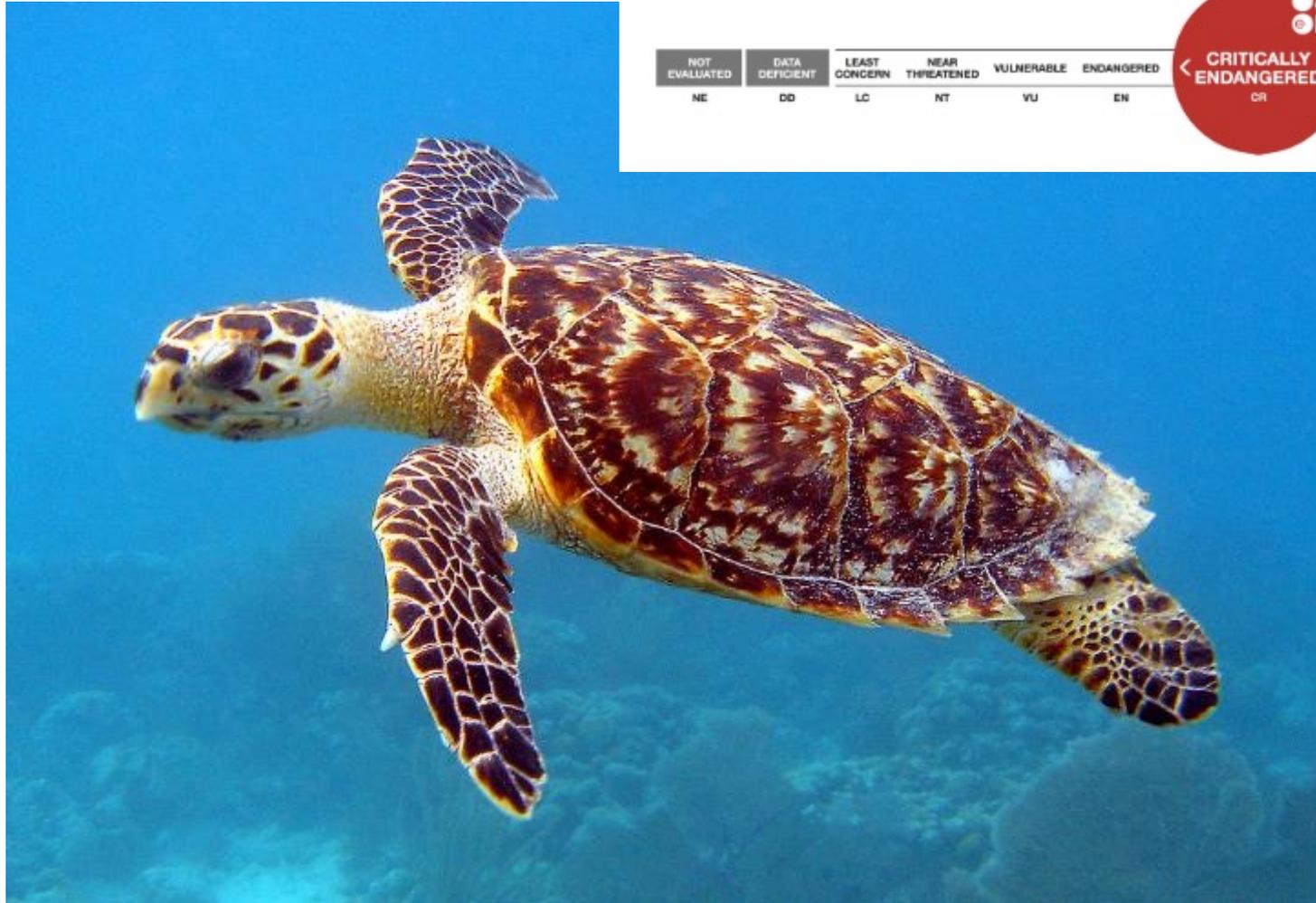
嘴尖钩形
Pointed hooked beak

甲盾重叠，但随年龄而略有退化
Carapace scutes are generally overlapping
but this trait fades with age.



四对肋盾：第一对肋盾与颈盾分离
Four pairs of costal scutes; the first pair is not in contact with the nuchal scute

Eretmochelys imbricata

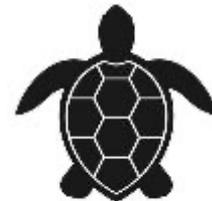


NOT EVALUATED	DATA DEFICIENT	LEAST CONCERN	NEAR THREATENED	VULNERABLE	ENDANGERED	< CRITICALLY ENDANGERED >	EXTINCT IN THE WILD	EXTINCT
NE	DD	LC	NT	VU	EN	CR	EW	EX





3.3b Mitigation



Turtle Bycatch Mitigation

- The best practice to avoid turtle mortality once the animal is entangled is the use of speedboats to release the turtles unharmed from the net before passing through the power block.
- The best time for this action is when the entangled turtle and net leaves the water on the way to the power block (at this point the hauling should be paused). If necessary, use clippers to cut the net.
- Speedboats can also be used to remove any free-swimming encircled turtles.
- When handling, do not lift the turtle by its flippers or use sharp objects (e.g., gaffs) to retrieve them. Hold the turtle by the sides of its shell and ease it into the water head-first as soon as possible.

Disentanglement at the earliest possible stage maximises survival.

Turtle Bycatch Mitigation

- If the turtle appears unconscious place the turtle on a tilted surface so that its back end are 6 in higher than its head. This allows water to drain out of its lungs.
- Keep the animal moist (cover the body—but not the nose and mouth—with a wet towel or spray it periodically with water) and at a temperature above 15° C (60° F).
- Check the turtle's reflexes by touching its tail or eyelid every three hours. An unconscious, but live, turtle may not react.
- If, after 24 hours, the turtle shows no recovery, it is likely dead. However, if it does recover, release it gently into the water.



Hook Type

There are many fishing methods and gear modifications that can reduce sea turtle interactions in longline fisheries.

The following practices have been proved to be highly effective.



USE OF WIDE CIRCLE HOOKS (18/0 OR LARGER)

Large circle hooks appear to reduce the capture of turtles because they are wider at their narrowest point than J hooks, making it difficult for the circle hook to fit inside a turtle's mouth.

Circle hooks are circular, with the point turned perpendicularly back toward the shank. If a turtle bites a circle hook, they are less likely to be deeply hooked

This makes it easier to dehook the turtle, or at least easier to remove most of the gear

Lightly hooked turtles have a greater chance of surviving than deeply hooked turtles, depending on the exact location and on the handling of these animals.

Bait Choice

Turtles eat squid differently than they eat fish.

With squid, they tend to swallow the whole animal in one gulp, increasing risk of being hooked.

With fish bait, they take several, smaller bites and are more likely to eat around the hook instead of swallowing it.

The use of mackerel or other baitfish reduces the chance of hooking turtles.

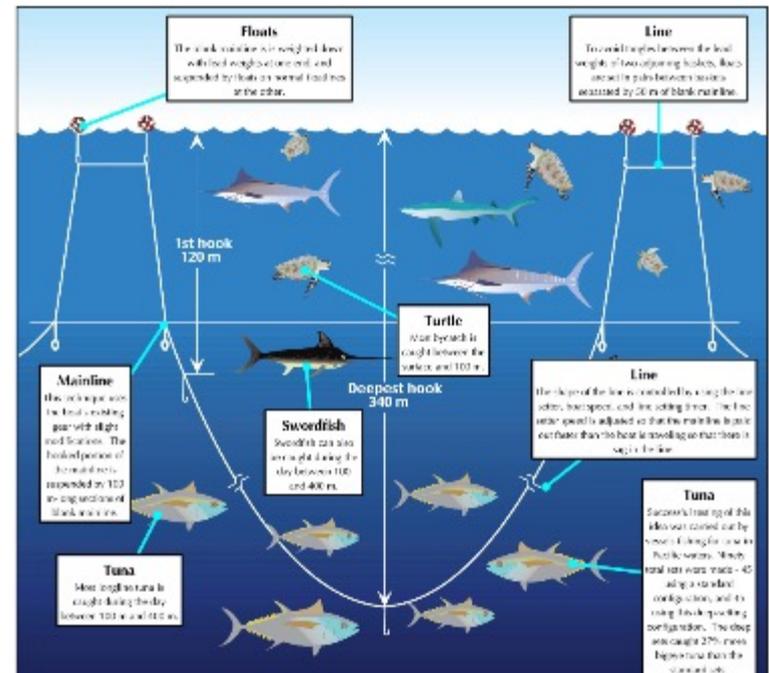


Setting Depth

Turtles tend to prefer shallow waters

Setting gear deeper than 100 m is a good way to avoid turtle interactions. There are several ways to set gear more deeply:

- Increase the length of buoy lines
- Make the branch lines next to buoys longer
- Leave a longer distance on each side of the buoy line before adding branch lines



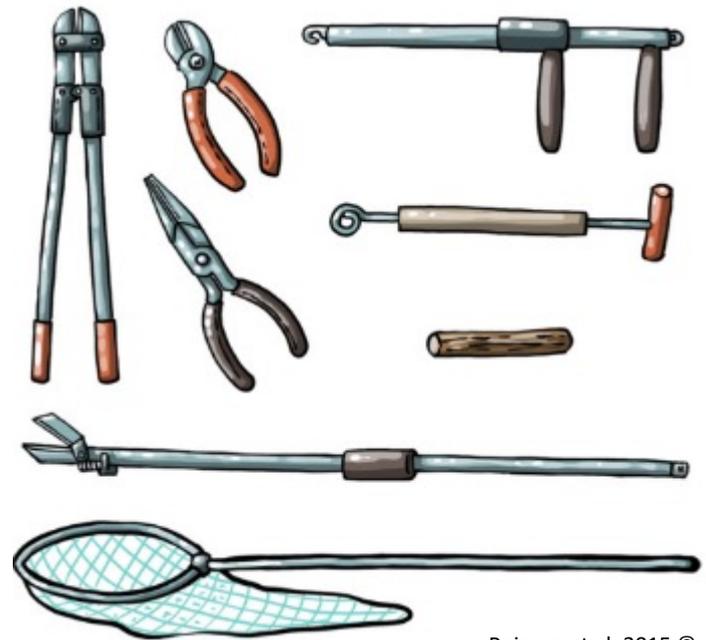


3.3c Handling & Release

Turtle Handling and Release

Releasing turtles is fast and safe if proper tools are on hand, you will need:

1. Long-handled line clipper
2. Long-handled dip net
3. Long-handled dehooker for ingested hooks (may substitute for item 4)
4. Long-handled dehooker for external hooks
5. Long-handled device to pull an “inverted V”
6. Car tire
7. Short-handled dehooker with bite guard for ingested hooks (may substitute for item 8)
8. Short-handled dehooker for external hooks
9. Long-nose or needle-nose pliers
10. Wire or bolt cutters
11. Monofilament line cutters
12. At least two of the following mouth openers and gags:
 - Block of hard wood
 - Large avian oral speculum
 - Set of two sturdy canine chew bones
 - Set of four PVC splice couplings
 - Hank of rope
 - Set of three canine mouth gags
 - Set of two rope loops covered with hose



Poisson et al. 2015 ©

Turtle Handling and Release

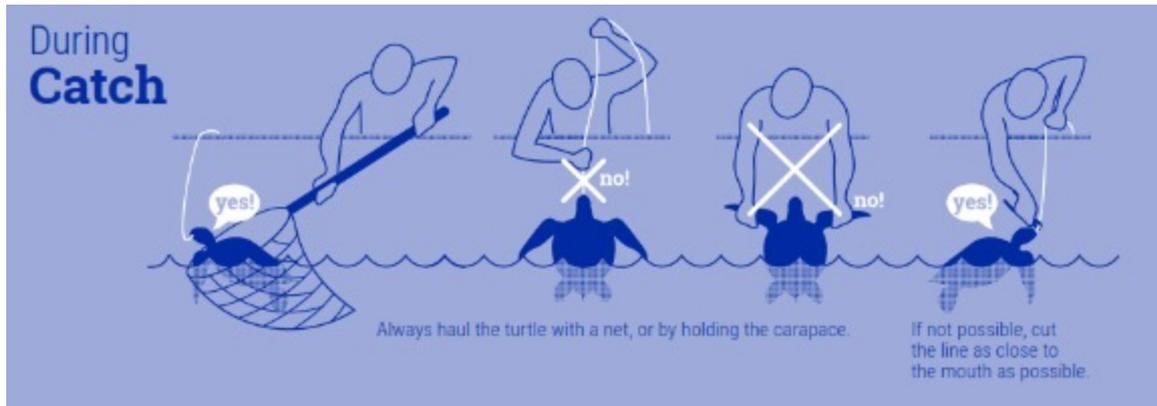
As soon as you see a hooked or entangled turtle

- bring the boat to a stop while releasing tension on the mainline.
- Using constant pressure, pull the branchline in gently to bring the turtle alongside the vessel.
- Never use a gaff or other sharp object to handle a turtle.
- Now you must make a decision about whether to bring the turtle on board or release in water
- This will be influenced by
 - the size of the turtle
 - the conditions at sea



*Leatherback turtle fin-hooked with a J hook
Photo: M. Parga SUBMON)*

Turtle Handling and Release



If the turtle is entangled only and still in the water:

- Secure the loose hook with a long-handled device, such as de-hooker or gaff (but never gaff the animal itself)
- Cut the line with a long-handled line cutter

Turtle Handling and Release

If the turtle is hooked and still in the water

- If hooked internally do not attempt to remove the hook and do not pull on the line
- Use a long-handed line-cutter to release the animal by cutting the line right at the mouth
- If hooked externally or around the beak you may try removing the hook using a “pig tail” dehooker
- If you do not succeed, leave the hook in place and cut the line as short as possible

If the turtle is brought onboard:

- Always use a dip-net to bring the turtle onboard
 - Never use a gaff,
 - Never pull or lift by the line
 - Do not attempt to lift the turtle by its flippers

Turtle Handling and Release

If the turtle is brought onboard:

- Avoid lifting by the flippers
- Lift by holding the front and rear of the shell if possible
- Place the turtle on a coil of rope or automobile tire
- Never place a turtle upside down, this will kill it
- Assess the condition of the turtle which determines what steps to take
 - Is it breathing or moving at all
 - Check response to touching the tail, eyelid or pinch the flippers
 - Try to open the mouth. Strong resistance that requires levering open may indicate a dead turtle
- Be prepared with dehooker devices, mouth openers and gags



Pigtail and J type dehookers (Photo: M Parga SUBMON)

Turtle Handling and Release

DO NOT REMOVE HOOK IF DEEPLY HOOKED, when hook's barb is not clearly visible or back in the mouth, as it can cause more damage to try and remove it:

Use line cutters to cut the line as close to the hook as possible. If you can use bolt cutters to cut the hook near the barb or the eye and then pull it out.



<https://www.youtube.com/watch?v=yWpodG16YoA&feature=youtu.be>

Turtle Handling and Release

If the turtle is brought onboard:

- Assess the hook location and act accordingly. If hooked in the jaw or beak:
- Be prepared with mouth gags and mouth openers
 - Rope coils covered with tubing, wood deck brush handle, etc.
- Open the turtle's mouth



*Mouth openers (rope) and gag (deck brush handle)
(Photo: M Parga SUBMON)*

Hot tip!

- In order to open the mouth of a turtle, place your thumb and index fingers at both sides of the nose. This immediately triggers the opening of the mouth in turtles. If you are holding a mouth gag in your other hand, you can use this response to quickly place it at the jaw hinge of the mouth to keep it open and easily check the mouth and the hook.



A short piece of PVC pipe allows easier hook extraction and prevents being bitten by the turtle (Photo: M Parga SUBMON)

Turtle Handling and Release

If the turtle is hooked externally or lightly in the jaw:

- Use a dehooker or pliers to gently remove the hook

If the point and barb of the hook is visible:

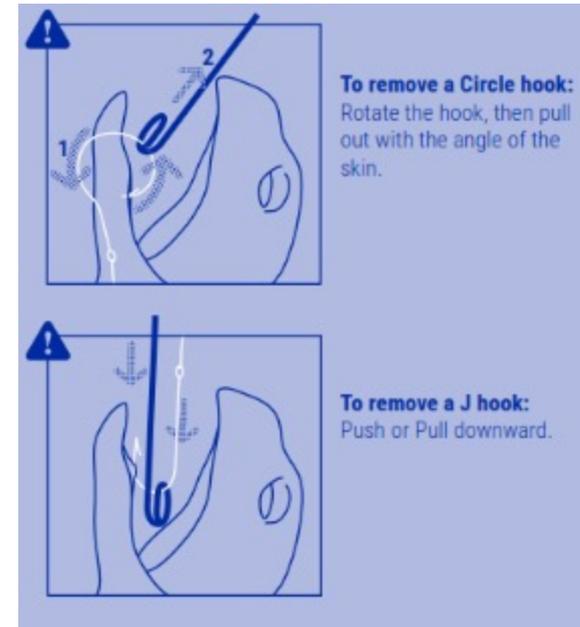
- Cut the hook shank with bolt cutters and pull the hook free
- Or flatten the barb with pliers and remove hook the way it went in
- Or remove the line from the hook eye and pull the hook free by the point and barb side



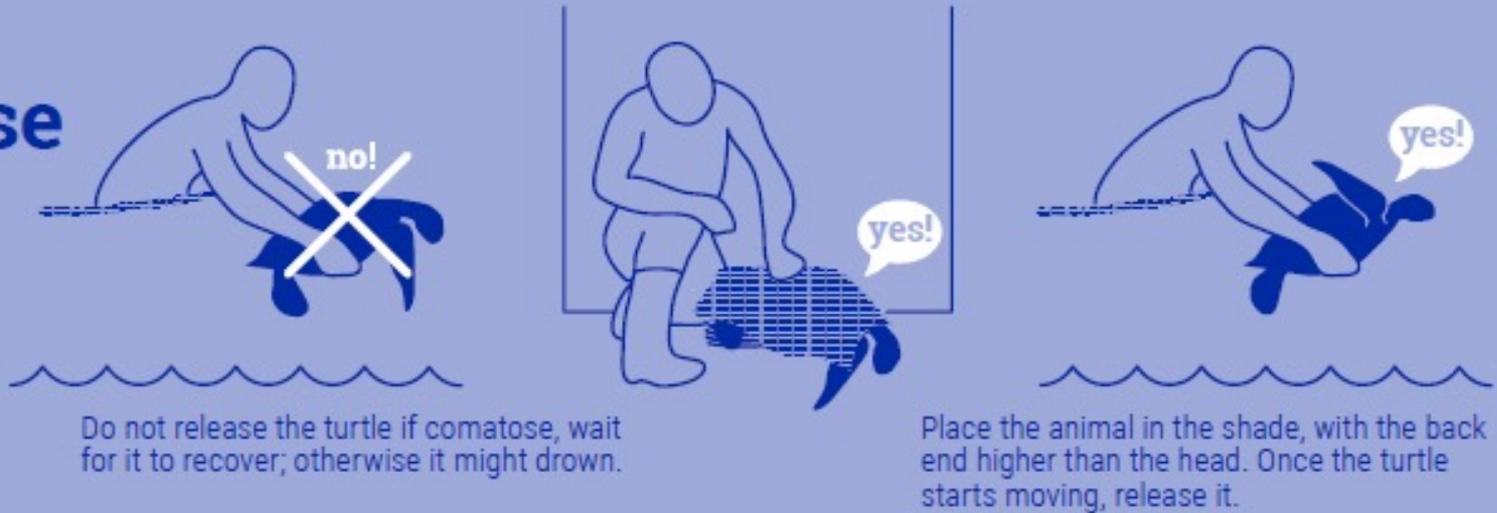
*Jaw hooked turtle where hook shaft should be cut before removal
(Photo: M Parga SUBMON)*

Turtle Handling and Release

- Lay the dehooker on the line with the open end of the pigtail facing up
- Pull the dehooker toward you to engage the line, then turn dehooker a quarter turn clockwise
- Slide the dehooker down the leader until it engages the shank of the hook
- Bring the hands together, make sure the line is tight and parallel to the dehooker
- Give a light thrust downwards
- Pull the dehooker out with the hook

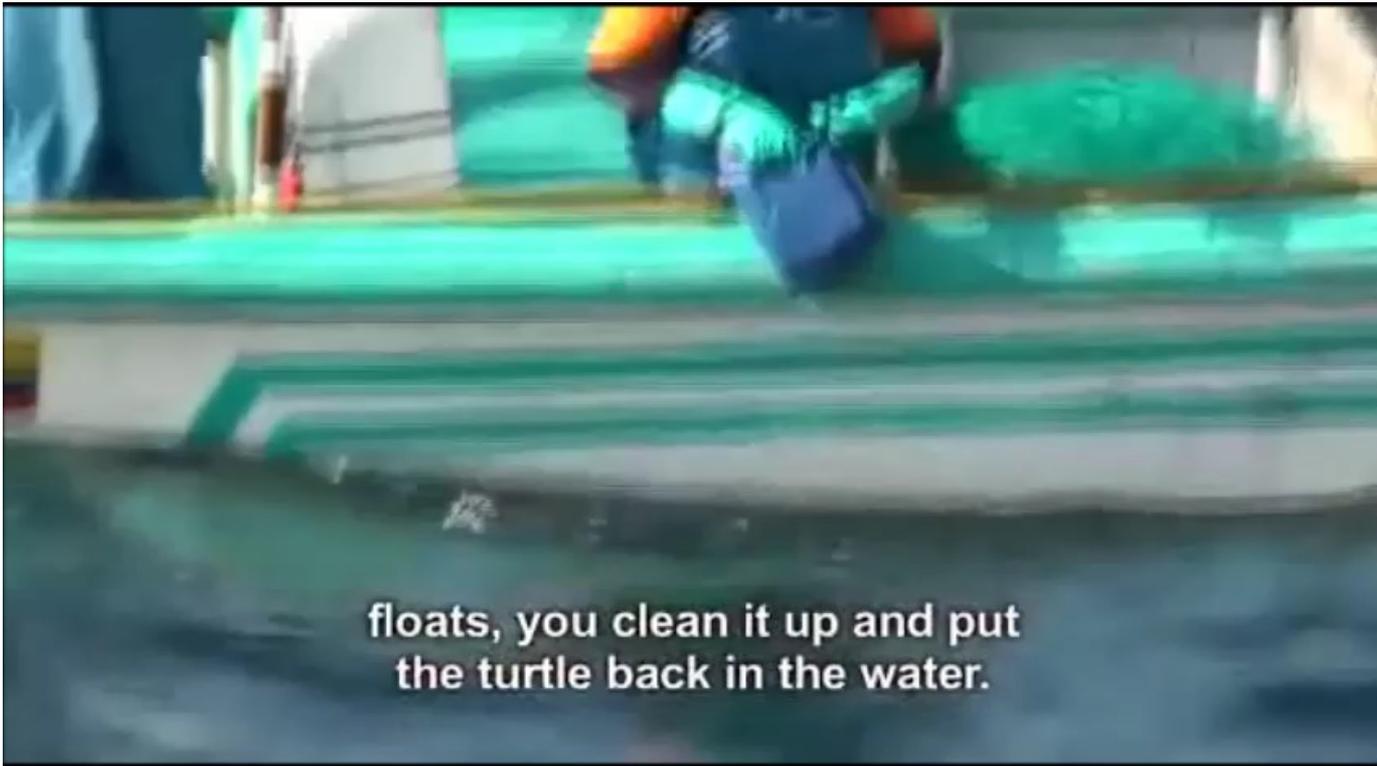


During Release

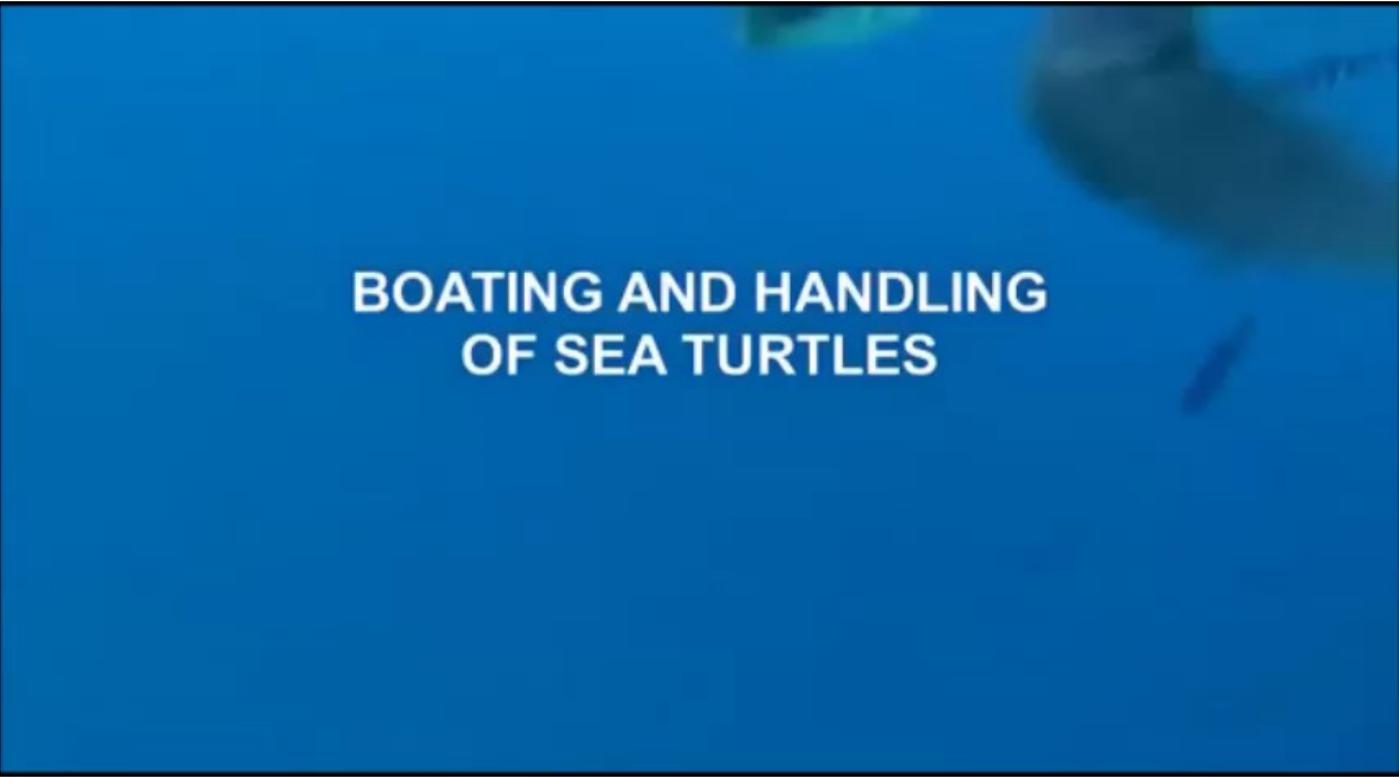


When you return the turtle back to the sea:

- Check there is no fishing gear in the water
- Bring the vessel to a stop
- Put the engine in neutral to disengage the propeller
- Ease the turtle into the water head first holding by sides of the shell. Use a side door if you have one
- Avoid dropping the turtle from a great height
- Make sure the turtle is a safe distance from the boat before engaging the propeller



floats, you clean it up and put
the turtle back in the water.

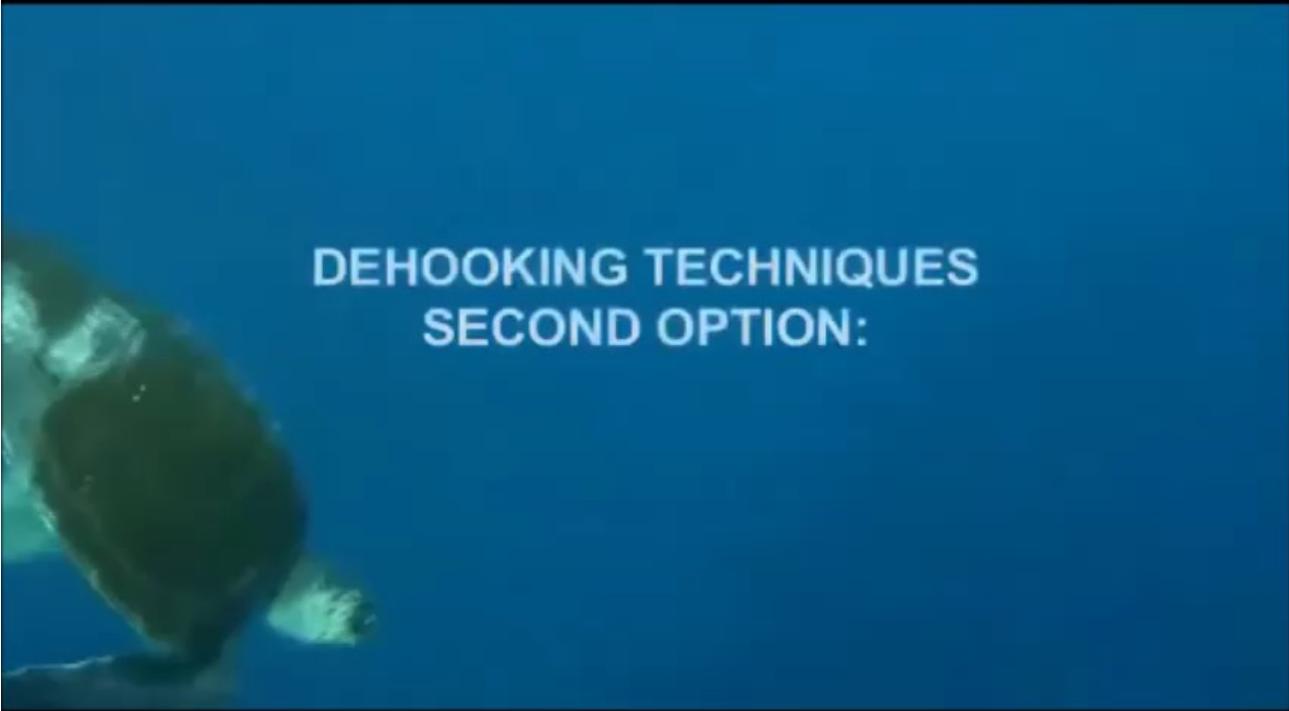
An underwater photograph of a sea turtle swimming in clear blue water. The turtle is positioned in the upper right quadrant of the frame, moving towards the left. The background is a deep, clear blue, with some faint, out-of-focus shapes that could be other marine life or structures.

BOATING AND HANDLING OF SEA TURTLES









DEHOOKING TECHNIQUES
SECOND OPTION:



3.4 Seabirds

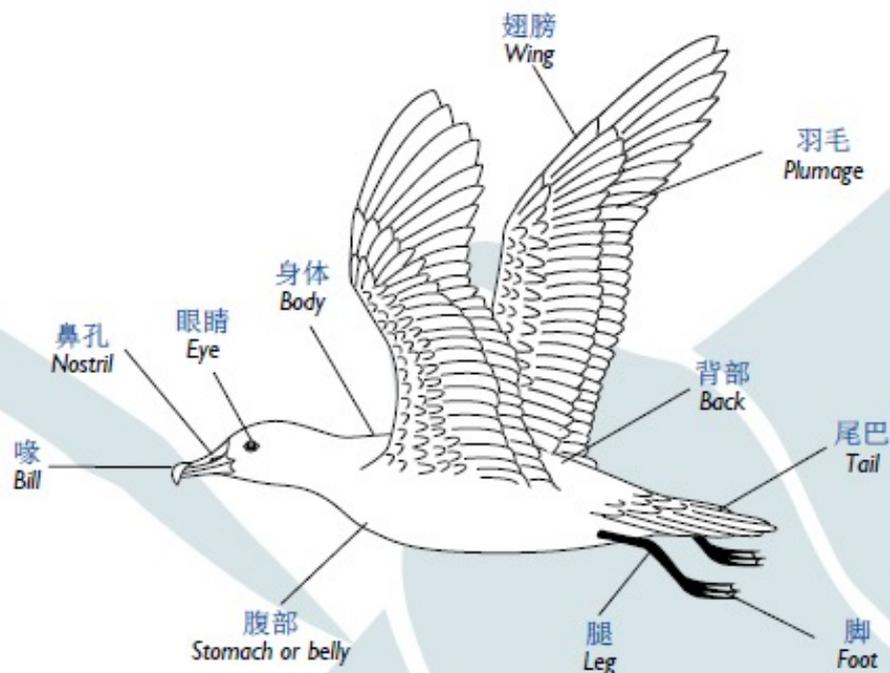
	WCPFC	IOTC	IATTC
Seabirds	<ul style="list-style-type: none"> ✓ Implement FAO IPOA-Seabirds ✓ Safe/live release ✓ Reporting requirements <p>CMM 2018-03: <u>South of 30 deg south:</u> Must use either two of these measures (weighted branch lines, night-setting or tori lines) or use hook-shielding devices. (In force 1 Jan 2020).</p> <p><u>25 deg south - 30 deg south:</u> Must use at least one of these 3 measures: weighted branch lines, tori lines or hook-shielding devices. (In force 1 Jan 2020).</p> <p><u>North of 23 deg N:</u> LS³ LL: Must use at least 2 of the mitigation measures provided in the CMM, including at least one of: side-setting with bird –curtain and weighted branch lines, night setting with minimum deck lighting, tori lines, weighted branch lines, and hook-shielding devices.</p> <p>Small scale LL: Must use at least one of: side-setting, night setting, tori lines and weighted branch lines.</p>	<ul style="list-style-type: none"> ✓ Implement FAO IPOA-Seabirds ✓ Safe/live release ✓ Reporting requirements <p>LL: South of 25 deg S: Must use at least two of the three mitigation measures in the Resolution: night-setting, bird scaring/Tori lines; line weighting (Resolution 12/06)</p>	<ul style="list-style-type: none"> ✓ Implement FAO IPOA-Seabirds ✓ Safe/live release ✓ Reporting requirements ✓ Encourage national observer programs for LL <p><u>North of 23 deg N (except in Mexican waters) and South of 30 deg S plus an additional area:</u></p> <p>LL (>20m): Must use at least 2 of the mitigation measures provided in the Resolution, including at least one of: side-setting, night setting, tori lines and weighted branch lines. (C-11-02)</p> <p>Other LL in other EPO areas: voluntary implementation. (C-11-02)</p>
SUMMARY	<ul style="list-style-type: none"> ✓ More than one required from menus, depending on fishery, e.g., weighted branch lines, night-setting, tori lines, hook-shielding devices, side-setting with bird –curtain 	<ul style="list-style-type: none"> ✓ At least 2 required from menu: night-setting, bird scaring/Tori lines; line weighting 	<ul style="list-style-type: none"> ✓ At least 2 required from menu, including one of: side-setting, night setting, tori lines and weighted branch lines



3.4a Species I.D.

海鸟

Seabirds



Scientific	Chinese	English	FAO code	Page
Diomedidae	信天翁科	Albatrosses	ALZ	108
<i>Diomedea immutabilis</i>	黑背信天翁	Laysan albatross	DIZ	107
<i>Diomedea nigripes</i>	黑脚信天翁	Black-footed albatross	DKN	106
Laridae	鸥科	Gulls, Terns and Skuas	LRD	111
Procellariidae	鹱科	Petrels and Shearwaters	PRX	110
Sulidae	鲣鸟科	Boobies and Gannets	SZV	109

GREAT ALBATROSS



Great albatross (Photo: Dimas Gamica, ProyectoAlbatros)

MOLLYMAWKS



Mollymawks (Photo: Oliver Yates, BirdLife International)

PETRELS & SHEARWATER



Petrels & Shearwaters (Photo: Oliver Yates, BirdLife International)

STORM PETRELS



Storm Petrels (Photo: JJ Harrison)

BOOBIES & GANNETS



Boobies and Gannets (Photo: John Paterson, ATF Namibia)

GULLS



Gulls (Photo: Luis Cabezaz, ATF Chile)

Diomedidae

本科物种:

- 钩型大喙
- 大型鸟类
- 翼展达3.5米
- 鼻孔外端在喙的基部, 两侧各一个

Species in this family have:

- Large hooked bill
- Large birds
- Wing span up to 3.5 m
- External nostrils at base of bill, one on each side

Chinese: 信天翁
English: Albatrosses
French: Albatros
Japanese: Ahoudori
Local:



ALZ

Diomedidae

ALZ





3.4b Mitigation

Seabird Bycatch Mitigation

- Mortality in fisheries threatens the survival of some seabird species
- The birds most often caught are especially sensitive with low fecundities.
- You can increase survival chances for a bird brought aboard alive and prevent injury to yourself by handling the bird properly. For threatened species, each bird saved is important.

RFMO Regulations

Table 1: Mitigation measures

<i>Column A</i>	<i>Column B</i>
<i>Side setting with a bird curtain and weighted branch lines¹</i>	<i>Tori line²</i>
<i>Night setting with minimum deck lighting</i>	<i>Blue-dyed bait</i>
<i>Tori line</i>	<i>Deep setting line shooter</i>
<i>Weighted branch lines</i>	<i>Management of offal discharge</i>
<i>Hook-shielding devices³</i>	

Tori Lines

Tori lines: Also known as bird scaring lines, bird curtains or streamers.



Bird scaring line (Photo: Sebastian Irujo, Albatross Risk Ferry, Uruguay)

A line is towed from a high point near the stern from which streamers are suspended at regular intervals, flapping to deter birds.

The tori lines are more effective when the streamers flap directly above the baited hooks and using two tory lines (to port and to starboard of the baited hooks).

A video about deploying a bird-scaring line. Available at <http://youtu.be/9WG6drHNcrk>

Night Setting

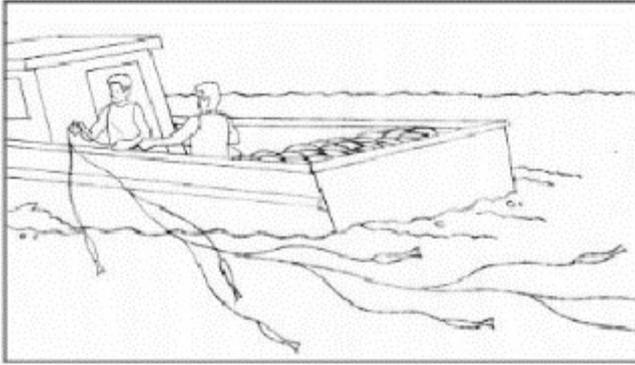
Some marine seabirds like albatrosses do not feed at night, thus setting and retrieving fishing gear at night will minimise interactions with fishing gear.

Deck lighting should be kept to a minimum, using only light needed to comply with navigational rules and best safety practices

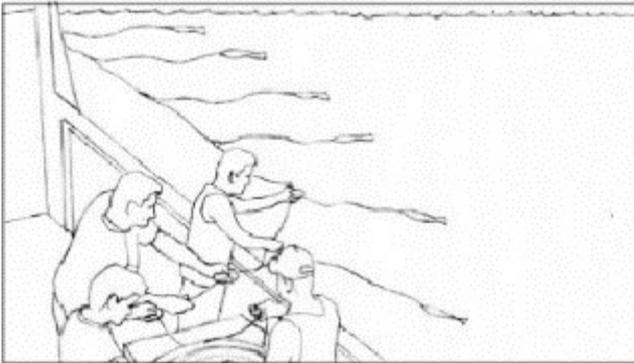


Night setting (Photo: Ricardo Hoinkis, Projeto Albatroz)

Side Setting



Setting off the side (at least 1m forward of the Stern) reduces time that baited hooks are near the Surface and visible to birds. By tossing the baited hook forward and close to the hull, under the protection of a bird curtain, it gives time to the baited hook to sink beyond birds reach.



Another advantage is it requires only one work area, eliminating the chore of moving gear and bait between setting and hauling stations.

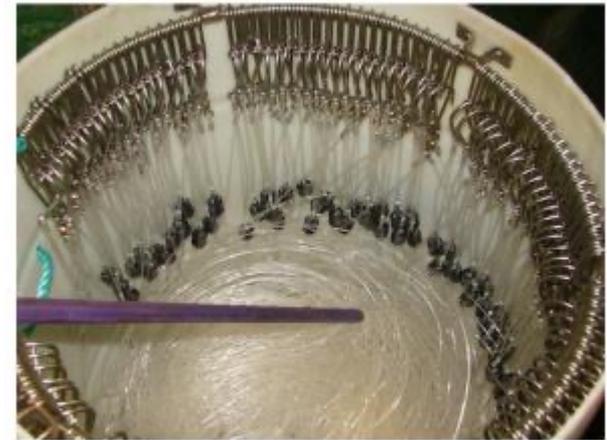
Weighted Branchline

Weighted branchlines sink faster and reduce time for seabirds to access the bait. Swivels are used frequently for weighting, but “safe leads” which slide off the branchline in case of breakage are safer.

Weight should be at least :

- 45 g for <1 m from the hook
- 60 g for 1-3.5 m
- 98 g for 3.5-4 m

For the SW Pacific option of >40 g weight within 50 cm of hook)



Weighted branchlines (Photo: Sebastian Jimenez, Albatross Task Force, Uruguay)

Offal Discharge

Vessels may ensure no offal discharge during setting or hauling, or use strategic offal discharge from the opposite side of the boat to setting/hauling, to attract birds away from baited hooks.

If you intend to use this technique, remember to keep enough offal on hand between the haul and the set when it will be needed.



Bait Treatment

Blue-dyed baits may be less visible to seabirds during the line setting operation and have been proposed as a way to reduce feeding on and accidental hooking of seabirds.

Experiments have shown that blue-dyed squid bait is less detectable to seabirds while blue-dyed fish baits are not as effective (Cocking et al. 2008).

This strategy has been promoted for seabird bycatch mitigation in the Hawaii longline fishery.



Bait Treatments - Blue-dyed bait (Fabiano Peppes, Projeto Albatroz)



3.4c Handling & Release

Handling and Release

When finding a live seabird on the line slow the vessel to a stop and ease the bird to the side of the vessel by steadily bringing the line, without jerks. Use a long-handed dip net if available.

Birds can bite so protection for eyes and gloves are useful. To correctly hold a bird:

- Hold it behind the head at the top of the neck
- Fold the feathers and wings back into their natural position against the body
- Do not accidentally restrict its breathing by covering nostrils or squeezing too tightly
- Cover its body with towel to protect the feathers from oil and other damage

https://www.youtube.com/watch?v=eLK1BPV_Wic



How to CORRECTLY hold a bird. (John Paterson, AIF Namibia)



How NOT to hold a bird. (Juliano Cesar, Projeto Albatroz)

Handling and Release

If a bird is lightly hooked in the bill, leg or wing, and you can see the barb of the hook: remove the excess line, cut off the barb with bolt cutters, and then back out the rest of the hook.



Hooked bird (Dinaz Gimica, Proyecto Albatroz)

If the bird is deeply hooked in the body or throat, cut the line as close to the hook as possible, leaving the hook in place.

Removing a deeply embedded hook can cause more harm than good. Never try to pull on the leader to remove the hook.

A fully recovered bird can stand on its feet, hold its head up, react to sound, breathe without noise and retract its wings normally.

To release a bird, stop the vessel and set the bird on the water's surface. Do not throw in the air.

If you encounter a tagged bird record the number, species, time and place of capture.



3.5 Cetaceans

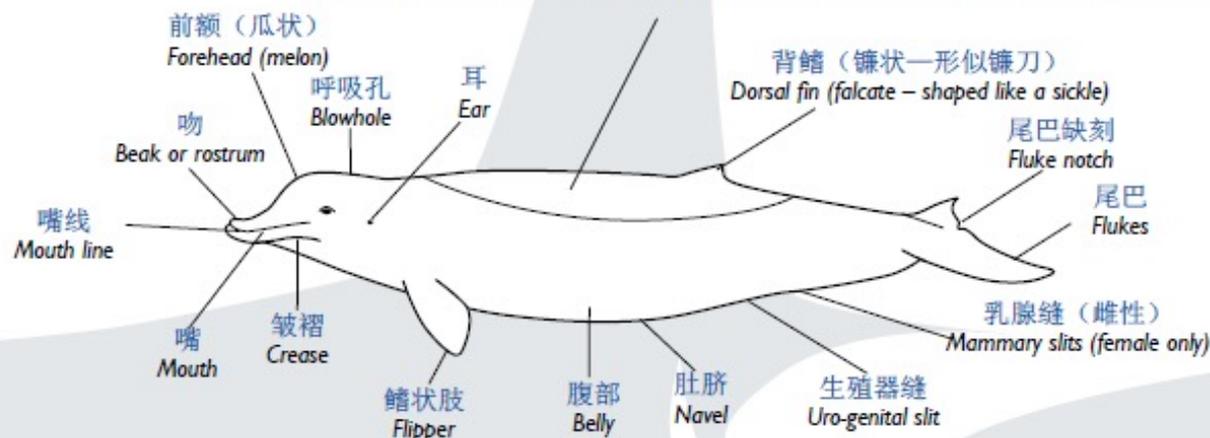


3.5a Species I.D

齿鲸类

Toothed whales

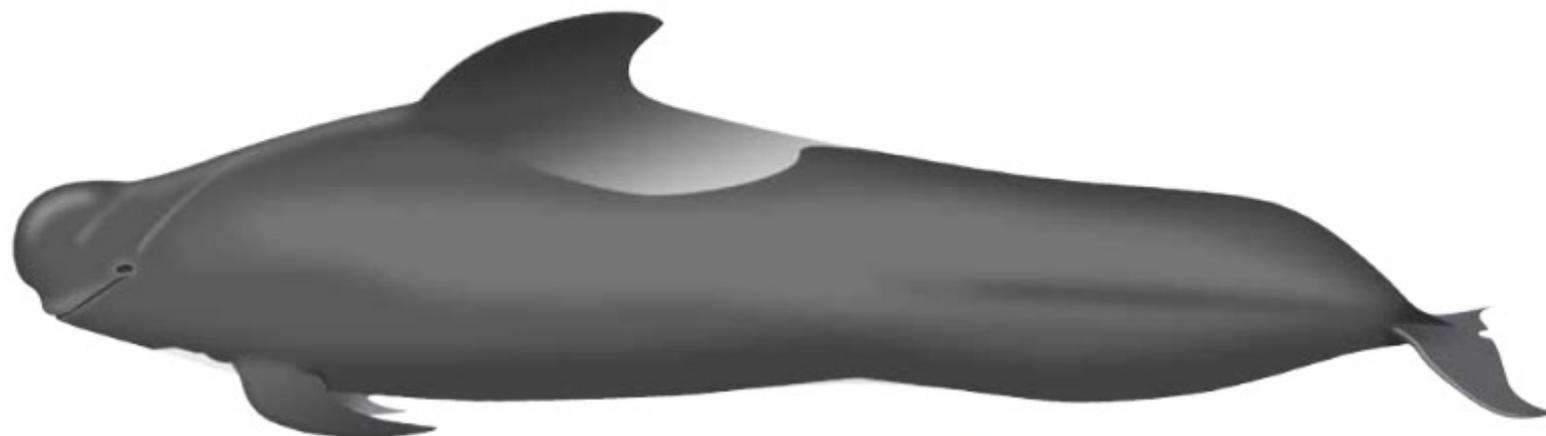
鞍部 (颜色、深度和大小取决于性别、年龄、生活状态和视其的水中位置)
Cape (colour, depth and size may depend on sex, age, life status and where they are seen in the water)



Scientific	Chinese	English	FAO code	Page
<i>Feresa attenuata</i>	侏虎鲸	Pygmy killer whale	KPW	117
<i>Globicephala macrorhynchus</i>	短肢领航鲸	Short-finned pilot whale	SHW	115
<i>Kogia breviceps</i>	小抹香鲸	Pygmy sperm whale	PYW	120
<i>Kogia simus</i>	倭抹香鲸	Dwarf sperm whale	DWW	121
<i>Mesoplodon densirostris</i>	布氏长喙鲸	Blainville's beaked whale	BBW	122
<i>Mesoplodon ginkgodens</i>	银杏齿中喙鲸	Ginkgo-toothed beaked whale	TGW	123
<i>Mesoplodon spp.</i>	喙鲸属	Other beaked whales	MEP	125
<i>Orcinus orca</i>	虎鲸	Killer whale	KIW	118
<i>Peponocephala electra</i>	瓜头鲸	Melon-headed whale	MEW	116
<i>Physeter macrocephalus</i>	抹香鲸	Sperm whale	SPW	119
<i>Pseudorca crassidens</i>	伪虎鲸	False killer whale	FAW	114
<i>Ziphius cavirostris</i>	柯氏喙鲸	Cuvier's beaked whale	BCW	124

Globicephala macrorhynchus

SHW



Chinese: 短肢领航鲸
English: Short-finned pilot whale
French: Globicéphale tropical
Japanese: Kobire-gondo
Local:

头瓜状，前伸过嘴
Melon shaped head extends past mouth

背鳍基宽广，端部圆形，位置靠前
Dorsal fin base broad, rounded tip, located well forward

鞍部位于背鳍后，一般可见
Cape or saddle behind dorsal fin often visible

体黑色
Dark body

口线朝上
Upturned mouth line

鳍状肢稍弯曲，端部尖
Flippers gently curved, pointed tips

最大体长：6米
Maximum length: 6 m

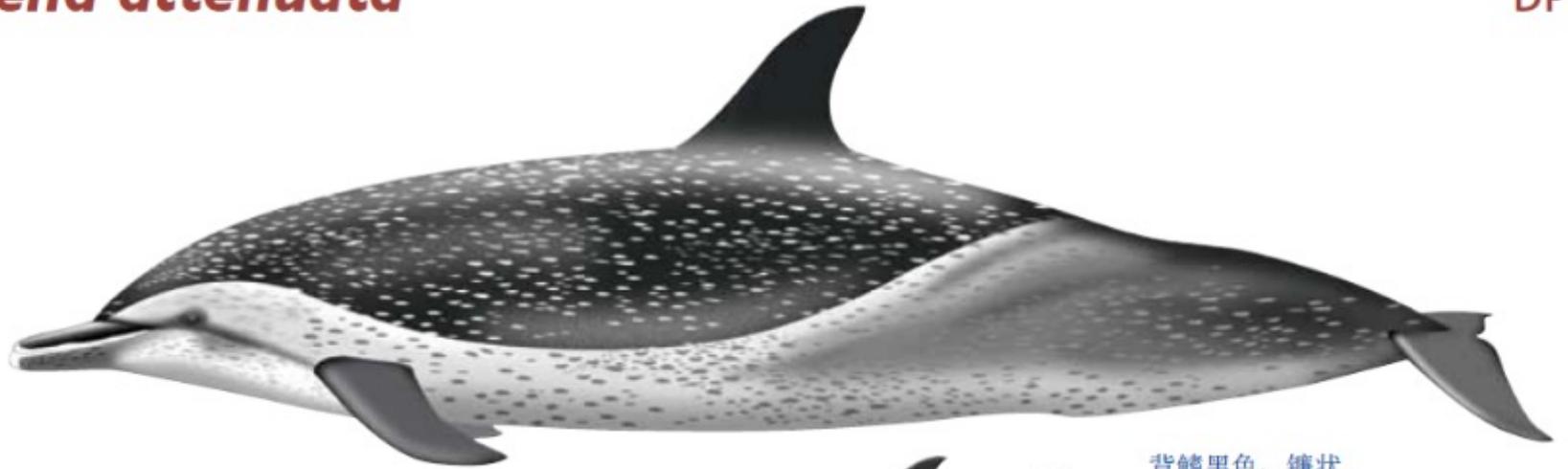
Globicephala macrorhynchus

SHW



Stenella attenuata

DPN



喙长而窄、白色
Long, narrow white tipped beak

背鳍黑色、镰状
Dark falcate dorsal fin

背鳍之前独特的鞍部较宽
Distinct cape dips deeply before dorsal fin



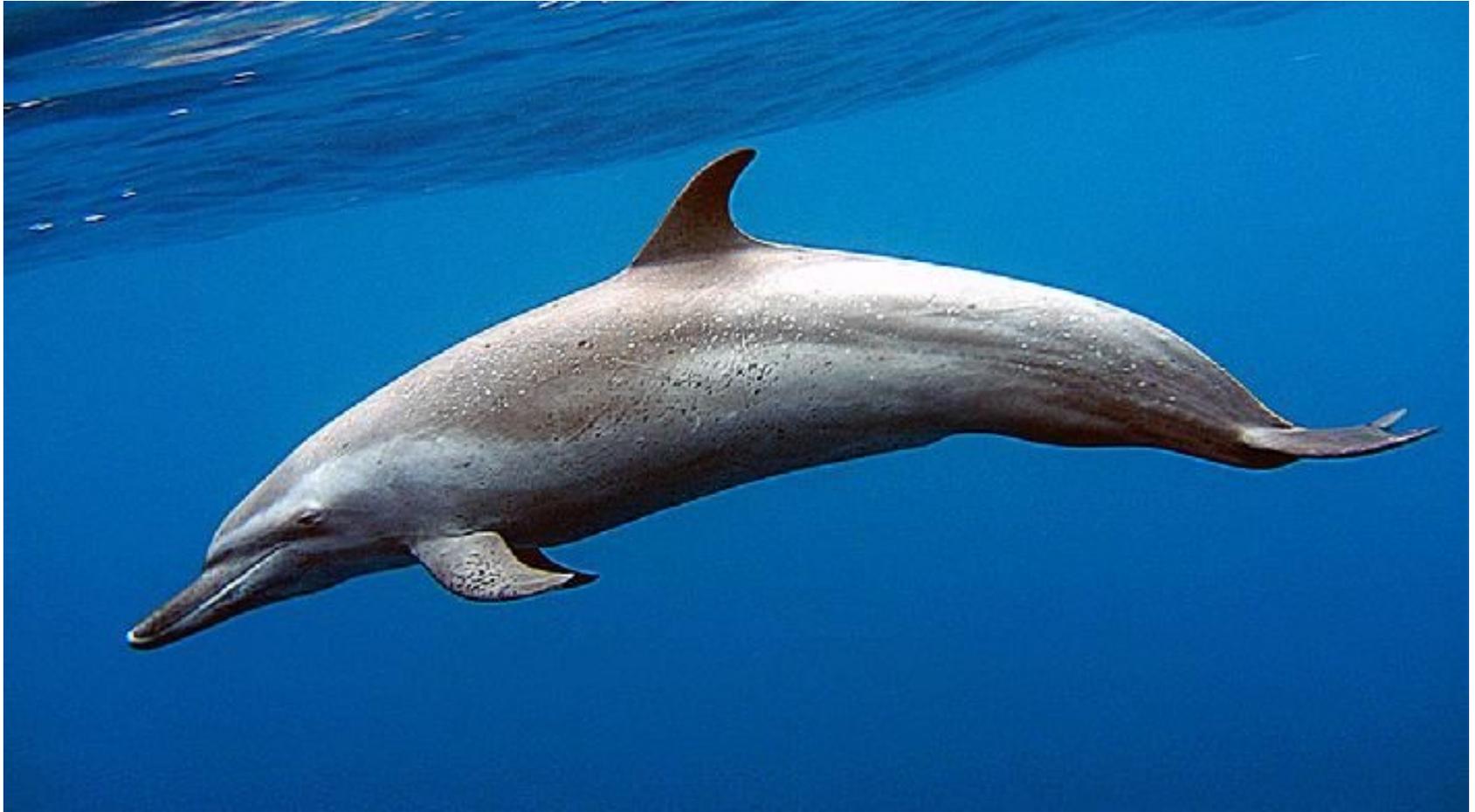
眼睛到鳍状肢的黑带
Dark band from eye to flipper

体表斑点随年龄的增长而变化
Spotted body markings that develop with age

最大体长: 2.6米
Maximum length: 2.6 m

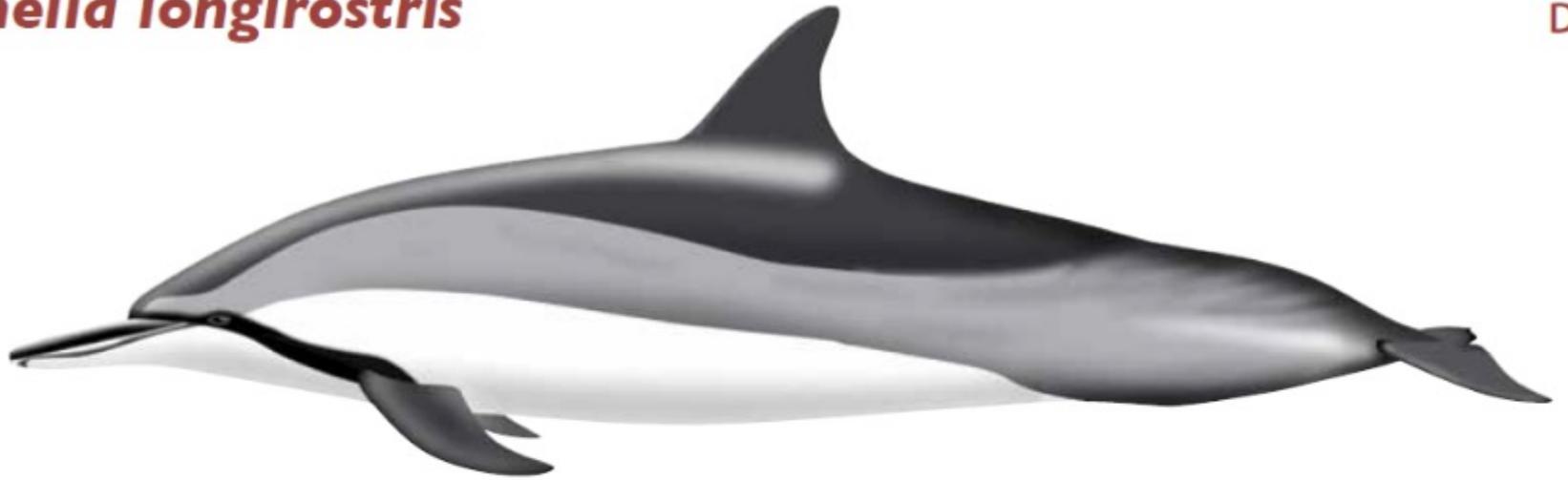
Chinese: 点斑原海豚
English: Pantropical spotted dolphin
French: Dauphin tacheté pantropical
Japanese: Madara-iruka
Local:

Stenella attenuata



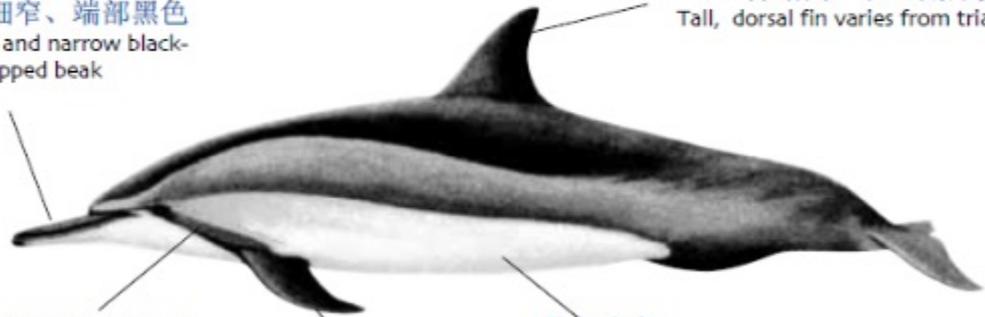
Stenella longirostris

DSI



喙长而细窄、端部黑色
Very long and narrow black-tipped beak

背鳍高，从三角形变到镰状
Tall, dorsal fin varies from triangular to falcate



眼到鳍状肢间具条纹
Stripe from eye to flipper

腹部白色
White belly

鳍状肢长而尖
Long pointed flippers

最大体长：2.1米
Maximum length: 2.1 m

Chinese: 长吻原海豚
English: Spinner dolphin
French: Dauphin longirostre
Japanese: Hashinaga-iruka
Local:

Stenella longirostris





3.5b Mitigation



Marine Mammal Bycatch Mitigation

- Entangled marine mammals can be extremely dangerous because they are powerful and unpredictable. Don't get in the water with a caught whale or dolphin.
- Have disentangling equipment readily available – somewhere on deck where crew can get it quickly when a whale or dolphin is caught.





3.5c Handling & Release

Marine Mammal Bycatch Mitigation

- Write down a description of the animal and its injuries. Take photos if possible. Use your species ID book to try to identify the animal. Record all required information on your logbook form.
- If whales or dolphins are eating your caught fish, or you catch a marine mammal, consider moving 100 nautical miles or more before making your next set.
- Notify other captains in the fleet to prevent the same area to set fishing.
- Do not enter the water to dehook or untangle marine mammals, they are powerful animals and have dehooking and line-cutting equipment ready.

Marine Mammal Bycatch Mitigation

For small whales/dolphins:

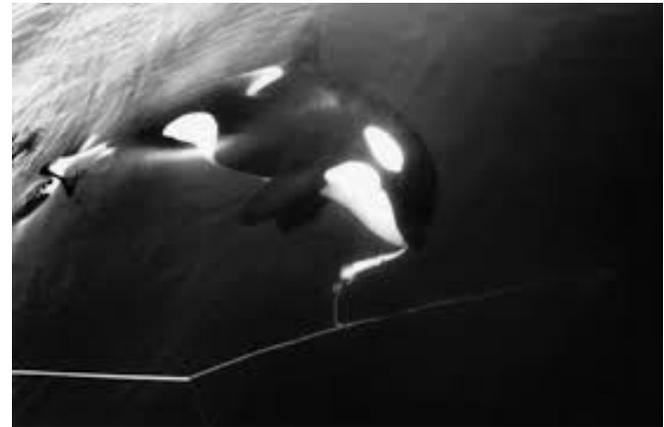
- Avoid sudden actions, do not use gaffs, and facilitate animal reaching the surface to breathe
- If entangled move vessel close to use a long-handle line cutter and cut as much line as possible.
- Wait for the animal to move away before resuming fishing.
- If hooked move close to vessel but without pulling the line to bring the animal onboard. If superficially hooked use the dehooker if close enough. If you can't then cut with the long-handled line cutter as close to the hook as possible.

For large whales:

- If the animal poses a threat to the boat or crew, cut the line away from the vessel.
- If it is considered safe then get the animal as close as possible to the vessel and cut the line with long-handled cutters and wait for the whale to move away.

Tools to Reduce Marine Mammal Bycatch

- Physical depredation mitigation devices (PDMD) (protective sleeves)
- Minimum size monofilament branch line
- Acoustic deterrents and predator sounds
- Reflective buoys
- Reduce unpleasant smell bait



An underwater scene featuring a variety of marine life, including a large shark in the foreground, several smaller fish, and a stingray. The background is a deep blue, slightly hazy underwater environment.

4. Sustainability Commitments



Shark Finning Policy

Shark finning is the practice of retaining shark fins and discarding the remaining carcass while at sea. The practice is against the FAO Code of Conduct for Responsible Fisheries and its International Plan of Action for the Conservation and Management of Sharks, as well as the resolutions of a number of other international marine bodies, all of which call for minimizing waste and discards.

There are major uncertainties about the total quantity and species of sharks caught, and shark finning has added to this problem.

ISSF has called on industry to adopt policies against finning. All tuna fishery operators should prohibit shark finning, and should retain, land, and report all sharks caught, except for species that are prohibited by national law or RFMO regulations, or those individuals that are released alive.



SZLC, CSFC & FZLC

Ban on Targeting Sharks and Marine Mammal & Turtles

关于《禁止捕捞鲨鱼和海洋哺乳动物及海龟》的政策

Updated in 25th November 2018

2018年11月25日更新

Recognizing that longline fisheries targeting relatively fecund tuna and tuna-like species can have large impacts on the viability of populations of incidentally caught species of sharks and Marine Mammal & turtles and their relatives and other relatively low-productivity species, as a precautionary measure and to comply with domestic rules, all captains and crew of SZLC Fishing Venture and subsidiary company & cooperate companies- owned pelagic longline vessels are hereby required to fully comply with the following measures, designed to reduce the fishing mortality of sharks and Marine Mammal & turtles and their relatives:

认识到繁殖力相对强的金枪鱼和类枪鱼为捕获目标的延绳钓渔业会对兼捕的鲨鱼和海洋哺乳动物及海龟及其亲缘种类和其他繁殖力相对较低的海洋生物的生存造成较大影响。故制定如下保护预防措施及遵从当地禁鲨法令，此规定要求联成渔业和所属的远洋船队及合作渔船的所有船长和船员必须严格遵从执行，以减小延绳钓渔业对兼捕的鲨鱼和海洋哺乳动物及海龟及其亲缘物种的死亡率：

- No use of gear designs designed to catch sharks: (i) no attaching branchlines directly to floats; (ii) only monofilament and circle hooks used for leaders (no use of more durable material such as wire or multifilament nylon); (iii) no use of “shark lines” at any time.

不得使用针对捕捞鲨鱼而设计的渔具：1. 严禁在浮子设支线。2. 只允许使用单丝尼龙钓线和圆钩（严禁使用如钢丝及多股尼龙绳等耐用材料）。3. 任何时候不得使用鲨鱼线。

- No retention of any species of sharks or rays (including shark fins or other parts of sharks and rays), including no transshipping, landing or trading any sharks or rays.

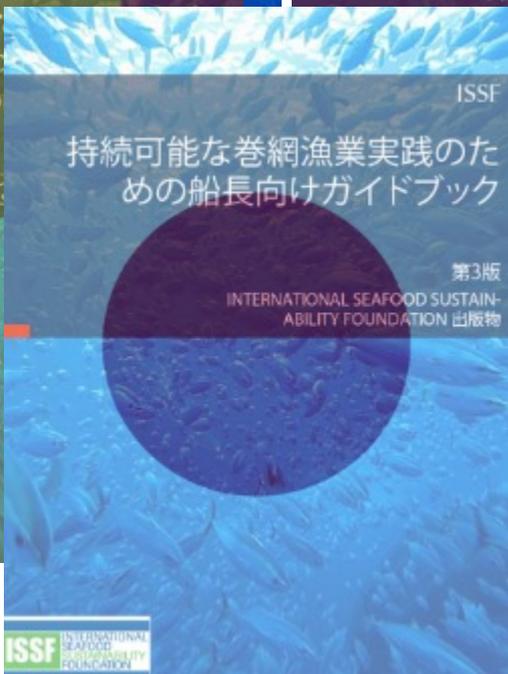
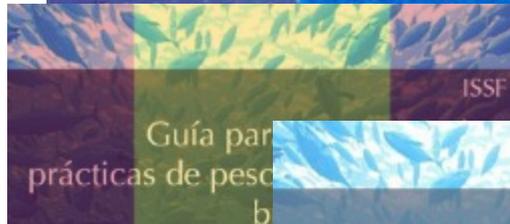
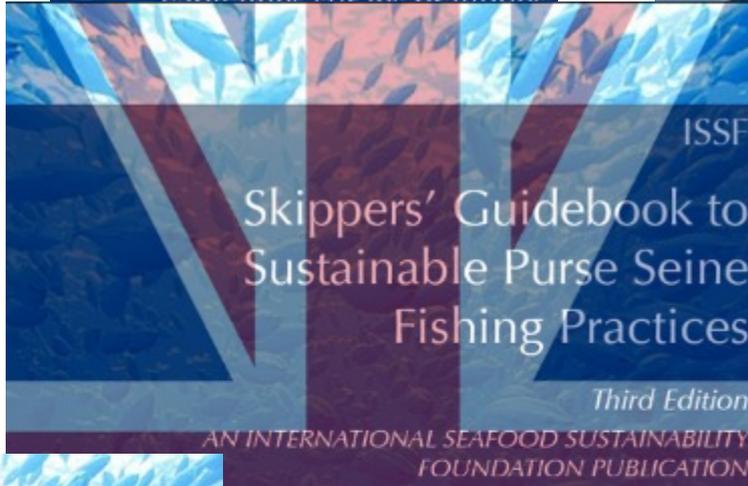
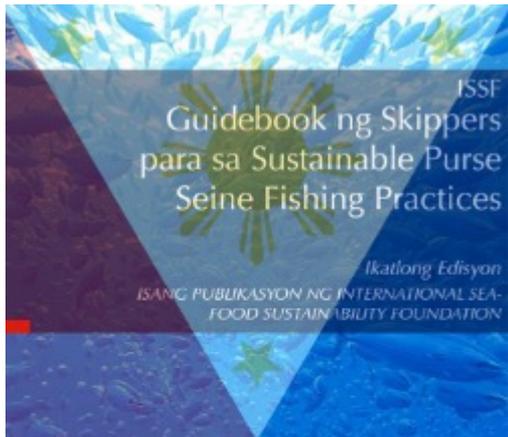
禁止船上保留任何鲨鱼及鲨鱼制品（包括鲨鱼翅或鲨鱼其他部位和鱼翅），包括禁止转运，卸载或私自进行鲨鱼及鱼翅交易。

- Record all required information in logbooks, including the number of each species of sharks and rays caught, and their haul back disposition (alive or dead upon retrieved to the vessel) for each haul, as accurately as possible and safely obtainable.

捕捞日志需记录所要求的信息，包括捕获的各种鲨鱼和鱼翅的数量及对所有捕获鲨鱼和鱼翅（到船时活的或死的）的处理方式，所有在捕捞日志里的信息数据尽可能的准确及完整。

- When notified, participate in periodic training courses in shark and Mammal & turtles species identification to improve logbook records, and training to employ best practice handling and release practices for sharks and turtles to increase the probability of their post-release survival.

自此规定发出日起，公司将定期对船员进行鲨鱼和海洋哺乳动物及海龟等物种鉴定的培训，以更好地在捕捞日志里对各种兼捕的鲨鱼和海洋哺乳动物及海龟进行详细记录。并定期对船员进行适当处理和释放鲨鱼和海洋哺乳动物及海龟的培训，以尽可能的提高鲨鱼和海洋哺乳动物及海龟释放的存活率。





6. Waste Management

Overview

Around 6.4 million tonnes of litter enters the sea each year, the majority of which comprises fishing gear, packaging, raw plastics and convenience items.

Plastic fishing gear can cause marine animals, including whales, dolphins, sea birds, turtles, sharks and seals, to become entangled and die.



An estimated 80% of the garbage comes from land-based sources, and 20% from ships.

Legislation

The management of garbage on boats is regulated by the International Convention for the Prevention of Pollution from Ships and its Protocol, known as MARPOL.

All vessels over 12 metres must have signs on board that explain the garbage laws. Large vessels over 400 gross tonnes are required by law to have a garbage management plan on board and keep a garbage record book.



Waste Management Plan



GARBAGE MANAGEMENT PLAN FOR LONGLINE FISHING VESSELS V2

To prevent Marine environmental pollution by long-line fishing vessels and its related activities, according to MARPOL 73/78 (the Annex V of the 1978 protocol based on the 1973 international convention on prevention of pollution its 2011 amendment requirements), and the actual situation of the fishing vessels, we set out this plan. This plan is applicable to the vessels fishing in the Cook Islands waters and Federated States of Micronesia waters, for all vessels that are owned and managed by our company, including carrier and agent fishing vessels.

1. Definitions of Garbage Categories

Two main categories of trash be generated during the vessels operation process.

1.1. Organic class A: Fish innards, leftovers, bio-degradable packaging paper, etc.

1.2. Inorganic (non-biodegradable) class B: fishing gear, glass bottles, plastic waste, non-biodegradable packaging, waste oil, thin films, woven bags, ropes, clothing, etc.

2. Garbage Discharge Requirements

2.1. Class A–biodegradable, outside of Special Areas: Be directly discharged into the sea when fishing vessels isat least 12 nautical miles away from the nearest coast.

2.2. Class B–non-biodegradable, outside of Special Areas: Discharge into the sea is prohibited.

2.3. Class A and B inside Special Areas: Discharge into the sea is prohibited.

3. Garbage Disposal Measures

3.1. Garbage collection

- 1) Set up one garbage can on the foredeck to gather the used fishing gear, and then switch the waste fishing gears to the woven bag (Write the name of vessel, waste fishing gear on the bag) when the garbage is full, the woven bag can be save in the cabin of foredeck .
- 2) Set up one garbage can on the crew living area to gather the organic waste of the kitchen and the crew, the garbage can be discharged into the sea as 2.1 required.
- 3) Set up one garbage can on the crew living area to gather the Inorganic trash, glass bottles, plastic waste, non-biodegradable packaging, and then packed the garbage with the woven bag (Write the name of vessel, waste glass, plastics on the bag), deposit the bags to areas of the middle afterdeck on the second floor.
- 4) Set up one waste oil barrels in engine room, concentrate the waste oil of fishing vessels to the waste oil barrels (Write the name of vessel, waste oil on the barrel), airtight fixed stored in a safe place.
- 5) Thin films storage area on the afterdeck, bait packaging film, woven bag, rope, old clothes, etc. be concentrated into woven bags (the name of vessel, waste film, etc.), deposit the bags to the areas of starboard afterdeck on the second floor.

3.2. Garbage bulletin board



7. Data Recording

LISTED MARINE AND THREATENED SPECIES FORM

Please use one form per day

Boat Name	Date of interaction	/	/	Log No.
Distinguishing Symbol	Corresponding logsheet no.			
	Observer on board (tick box)	Yes	No	

Great White Shark / Grey Nurse / Whale Shark / Seabird / Seal / Dolphin / Whale / Dugong

Species Name <small>Be specific (refer to list), one line for each individual, except for Syngnathids (Sea Horses)</small>	No. of Sea Horses	Time at which interaction occurred (24hr)	Latitude/Longitude of interaction		Caught During Fishing Operation <small>(tick one box only)</small>			Bend or Tag Number			Life Status <small>(tick one box only)</small>			
			dd mm	ddd mm	Hand	Net	Other				Alive	Dead	Bycatch	

Comments
 Is there anything else that you believe to be important information, for example: Female, male, adult, juvenile?
 Where was the animal tangled (flipper, mouth, wing, etc.)?
 Where in the gear was the animal tangled (codend, wingend, warps, BRDs, etc.)?
 How was the animal released (lowered by hand, lowered with a net into the water, cut out net, etc.)?

I certify the information, which I have provided on this form to be a complete and accurate record.

Concession Holder/Authorised Person **Signature and Date:** _____ / /

Concession Holder/Authorised Person **Printed Name:** _____

WHITE - Original - Send to AFMA Please provide an estimate of the time taken to complete this form min.



Questions?

Any Issues or questions feel free to email:
Kat Collinson at Key Traceability