December 2021

船長訓練
Skipper Training

PACIFIC OCEAN TUNA LONGLINE FIP (FSF)

太平洋鮪延繩釣漁業精進計畫 (綜信水產)

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議程

議題	項目
前言和概述	對此訓練進行介紹及釋義
漁業改進計劃 FIP 的介紹	漁業改進計劃 FIP 是什麼？ 漁業改進計劃的目標釋義
物種識別	提高物種辨識的能力與知識以改進數據的品質
降低非目標魚種的混獲，以及杜絕鯊魚割鰭棄身行為	船長能使用來降低混獲機率 為何鯊魚割鰭棄身行為必須被杜絕
意外混獲後的有效處理及放生	非目標魚種的混獲常會發生，故具備意外混獲後有效處理及放生方式的相關知識是必須的。
廢棄物管理	船上任何廢棄物都必須被有效管理以降低負面影響

2. 漁業精進計畫

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何謂漁業改進計劃 (FIP)？

FIP，漁業精進計畫，是由多個利害關係人組成共同努力以求達到漁業永續發展的計畫。每個不同的FIP有不同的範疇跟特性，但都必須符合相關要求，包括：參與、資金來源、透明化、科學嚴謹。

Photo from MSC

為什麼需要漁業改進計劃

- 漁業改進計劃將匯集來自多方的利益關係人，如漁夫/管理階層/非政府組織等，一同改善漁業的作業及管理方式。
- 漁業改進計劃對於接觸新市場的生意機會非常有幫助，同時對於改進漁業行為對海洋造成的負面影響也是。
- 漁業改進計劃對開發中國家來說相當有價值。因為多數開發中國家對於漁業的治理有限。

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綜信太平洋鮪延繩釣改進計畫目標

健康的生物存量– 確保鮪魚以及主要魚種的漁撈量不超越永續水平

減少對生態影響 – 漁業管理應考慮生態系統的維護

有效的管理 – 加強區域管理組織以及船籍國對於該漁業的管理措施

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漁業改進計劃目標

透過提升資訊系統以及訓練，確保提供正確的資料，包括：捕撈、存放、混獲...等，也確保目標魚種達到永續水平。

與國家的其他組織針對鮪魚漁業合作，以增加例如捕獲管制規定等管理。

增加人為或電子觀察員覆蓋率

倡議以生態環境為主並且保守的管理辦法鼓勵區域管理組織採用可降低漁撈所造成的死亡率

漁業改進計劃目標

- 加強瀕危、受威脅、受保護物種的管理策略，並減少混獲
- 加強管理與決策程序
- 目標於2025年取得MSC認證

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3. 物種辨識與最佳措施

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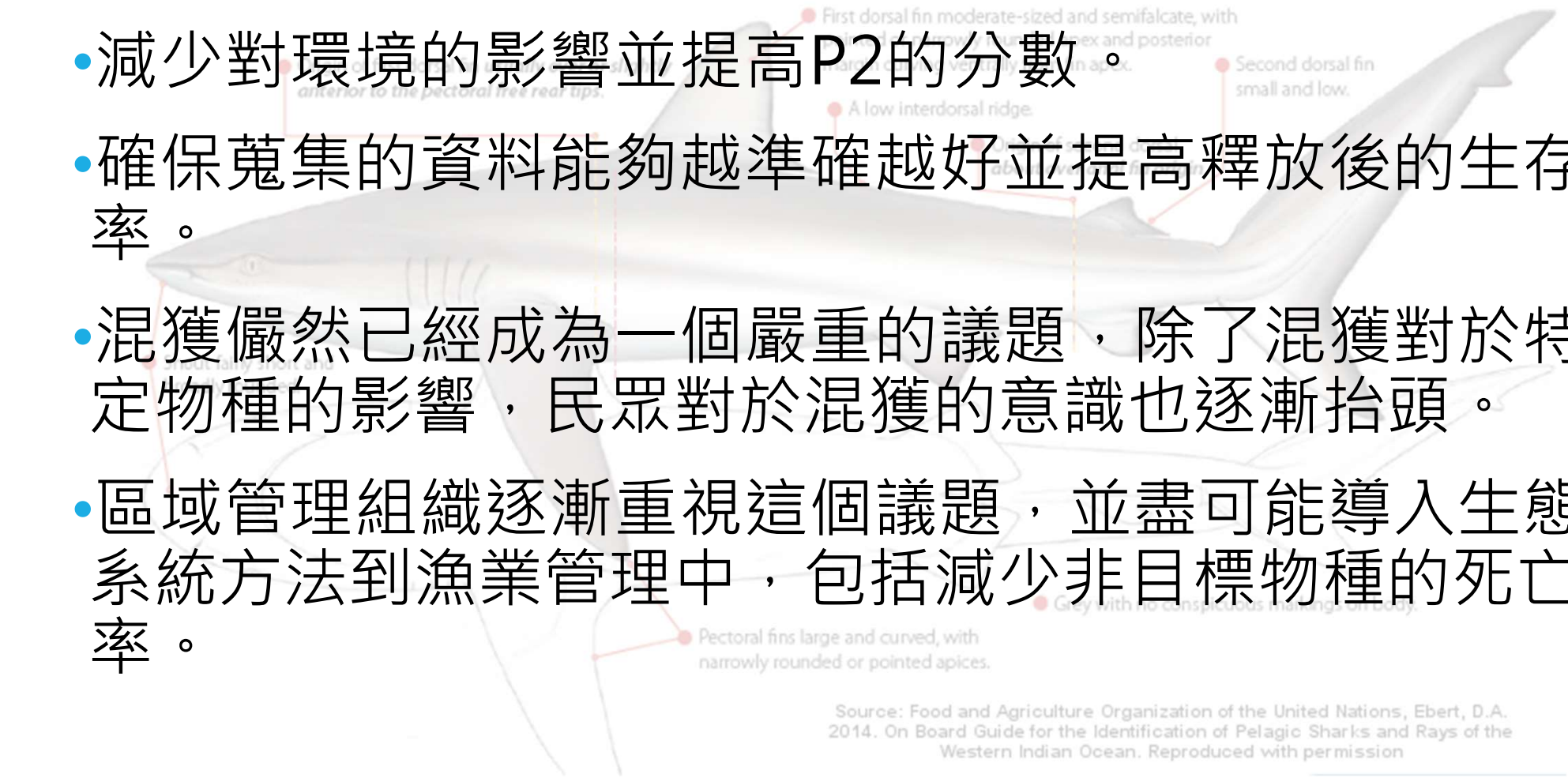
為什麼需要物種辨識與最佳措施？

- 減少對環境的影響並提高P2的分數。
- 確保蒐集的資料能夠越準確越好並提高釋放後的生存率。
- 混獲儼然已經成為一個嚴重的議題，除了混獲對於特定物種的影響，民眾對於混獲的意識也逐漸抬頭。
- 區域管理組織逐漸重視這個議題，並盡可能導入生態系統方法到漁業管理中，包括減少非目標物種的死亡率。



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

3.0. 鮪魚種類

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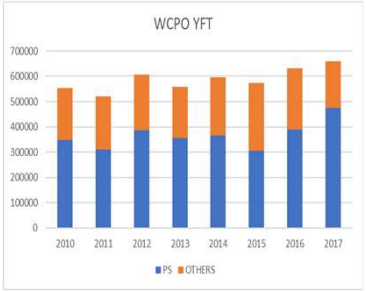
鮪魚捕撈 (以區域及漁法進行統計)

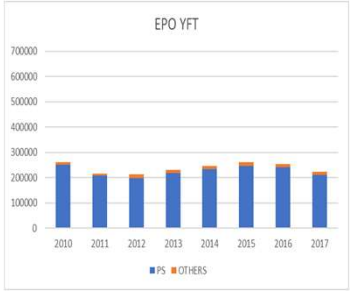
YFT

WCPO/西太平洋



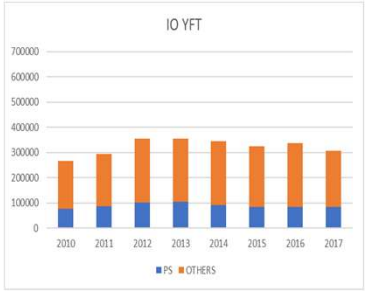
PS 62%, LL 38%

EPO東太平洋



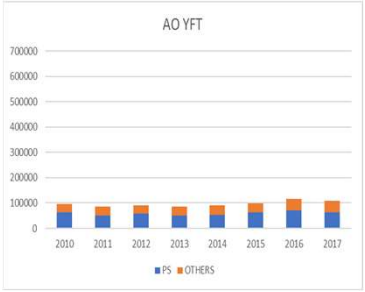
PS 95%, LL 5%

IO印度洋



PS 28%, LL+OTHERS 72%

AO大西洋



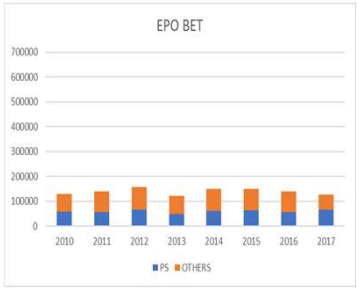
PS 61%, LL+OTHERS 39%

BET

WCPO/西太平洋

PS 44%, LL 56%

EPO東太平洋

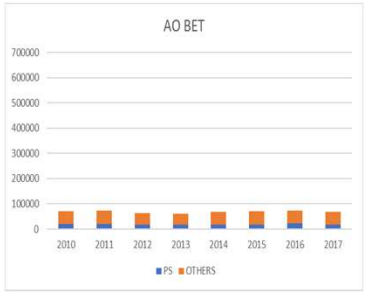


PS 69%, LL 31%

IO印度洋

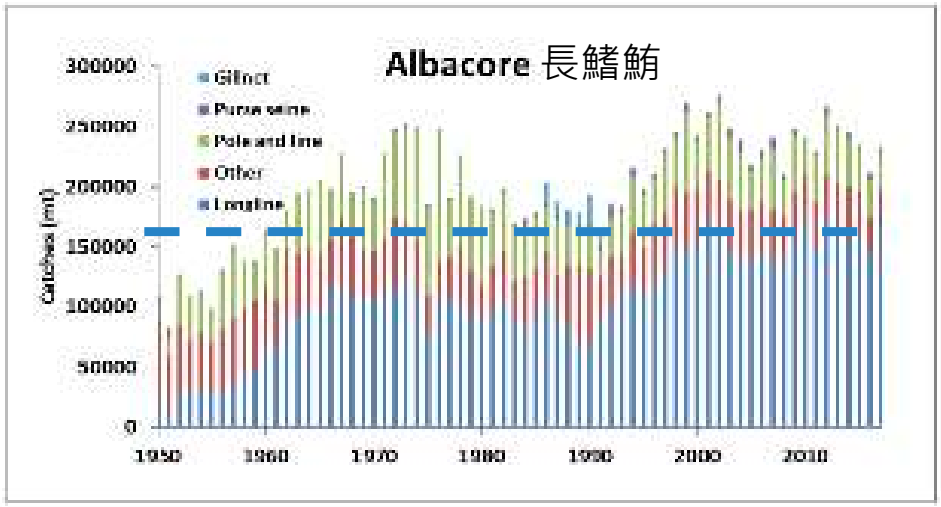
PS 19%, LL+OTHERS 81%

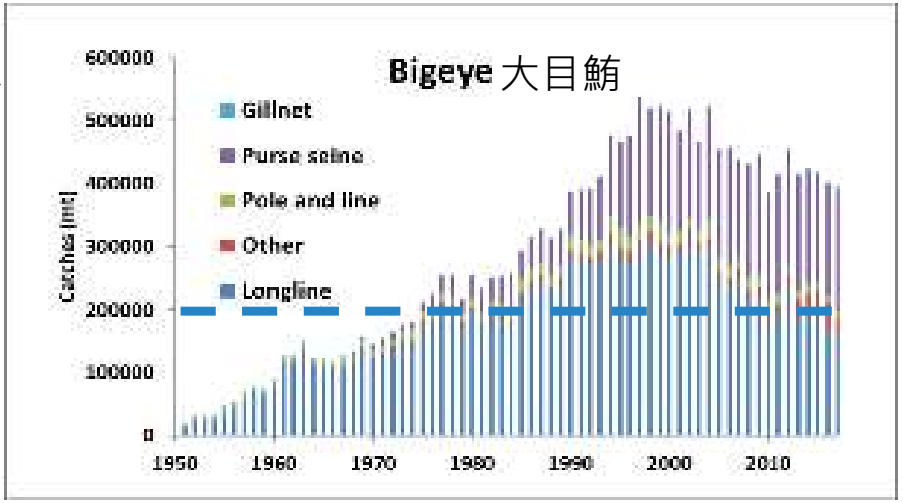
AO大西洋

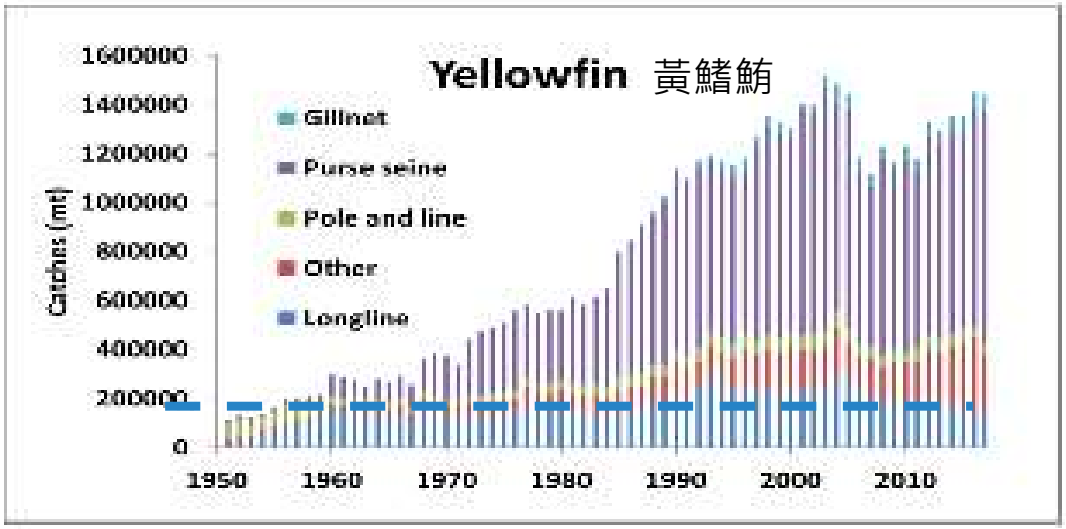


PS 28%, LL+OTHERS 72%

鮪魚捕撈 (以區域及漁法進行統計)







Bigeye 大目

Yellowfin 黃鰭

Yellowfin 黃鰭

Bigeye 大目

3.1.鯊與魟

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3.1a 物種辨識

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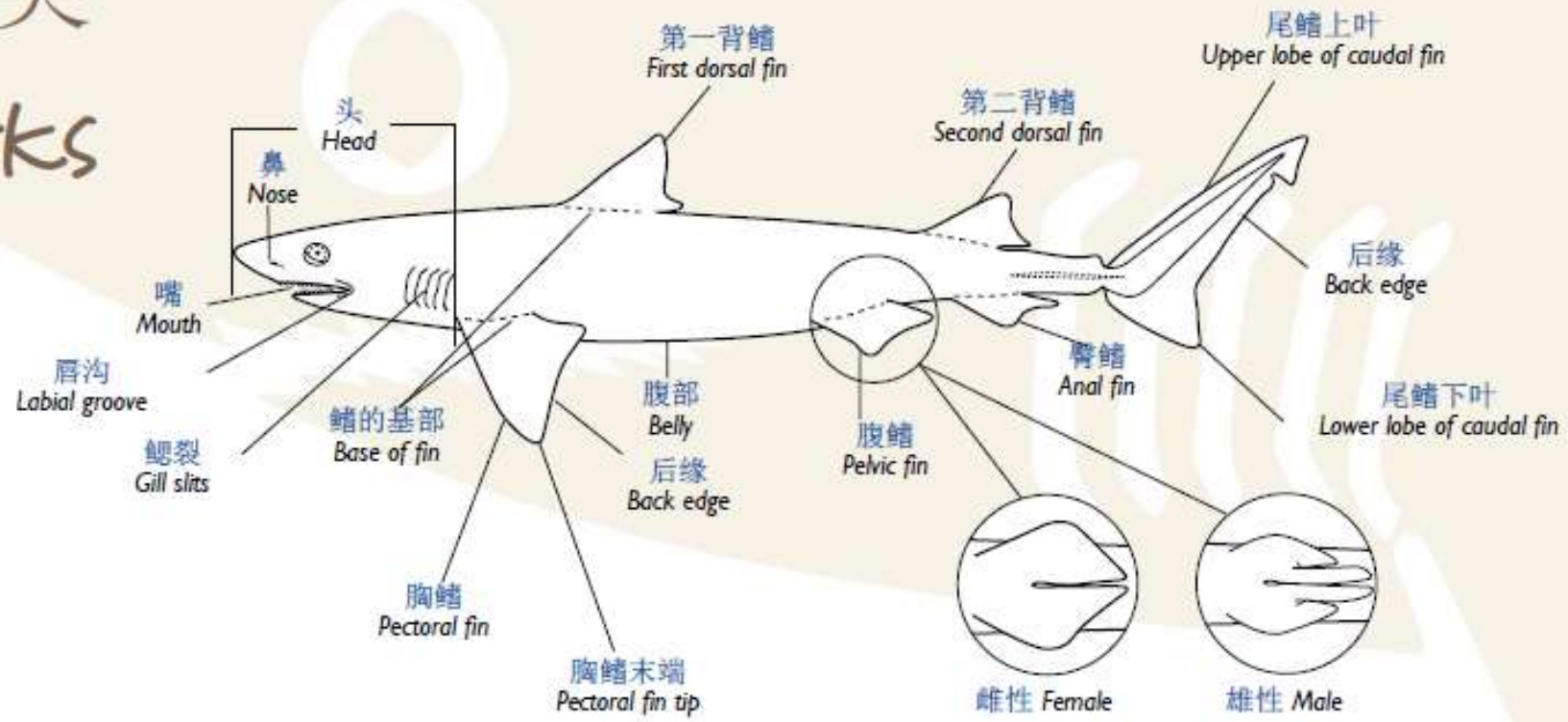
	WCPFC	IOTC	IATTC
Sharks	Prohibition on finning (5% ratio) **Oceanic White-tip (OWT):** Prohibition on retaining, transshipping, storing on a fishing vessel, or landing any oceanic whitetip shark, in whole or in part; prompt and live release; data collection; sampling (CMM 2011-04; in force 1 Jan 2013). **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) **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-	Prohibition on finning (5% ratio). Res. 17/05 requires sharks landed fresh have fins-naturally attached until the first point of landing. **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) **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;	Prohibition on finning (5% ratio). **Sharks general** (C-16-05; in force 1 Jan 2018): • Stock assessment work plan • Data collection **For LL:** Prohibits shark lines **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) **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)
	WCPFC	**IOTC**	**IATTC**
	hookers, release when in water preferably, etc). (Adopted Dec 2018)	data collection; sampling (Resolution 12/09). **Blue sharks**: Catch and effort recording, data collection, catch monitoring, & scientific research (Res 18/02)	
SUMMARY	✓ Finning prohibition ✓ Retention prohibition of specific species ✓ Best practice release and handling procedures	✓ Finning prohibition ✓ Fins-attached for fresh sharks ✓ Retention prohibitions ✓ Catch and effort reporting	✓ Finning prohibition ✓ Retention prohibition of specific species ✓ Catch and bycatch limits ✓ Restriction on steel leaders

	WCPFC	IOTC	IATTC
Sharks	禁止割鰭棄鯊 取消5%魚鰭魚身比例寬限 黑鯊、遠洋白鰭鯊(花鯊) 禁止保留、轉載、儲存於漁船或卸載任何部分或花鯊、黑鯊全身；盡可能活體釋放；妥善記錄。 (CMM 2011-04)、 (CMM 2013-08) 採取最佳措施進行鯊魚釋放： 導入合適的程序、盡量以魚鉤及線捕魚、善用漁獲網、滑板(浪板)或SLING袋來釋放鯊魚。不使用拖魚鉤、不用鯊魚夾、使用脫鉤器、盡可能在水中釋放。	禁止割鰭棄鯊 管理辦法17/05要求鯊魚鰭與身需自然黏著直到卸獲。 遠洋白鰭鯊(花鯊)、長尾鯊 禁止保留、轉載、儲存於漁船或卸載任何部分或花鯊、長尾鯊全身；盡可能活體釋放；妥善記錄、禁止販售(長尾鯊) 。 (Resolution 13/06)、(Resolution 12/09) 水鯊 捕獲紀錄、資料蒐集、捕獲監控、科學調查	禁止割鰭棄鯊 管理辦法C-16-05對於一班鯊魚的管理： • 魚群評估工作計畫 • 資料蒐集 嚴禁延繩釣使用鯊魚線 遠洋白鰭鯊(花鯊) 禁止保留、轉載、儲存於漁船或卸載任何部分或花鯊；盡可能活體釋放；妥善記錄、禁止販售 。 (C-16-05) 黑鯊 (延繩釣) 捕獲或混獲數量管制 (根據執照)、每年禁用鋼絲線3個月 (C-19-05)
總結	禁制割鰭棄鯊 特定鯊魚種禁止捕撈 善用最佳措施處理釋放過程	禁制割鰭棄鯊 鰭鯊不分離 特定鯊魚種禁止捕撈 回報漁獲努力量	禁制割鰭棄鯊 鰭鯊不分離 特定鯊魚種禁止捕撈 禁用鋼絲線

	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

	WCPFC	IOTC	IATTC
魟	蝠魟與鬼蝠魟最佳處理措施 善用漁獲網、滑板(浪板)或SLING袋來釋放魟魚。不使用拖魚鉤、不穿洞、不拖拉魟魚頭鰭、不將魚鉤或手伸入鰓線中，使用脫鉤器、盡可能在水中釋放。	蝠魟 禁止針對蝠魟捕撈；妥善施放、最佳處理措施、資料蒐集與研究	蝠魟 禁止在漁船上保留、轉載、儲存蝠魟，也禁止銷售部分或蝠魟全身；妥善施放、最佳處理措施、資料蒐集與研究
總結	最佳措施釋放與處理程序	禁止針對蝠魟捕撈 最佳措施釋放與處理程序	禁止保留與銷售 最佳措施釋放與處理程序
鯨鯊	NA	需記錄互動	NA
海洋哺乳動物	NA	紀錄互動	NA
總結	NA	紀錄互動	NA

鲨鱼类
Sharks

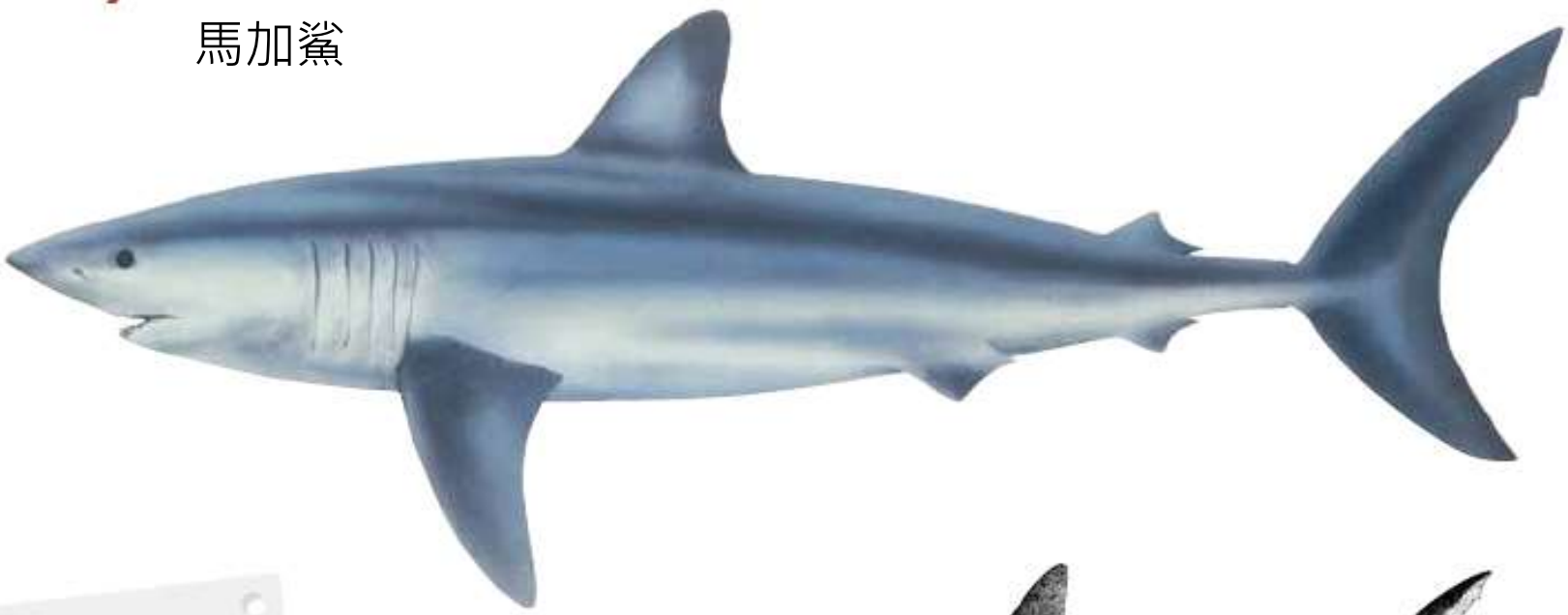


Scientific	Chinese	English	FAO code	Page
Alopias pelagicus	浅海长尾鲨	Pelagic thresher	PTH	37
Alopias superciliosus	大眼长尾鲨	Bigeye thresher	BTH	39
Alopias vulpinus	狐型长尾鲨	Common thresher, Thintail thresher	ALV	38
Carcharhinus albimarginatus	白边真鲨	Silvertip shark	ALS	35

Isurus oxyrinchus

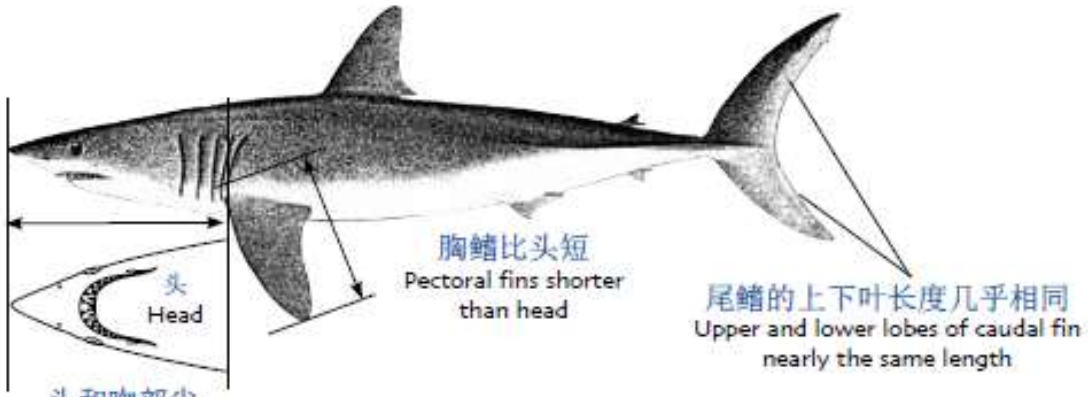
馬加鯊

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

尖吻鲭鲨

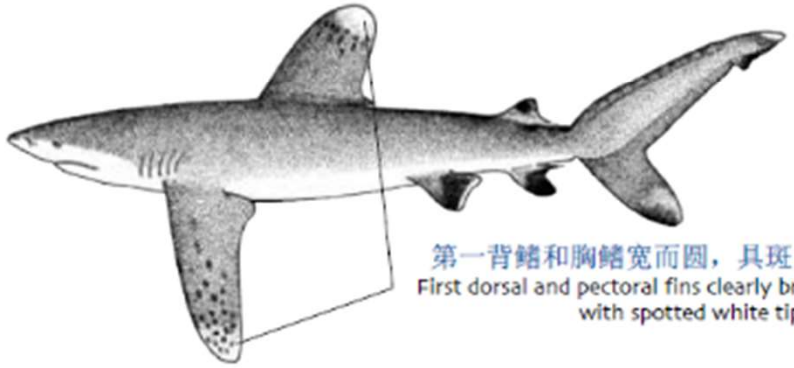
Photo: Andy Murch

Carcharhinus longimanus

OCS

花鯊

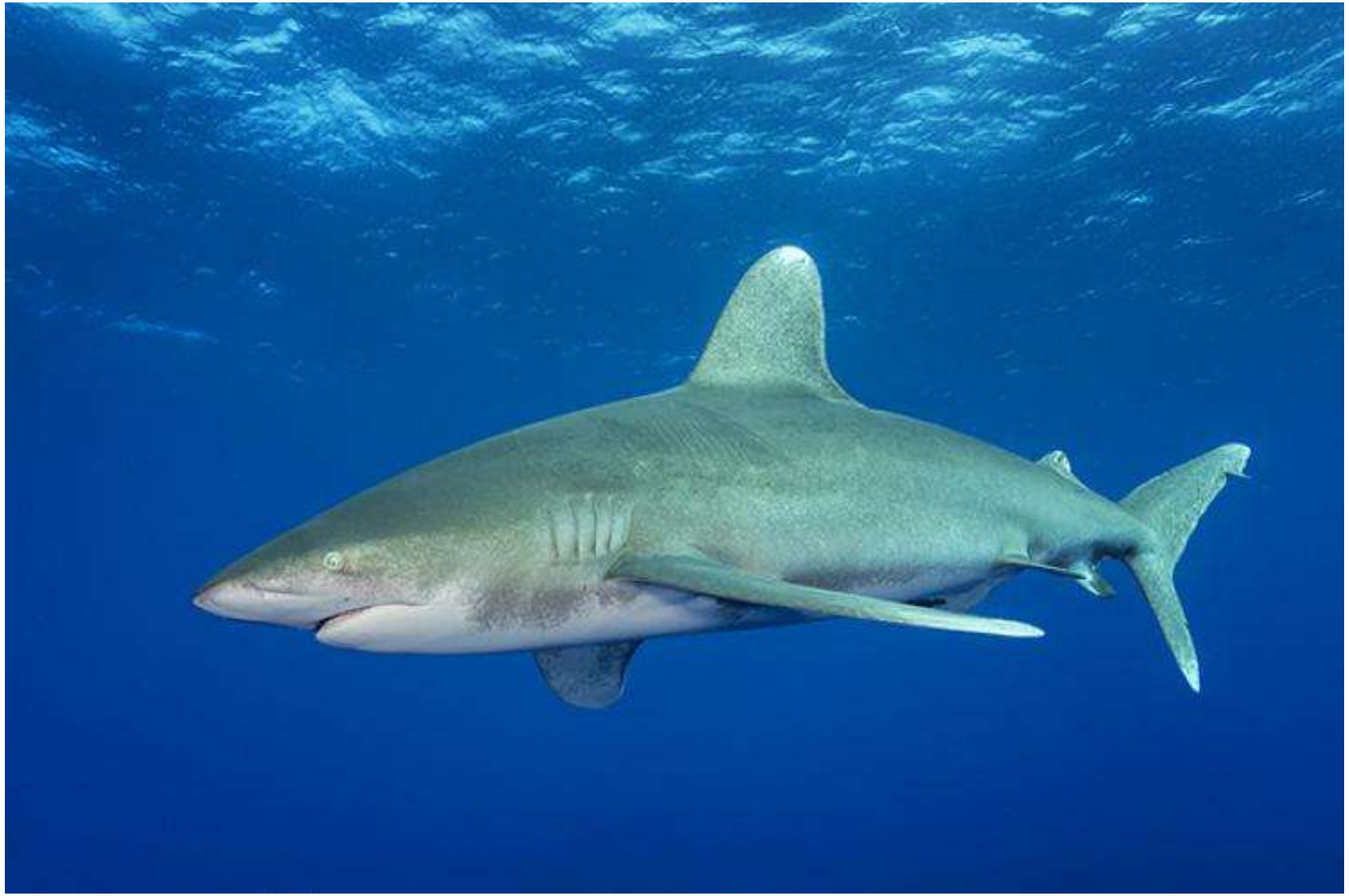
Chinese:	长鳍真鲨
English:	Oceanic whitetip shark
French:	Requin océanique
Japanese:	Yogore
Hawaiian:	Mano nigano
Local:	



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 遠洋白鰭鯊

OCS



Carcharhinus falciformis

FAL

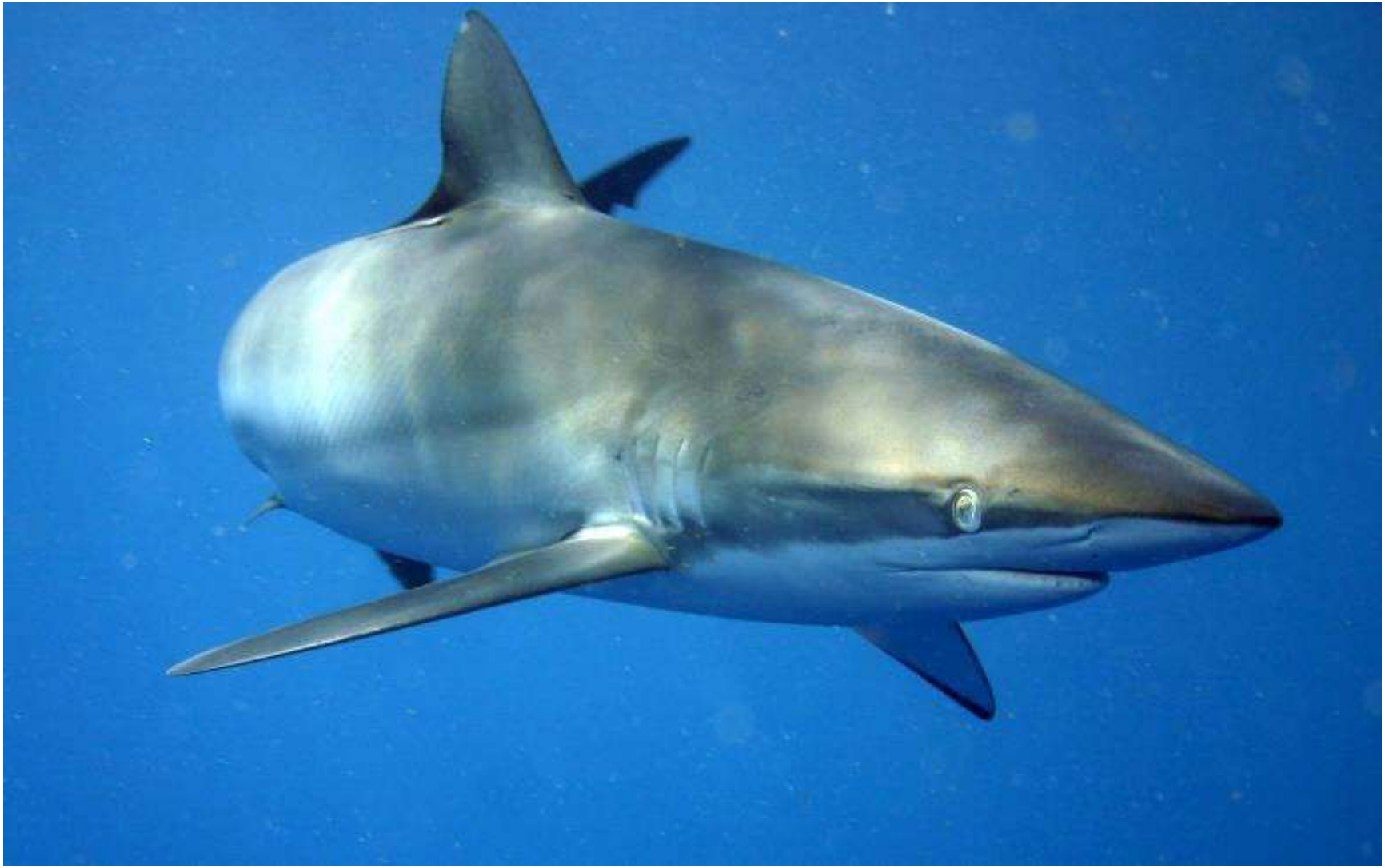
花鯊

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

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

上齿形状
Shape of upper teeth

Carcharhinus falciformis 絲鯊



Sphyrna lewini

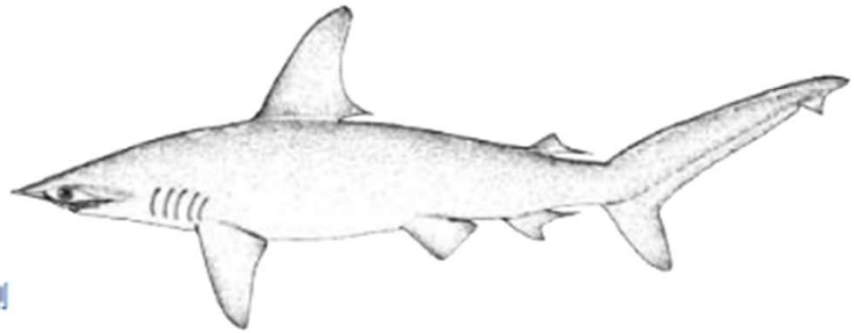
SPL

槌頭鯊

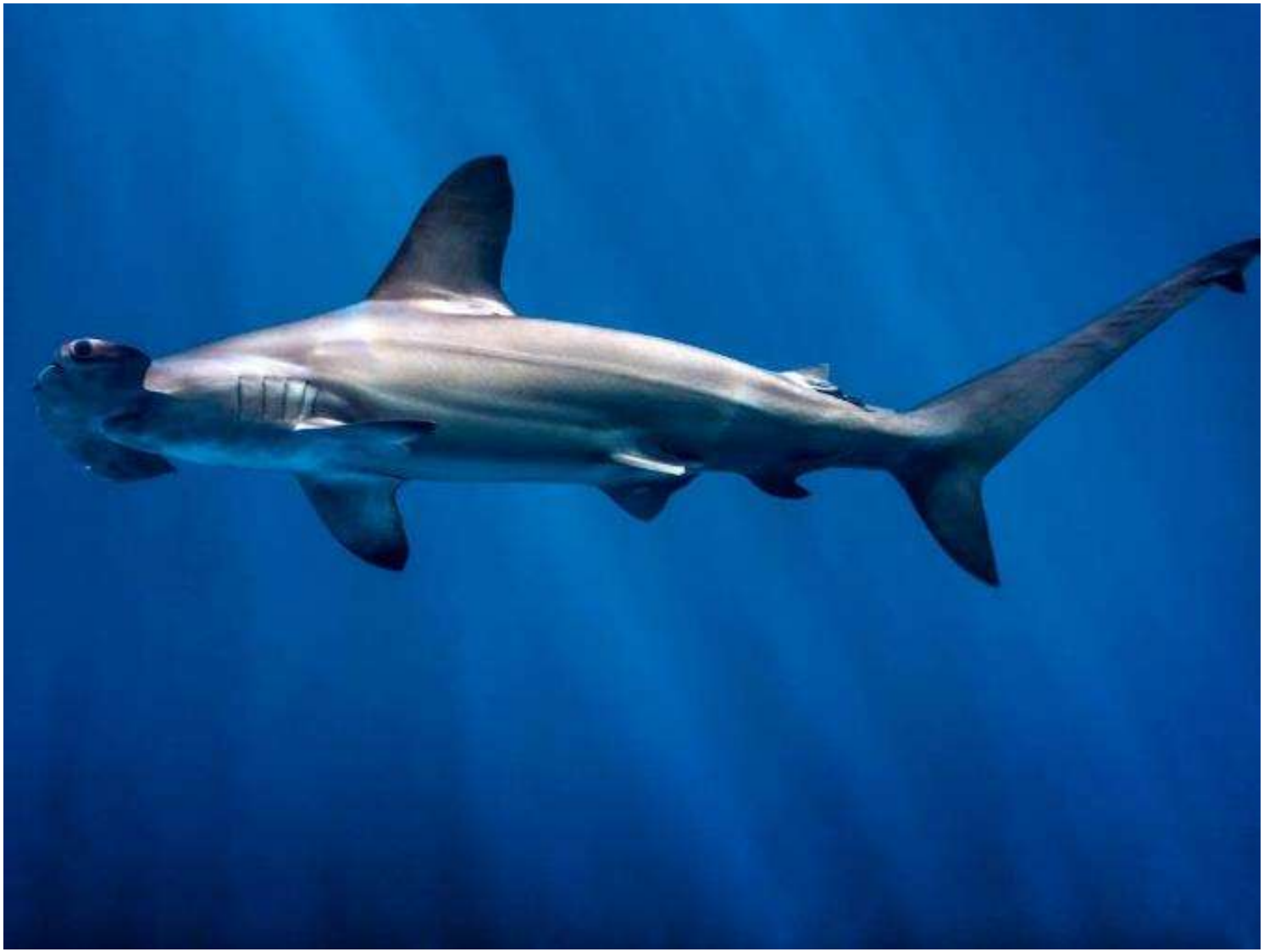
Chinese:	路氏双髻鲨
English:	Scalloped hammerhead
French:	Requin marteau halicorne
Japanese:	Akashumokuzame
Hawaiian:	Mano kihikihi
Local:	

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 槌頭鯊



3.1b 減少混獲

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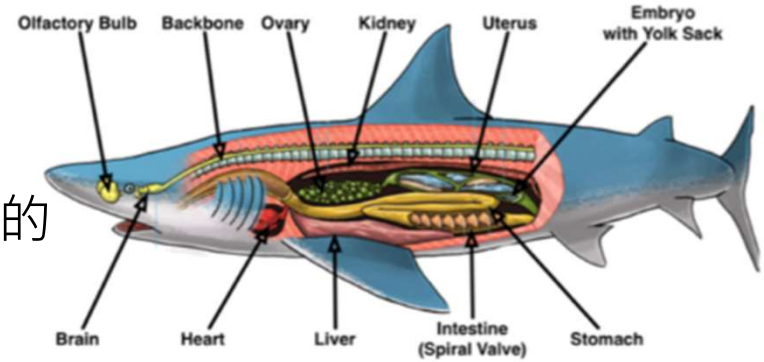
減少鯊類混獲

- **C型鉤的使用：** 使用C型鉤以避免鯊魚深吞並增加存活率。
- **魚餌的使用：** 使用例如鯖魚、四破等小型魚類作餌、避免使用魷魚以減少鯊魚捕撈(尤其是水鯊)
- **深度設定：** 延繩釣漁法在下鉤比較深的時候(深於100米)可避免鯊魚混獲率。
- **尼龍線的使用：** 許多國家禁用鋼絲線並使用尼龍線來避免混獲，而使用尼龍線也較能捕捉到大目鮪。

放生處理時需考量事項



- 鯊魚必須透過在水中不斷游動鰓線將水推進鰓線裡。當鯊魚離開水面太久將會使牠們衰弱也會減緩牠們復原的能力。

- 鯊魚天生在構造上體內器官並沒有穩定地固定，如果從頭部或尾部將鯊魚吊著會造成牠門極大的傷害。 *Poisson 2012*

- 鯊魚頭部具有許多感官構造用來感測獵物，處理混獲的鯊魚時很容易會毀損這些器官。

最重要的是！ 應設法盡速施放鯊魚以增加存活率

3.1c 混獲處理及施放

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混獲鯊類處置

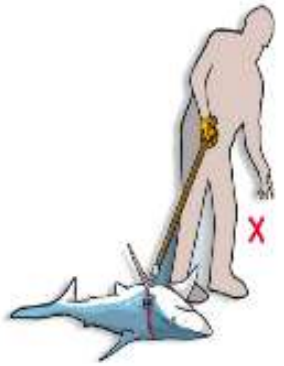
- 當施放鯊魚或魟魚，應按程序減少壓力、受傷以及減少其他安全上的風險。過去，鯊魚與魟魚類物種相當豐富，但現在在急速下降中，無法有效的施放也是其中一個原因。
- 盡量減少處理與施放鯊魚與魟魚的時間。某些特定鯊魚或魟魚在經歷緊張後特別容易死亡。船上應配有抬升工具、除勾器、斷線鉗以利船員有效處理。

小型鯊魚處置方式

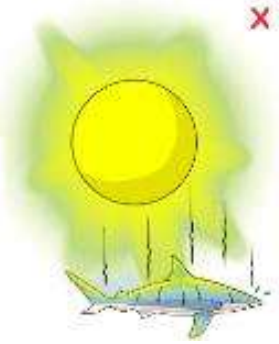
YES

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

NO



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



大型鯊魚處置方式

針對被勾住或是纏繞的大型鯊魚，可透過使用長柄的剪線器或是除勾器處理在海中的鯊魚。

如果小鯊魚可以安全地抬到甲板請小心翼翼的處理。如遇海龜或海鳥可以使用剪線器來移除勾子。如果魚勾卡太深，可直接剪掉線

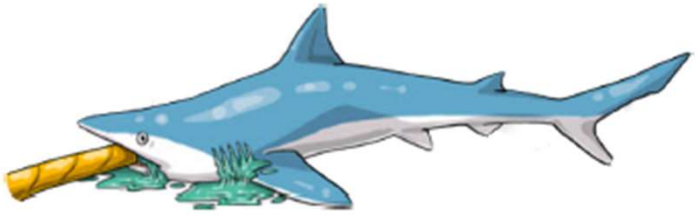
Poisson et al. 2015 ©

Poisson et al. 2015 ©

混獲鯊類處置方式 – 該做與不該做

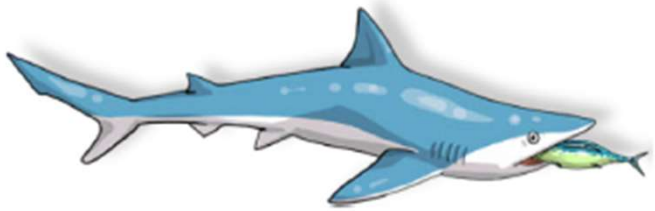
濕冷衣物或布料將鯊魚頭部包圍能使其較為冷靜

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



如無法盡速放生鯊魚，將一根可以導海水的軟管置於其口中將有助於提高存活率

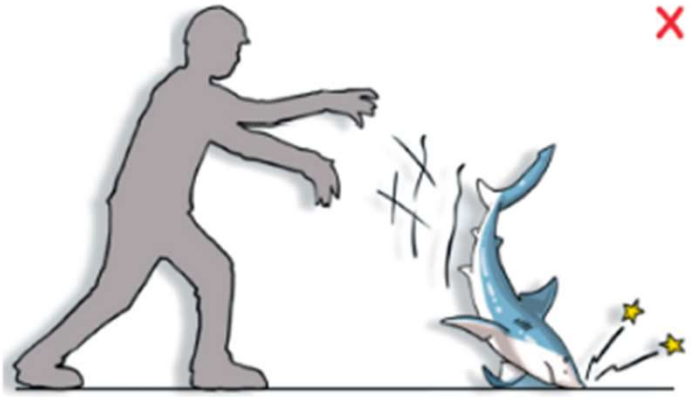
Inserting a seawater hose in its mouth might improve an animal's chance of survival if, for an unavoidable reason, the shark cannot be released right way. (Poisson et al, 2012)



為避免船員被鯊魚咬傷，有些人建議能將一條魚塞入其口中。無論鯊魚是生是死，都要非常小心處理以避免被咬傷

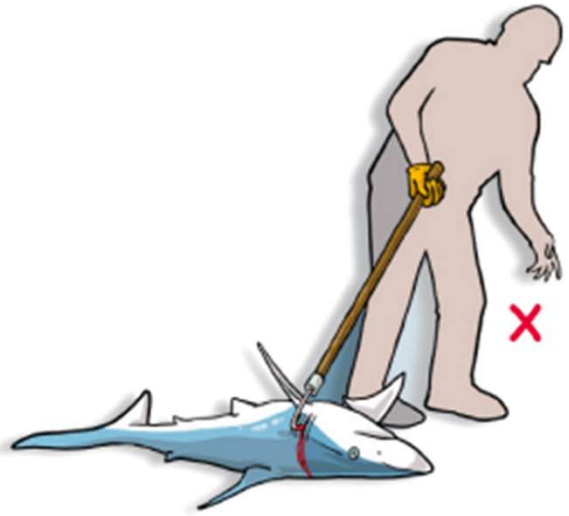
For crew safety, avoid the animal's jaws (some suggest placing a fish in its mouth to prevent bites), and regardless of the animal's state (live or moribund) be cautious at all times. (Poisson et al, 2012)

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

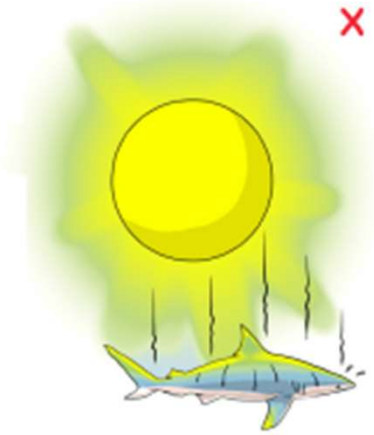


DO NOT throw, hit, or squeeze the animal. Prevent the animal from battering itself against the deck or other hard objects. (Poisson et al, 2012)

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

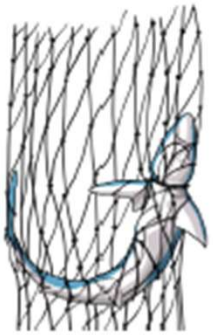


DO NOT insert a gaff, hook, or other pointed object to drag or lift the animal. (Poisson et al, 2012)



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

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

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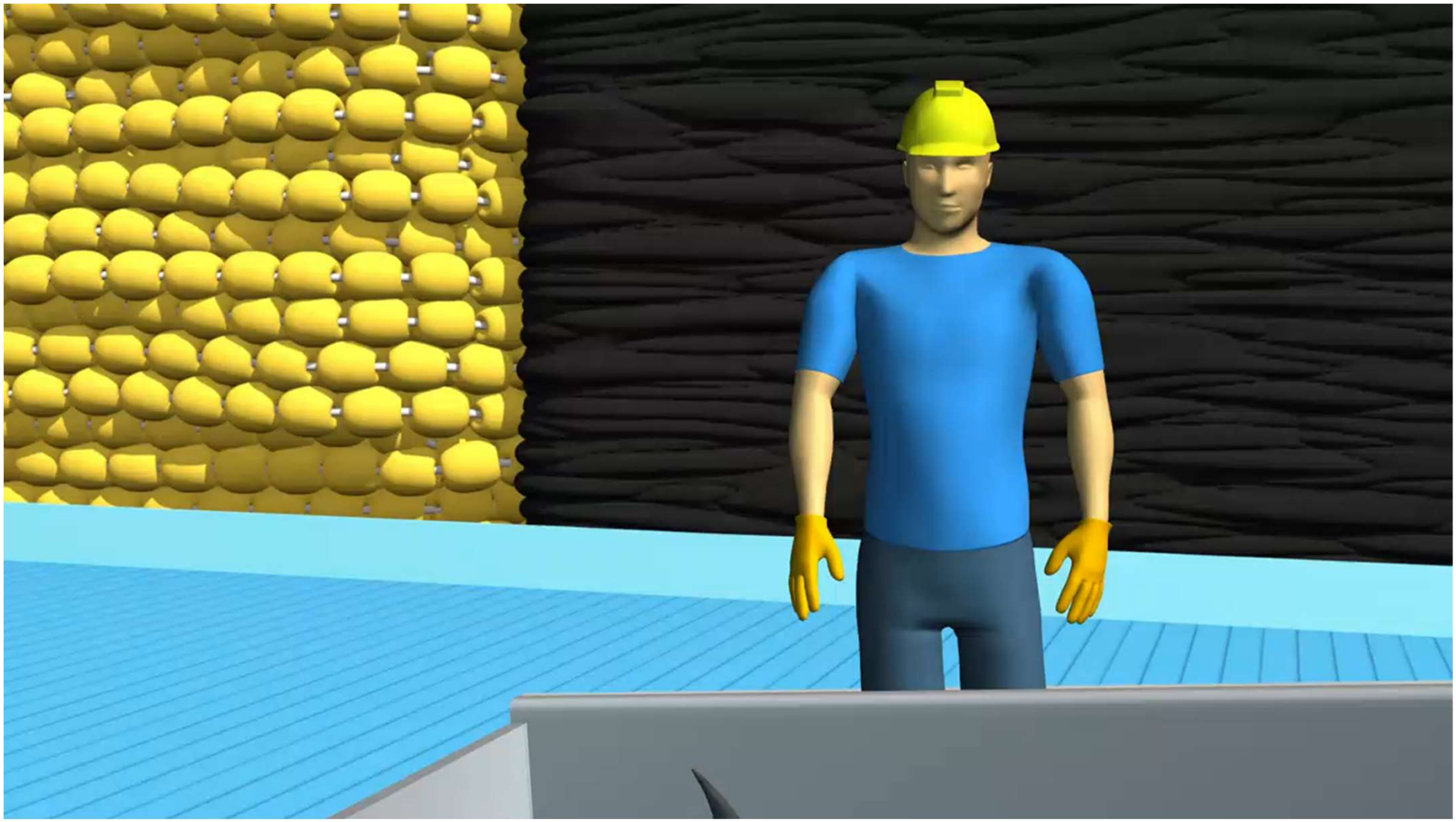

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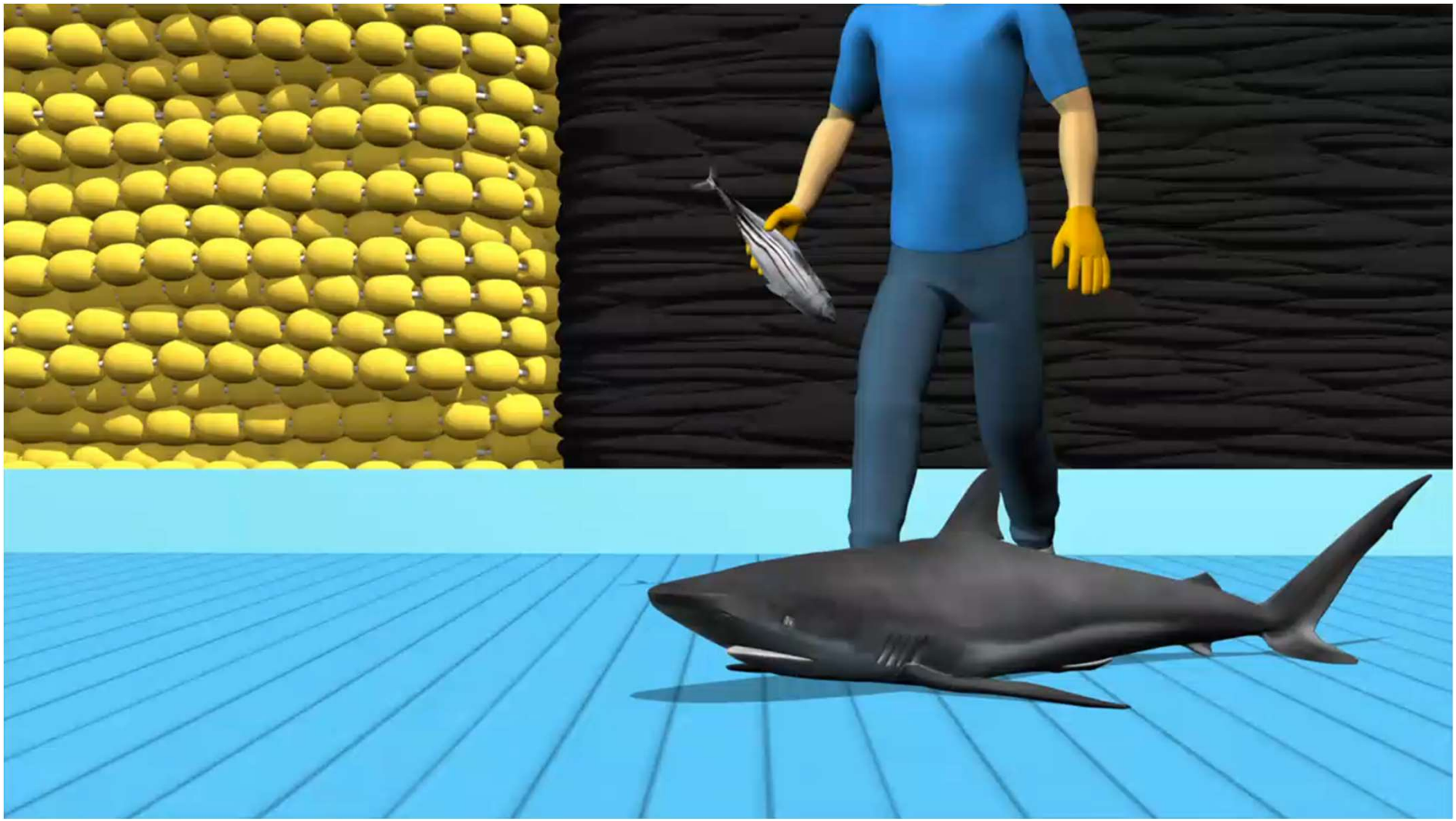

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3.2 海龜類

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	WCPFC	IOTC	IATTC
Sea turtles	✓ Implement FAO Guidelines ✓ Reporting requirements ✓ ROP collected data to Commission **All LL**: Carry and use line cutters, de-hookers and dip nets; prompt release/safe handling (CMM 2018-04; in effect 1 Jan 2020).). **Shallow set[1] 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).).	✓ Implement FAO Guidelines ✓ Reporting requirements **All LL**: Carry and use line cutters, de-hookers; prompt release/safe handling guidelines; encourage use of whole finfish bait (Resolution 12/04I)	• 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) **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). **Shallow set LL[2]**: 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).
SUMMARY	✓ De-hookers, line cutters etc. ✓ Safe handling ✓ Circle hooks or whole finfish bait	✓ De-hookers, line cutters etc. ✓ Safe handling ✓ Encourages whole finfish bait	✓ De-hookers, line cutters etc. ✓ Best practices for handling ✓ Circle hooks or finfish bait ✓ Prohibits disposal of salt bags or plastic trash

	WCPFC	IOTC	IATTC
海龜	導入FAO Guidelines (指導手冊) 回報要求 蒐集資料後交回Commission 所有延繩釣必須： 攜帶並使用剪線器，除勾器以及網子來妥善施放海龜 (CMM 2018-04) 在淺水域下勾的延繩釣： 施行以下三種方法的其中一種，包括使用大的C型勾、使用全魚為餌料、並用任何其他Commission認同之減少混獲的方法 (CMM2018-04)	導入FAO Guidelines (指導手冊) 回報要求 所有延繩釣必須： 攜帶並使用剪線器，除勾器以及網子按指導手冊來妥善施放海龜；鼓勵以全魚作為餌料 (Resolution 12/04I)	導入FAO Guidelines (指導手冊) 回報要求 導入新的觀察員計畫 在甲板上復甦後施放 禁止丟棄鹽袋、塑膠垃圾到海洋中 安全處理教育訓練與指導 所有延繩釣必須： 攜帶並使用剪線器，除勾器以及網子按指導手冊來妥善施放海龜；鼓勵以全魚作為餌料 、使用C型鉤 、深度下鉤、調整捕魚設備，用最佳措施安全處理教育訓練與施放 (C-19-04) 在淺水域下勾的延繩釣： 施行以下三種方法的其中一種，包括使用大的C型勾、使用全魚為餌料、並用任何其他Commission認同之減少混獲的方法 (C-19-04)
總結	除勾器、剪線器 安全處理 圓形鉤、全魚餌料	除勾器、剪線器 安全處理 圓形鉤、全魚餌料	除勾器、剪線器 使用最佳措施處理 圓形鉤、全魚餌料 禁倒鹽袋及塑膠垃圾倒海洋中

3.2a 物種辨識

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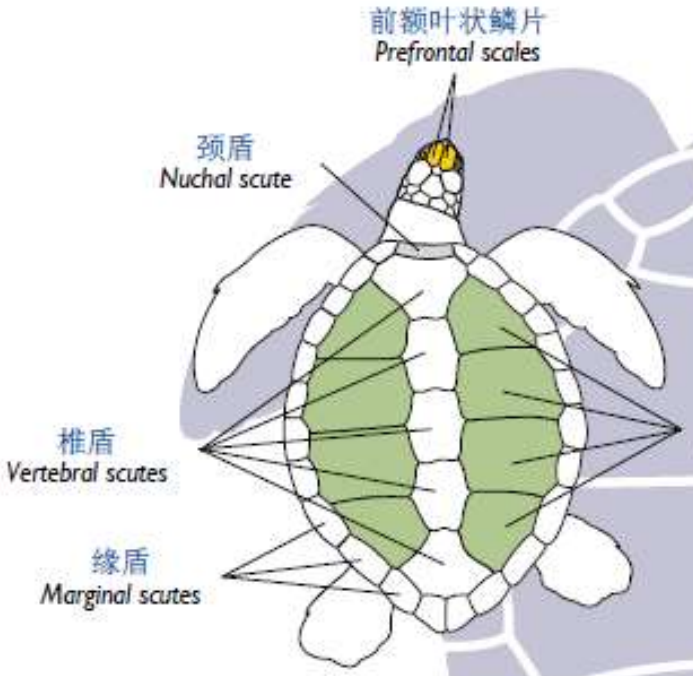
海龟

Sea turtles



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

Leathery; no scutes; 5 long ridges
Hard carapace (shell) with large scutes (shell plates)
4 costal (lateral) scutes; First costal scute does not touch nuchal
One pair prefrontal scales
Found in tropical coastal waters of Australia; Carapace has upturned edges
Two pairs prefrontal scales; overlapping scutes
5 or more costal (lateral) scutes; First costal scute touches nuchal
5 or 6 costal scutes; Carapace not circular
Carapace wide and almost circular
5 costal scutes; Nearly circular
Root food primarily in the Gulf of Mexico and Atlantic coast of the USA
usu. 6 or more costal scutes
Found in coastal waters of the Pacific, Indian and South Atlantic Oceans
Leatherback
Dermochelys coriacea
Green
Chelonia mydas
Flatback
Natator Depressus
Hawksbill
Eretmochelys imbricata
Loggerhead
Caretta caretta
Kemp's Ridley
Lepidochelys kempii
Olive Ridley
Lepidochelys olivacea

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	蠵龟	丽龟
납작등 바다 거북	녹색 바다 거북	매부리 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
	Bilóog, Katuan, Payukan, Pudno, Tabugan, Tortuga, Tuod.	Karahan, Sisik, Sisikan, Ulinaban.	Abi labi, Balimbing, Benerasan, Kamuhan, Kulod Manahanga	Balawan, Garanga.	Kalady, Lambangan, Latun, Lunok, Mukoy.
平背龜	綠蠵龜	玳瑁	革龜	赤蠵龜	欖蠵龜

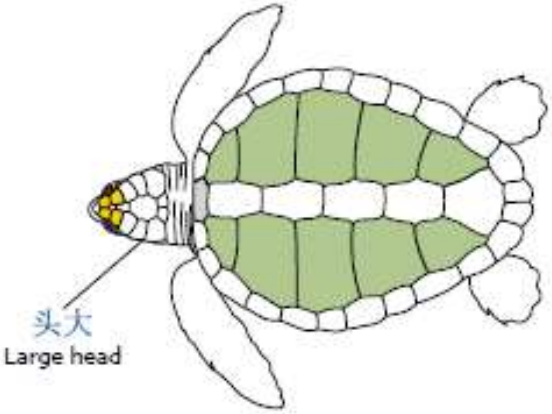
Caretta caretta

TTL

赤蠵龜

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.

Caretta caretta

TTL

海龟
Sea turtles

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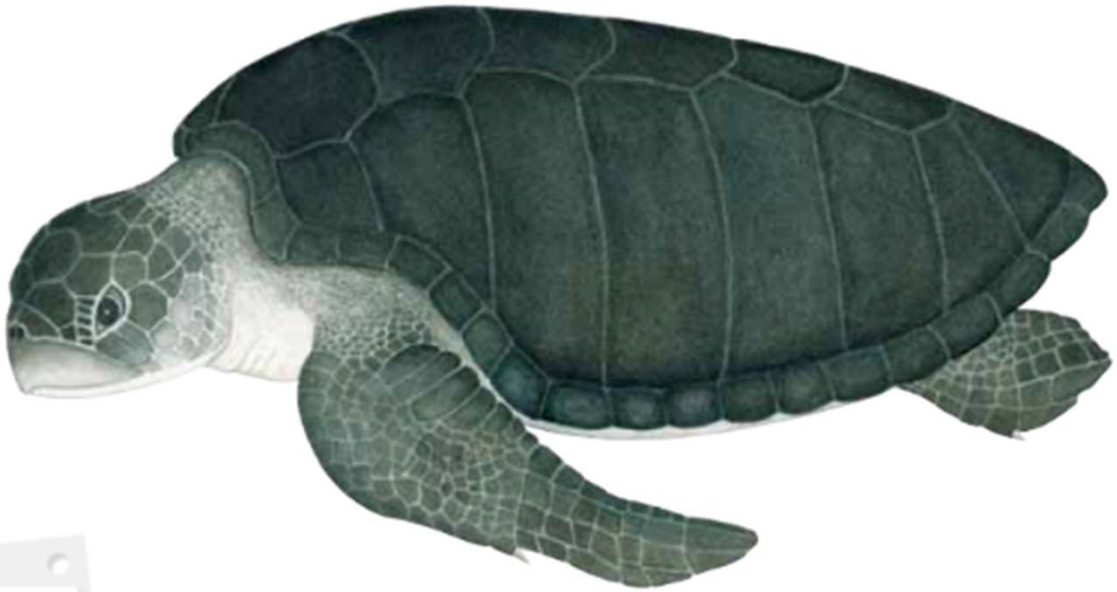
Lepidochelys olivacea

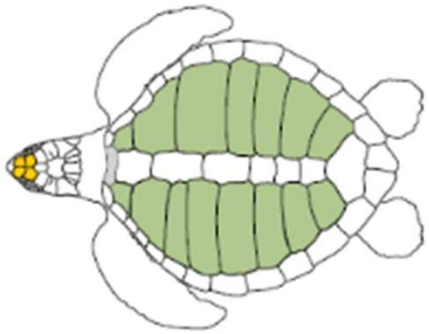
LKV

麗龜



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

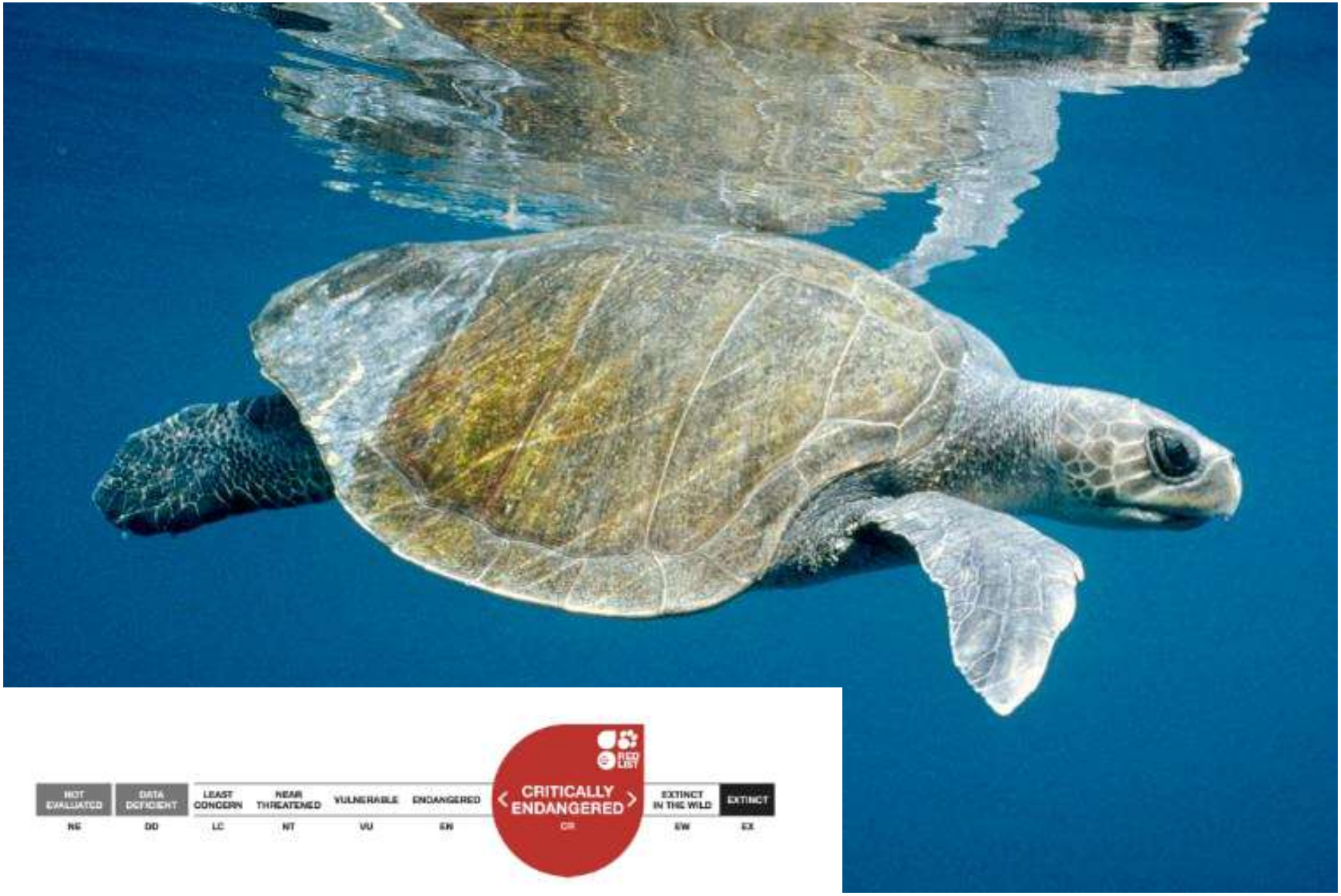
前额叶状鳞片两对
Two pairs of prefrontal scales



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



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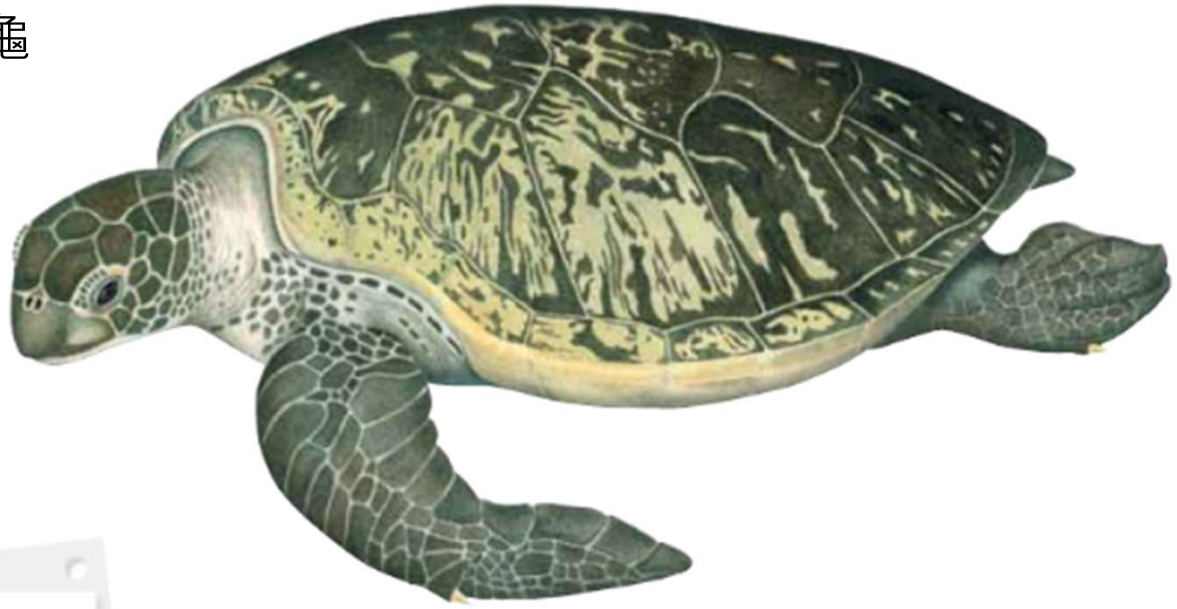
Chelonia mydas

TUG

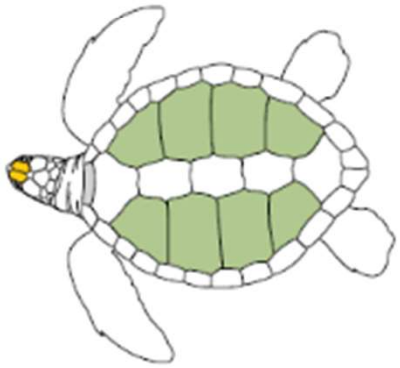
綠蠵龜



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

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Eretmochelys imbricata

TTH

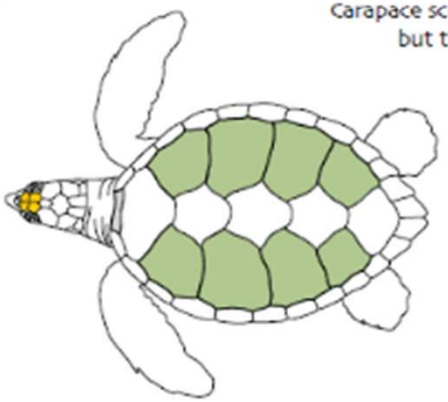
玳瑁

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

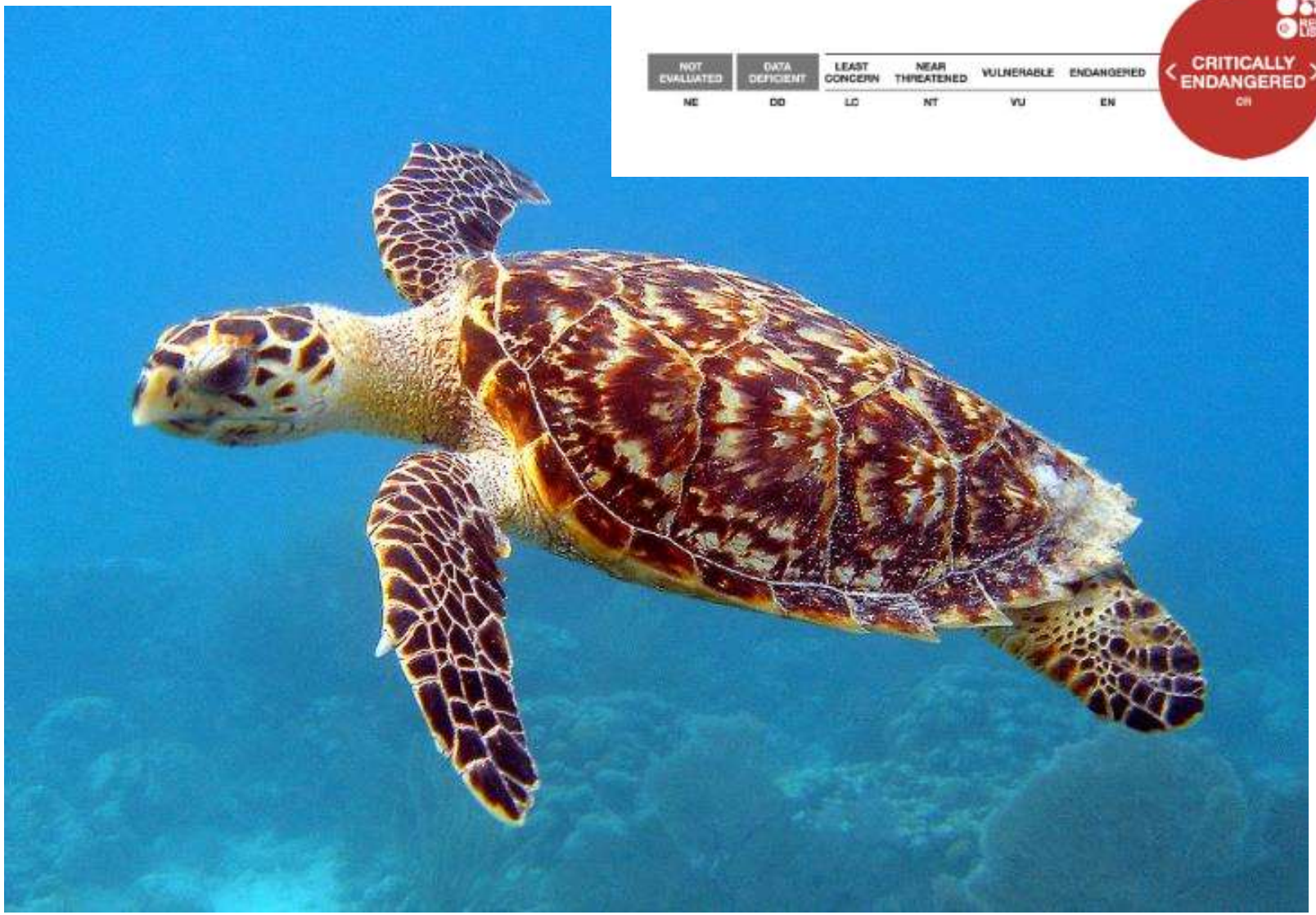
嘴尖钩形
Pointed hooked beak

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



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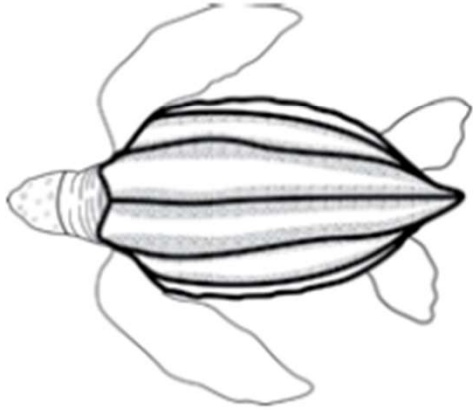
Dermochelys coriacea

DKK

革龜

Chinese: 棱皮龟
English: Leatherback turtle
French: Tortue luth
Japanese: Osa-game
Local:

头部无鳞片
No scales on head



背部(伪背甲)：无鳞片(仅被革质皮肤)，具七条纵棱
Back (pseudocarapace):
no scales (simply covered by a kind of leather) and divided by seven longitudinal ridges.

3.2b 減少混獲

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減少龜類混獲

- 對於降低龜類在被誤捕後的死亡率的最佳做法是，在通過動力塊以前使用快艇進行釋放。
- 進行此操作的最佳時間是纏住的龜和網子在通往動力塊的途中留下水 (此時應該暫停拖運)。如有必要可使用剪具剪開網子。
- 快艇能用來移走任何能自由移動但被包圍的龜。處理時請勿用腳蹼提起海龜，或用任何尖銳物體移動牠們。請握住烏龜殼壁盡速放生。

越早解開並放生，存活率越高

減少龜類混獲

- 如果烏龜看起來不省人事，請將其放在傾斜的表面上，使其後端比頭高6英寸。 這樣可以使水從肺部排出。
- 保持動物濕潤（用濕毛巾蓋住身體，而不是鼻子和嘴巴，或定期用水噴灑），並保持溫度在15攝氏度（60華氏度）以上。
- 每隔三個小時觸摸一次烏龜的尾巴或眼瞼，以檢查其反射。 昏迷但活著的烏龜可能沒有反應。
- 如果在24小時後烏龜沒有恢復，則很可能已經死亡。 但是，如果確實恢復了，請將其輕輕地釋放到水中。

魚鉤類型

有許多漁法和漁具調整能減少延繩釣漁業中誤捕海龜。下列操作已被證實相當有效。

使用大圓形漁鉤 (18/0 或更大)

大的圓形鉤似乎減少了對海龜的捕獲，因為它們在最窄的位置比J鉤寬，這使得圓形鉤很難放入龜嘴中。

圓鉤是圓形的，其尖端垂直朝柄方向旋轉。 如果烏龜咬了一個圓鉤，它們就不太可能被深深地鉤住

這樣可以更輕鬆地將烏龜摘鉤，或者至少更容易移除大部分漁具。

輕鉤的烏龜比深鉤的烏龜有更大的生存機會，這取決於它們的確切位置和處理方式。

魚餌選擇

龜類吃魷魚類方式與吃其他魚類不同。

龜類吃魷魚習慣一口吞下，也增加其被誤鉤風險。

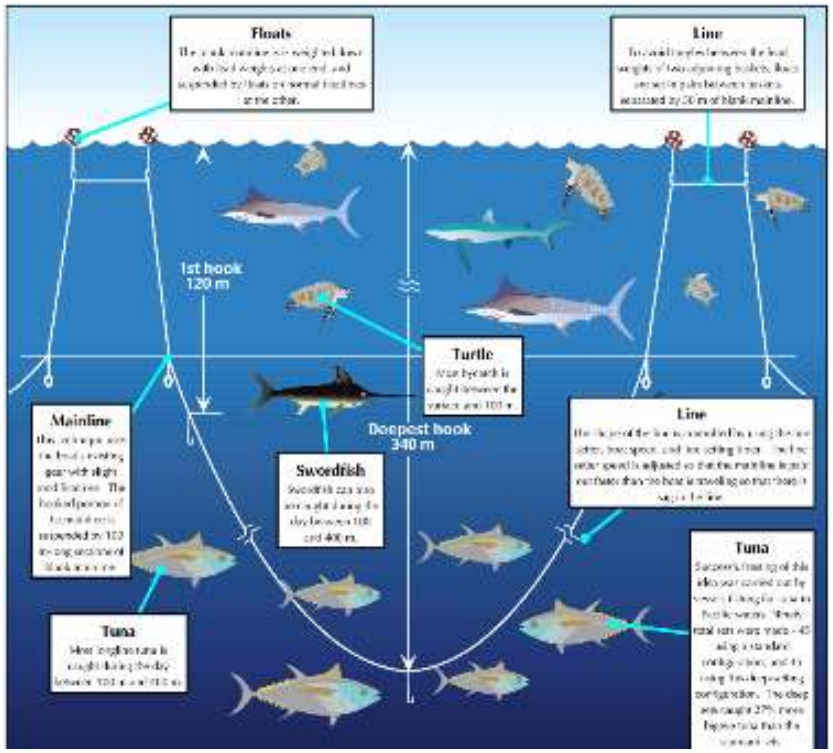
龜類吃其他魚類，會小口啃食。如此若使用魚類作餌，龜類比較有可能僅在魚鉤附近啃食而不會誤食。

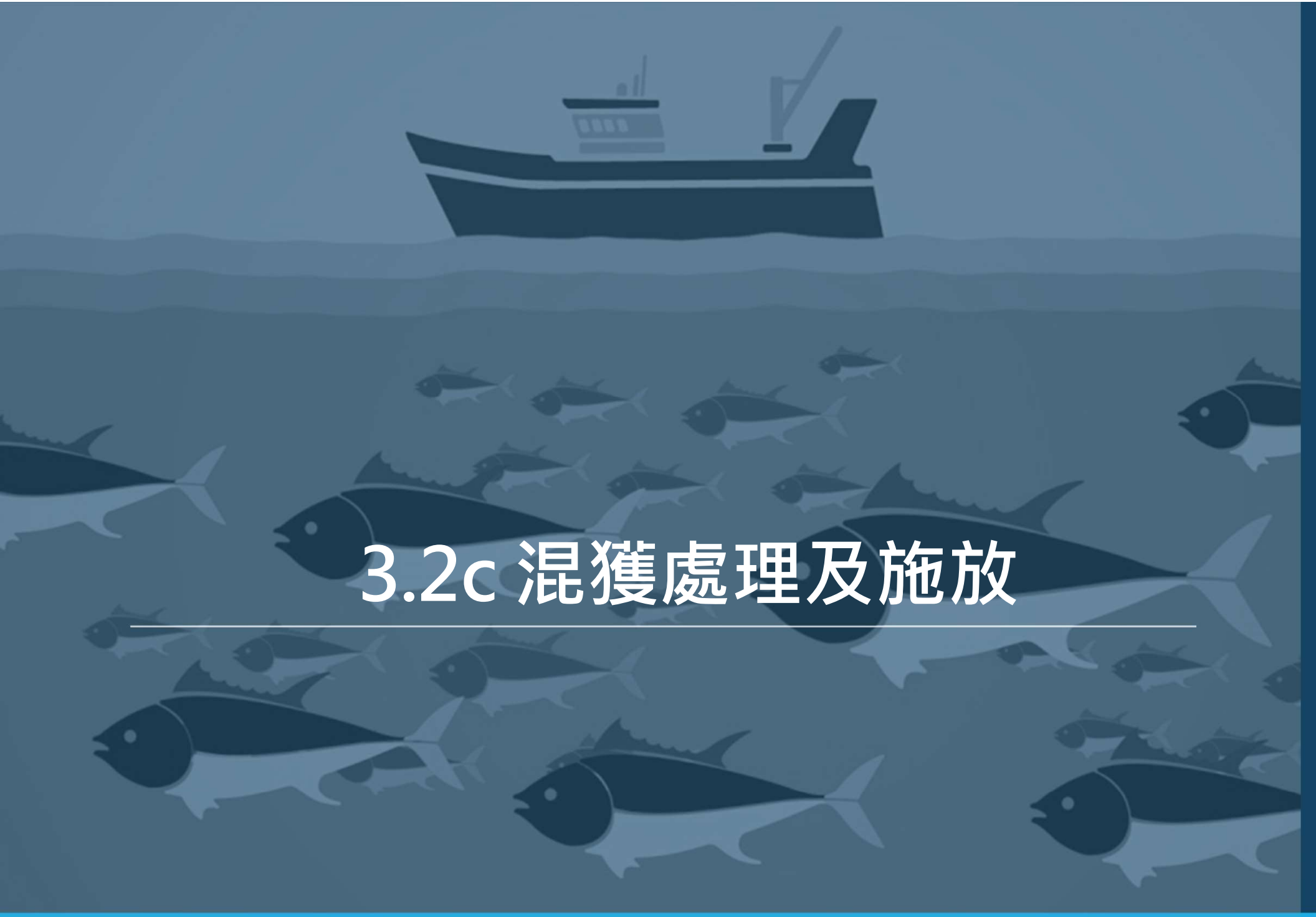
使用鯖魚或其他餌魚可減少鉤住海龜的機會

深度設定

龜類較可能活動於海水較淺部份。將檔位設置得比100公尺更深是避免誤捕海龜的一種好方法。有幾種方法可以使檔位更深：

- 增加浮標線的長度
- 延長浮標旁邊的支線
- 在添加分支線之前，在浮標線的每一側留更長的距離





3.2c 混獲處理及施放

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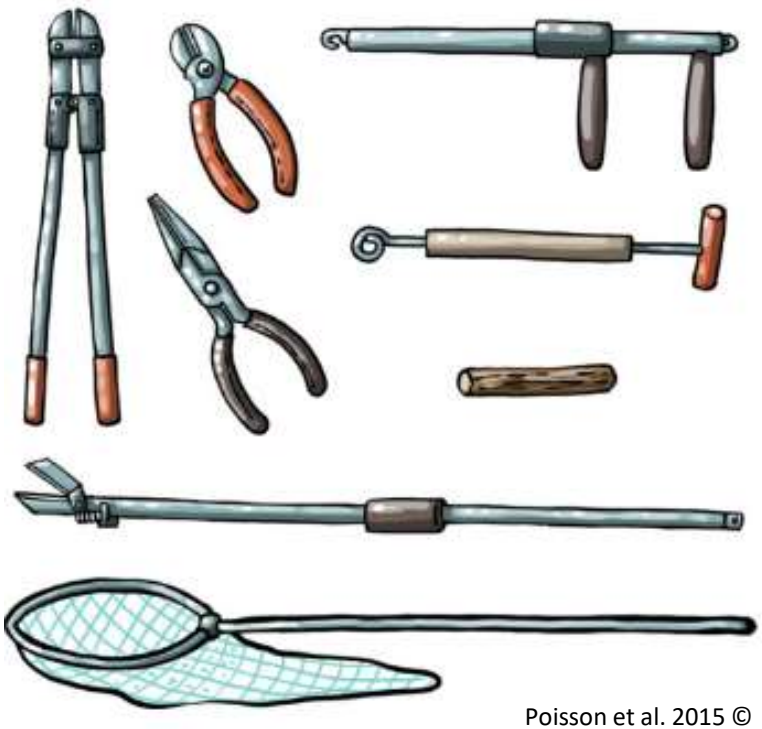
誤捕龜類處置與施放

若是以適當器具來釋放誤捕龜類將會非常快速又安全，適當器具如下:

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 ©

誤捕龜類處置與施放

當見到被誤鉤或被漁網纏住的龜：

- 慢慢將船停下並且釋放漁線張力
- 維持一樣張力，輕輕拉動漁線將海龜拉近
- 請勿使用漁叉或其他尖銳物品處置海龜
- 現在，您必須決定是將烏龜帶入上船還是在水中釋放
- 以下兩因素往往會左右上述決定：
  - 海龜體型大小
  - 海況

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

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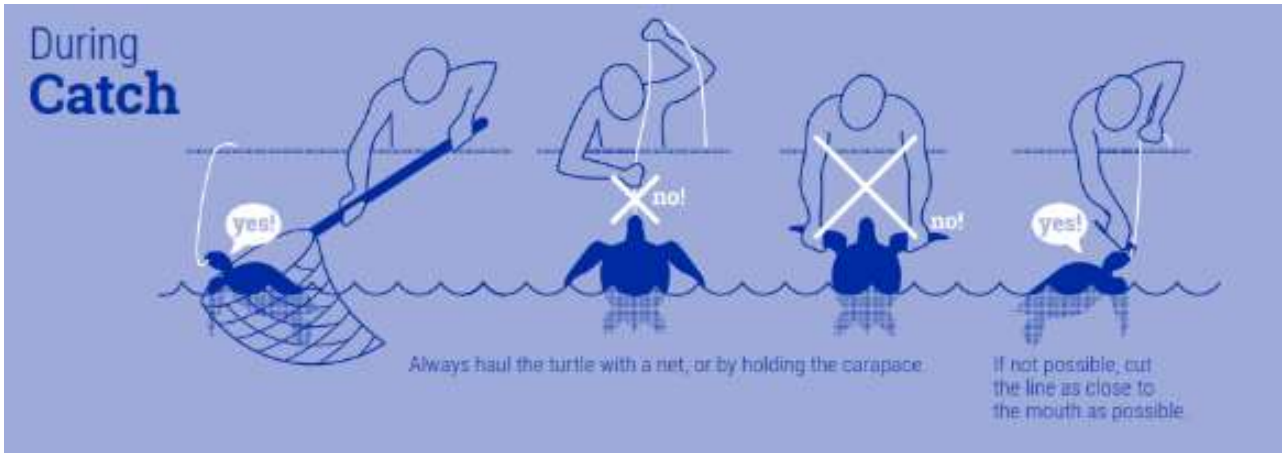
誤捕龜類處置與施放



若海龜僅是在海中被纏繞住：

- 用長柄裝置固定鬆動的鉤子，例如提鉤器或粗斜紋棉布（但切勿誤傷海龜本身）
- 以長柄剪線器具剪掉纏繞住海龜的漁線或漁網

誤捕龜類處置與施放

如果海龜被誤鉤住了，但仍在海中：

- 如果內部鉤住，請勿嘗試取下鉤子，也不要拉扯繩索
- 用長柄剪線器將海龜嘴巴內的線剪斷，釋放動物
- 如果鉤在其他部位或嘴巴附近，則可以嘗試使用“豬尾巴”除鉤器卸下鉤子
- 如果沒有成功，則將鉤子留在原處，並儘可能縮短線的長度

如果決定將誤捕到的海龜帶上船：

- 務必只使用抄網將海龜帶上船
  - 切勿使用漁叉
  - 切勿以鉤住的漁線抬起或拖行海龜
  - 切勿以腳蹼抬起移動海龜

誤捕龜類處置與施放

如果決定將誤捕到的海龜帶上船：

- 避免以腳蹼提起海龜
- 盡可能握住外殼的前部和後部進行提起
- 將海龜放在一圈繩索或汽車輪胎上
- 切勿將海龜倒置，海龜將因此死亡
- 評估海龜狀況並藉由評估決定後續步驟
- 牠是否還有呼吸，並且移動？
- 透過觸摸尾巴及眼瞼或腳蹼來看是否有反應
- 嘗試打開牠嘴巴。若很難打開有可能已死亡
- 準備好防鉤裝置，張口器和堵嘴工具

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

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誤捕龜類處置與施放

如果鉤子在嘴裡，請嘗試移除。如果海龜將鉤子嚥下肚，則切勿嘗試移除，否則有可能造成更嚴重傷害。若鉤子是勾在外部，則請嘗試移除。嘗試兩次還是失敗，請將鉤子留在原地。

使用剪線器將線切割到盡可能靠近旋梭的位置。 如果可以，使用斷線鉗將勾在眼睛附近的鉤子剪斷，然後將其拉出。

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

誤捕龜類處置與施放

如果決定將誤捕到的海龜帶上船：

評估掛鉤位置並採取相應措施。 如果鉤在下巴或喙上準備好塞口器和張口器

纏繞有油管，木甲板刷柄等的鋼絲卷。打開海龜嘴巴

Tip:

- 為了張開海龜的嘴，將拇指和食指放在鼻子的兩側。 這有機會馬上觸發海龜生理機制，並將嘴張開。如果您用另一隻手堵住嘴塞，則可以使用此響應將其快速放置在嘴的下巴鉸鏈上，以使其保持張開狀態，並輕鬆檢查嘴內的鉤。

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

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

誤捕龜類處置與施放

如果鉤子勾在海龜其他部位：

用除鉤器或鉗子輕輕將其移除

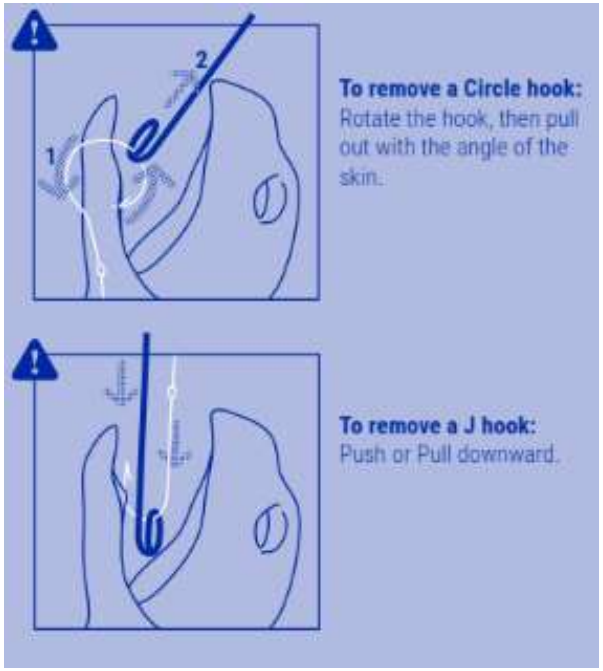
如果可見鉤子的尖端與倒鉤：

- 用斷線鉗剪斷鉤桿並拉出鉤
- 或用鉗子將倒鉤弄平，並按其插入方式去掉鉤子
- 或從鉤眼上拔下線，然後從尖端和倒鉤側將鉤拉開

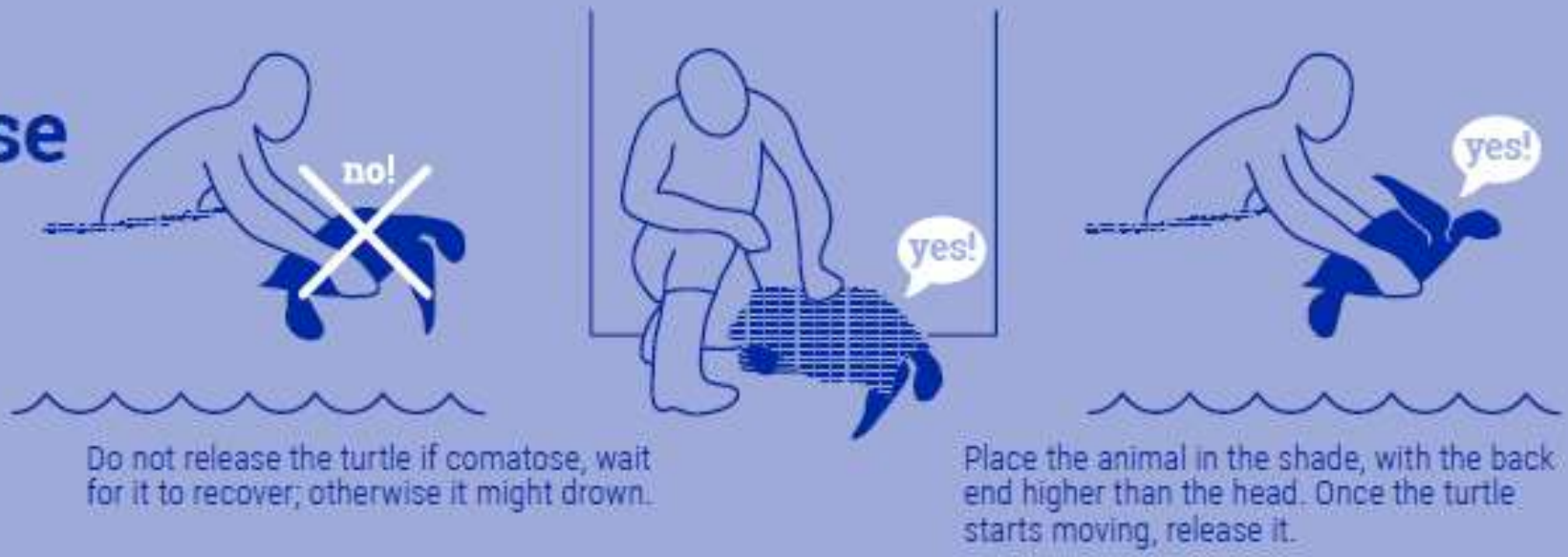
Jaw hooked turtle where hook shaft should be cut before removal
(Photo: M Parga SUBMON)

誤捕龜類處置與施放

- 將解鉤器放在線上，辮子的開口端朝上
- 將解鉤器向自己方向拉去接合線，然後將解鉤器順時針旋轉四分之一圈
- 將去鉤器向下滑動到引導器上，直到與鉤子的鉤部嚙合為止
- 將雙手放在一起，確保線係緊且平行於除鉤器
- 向下輕推
- 將勾住鉤子的除鉤器拿出來

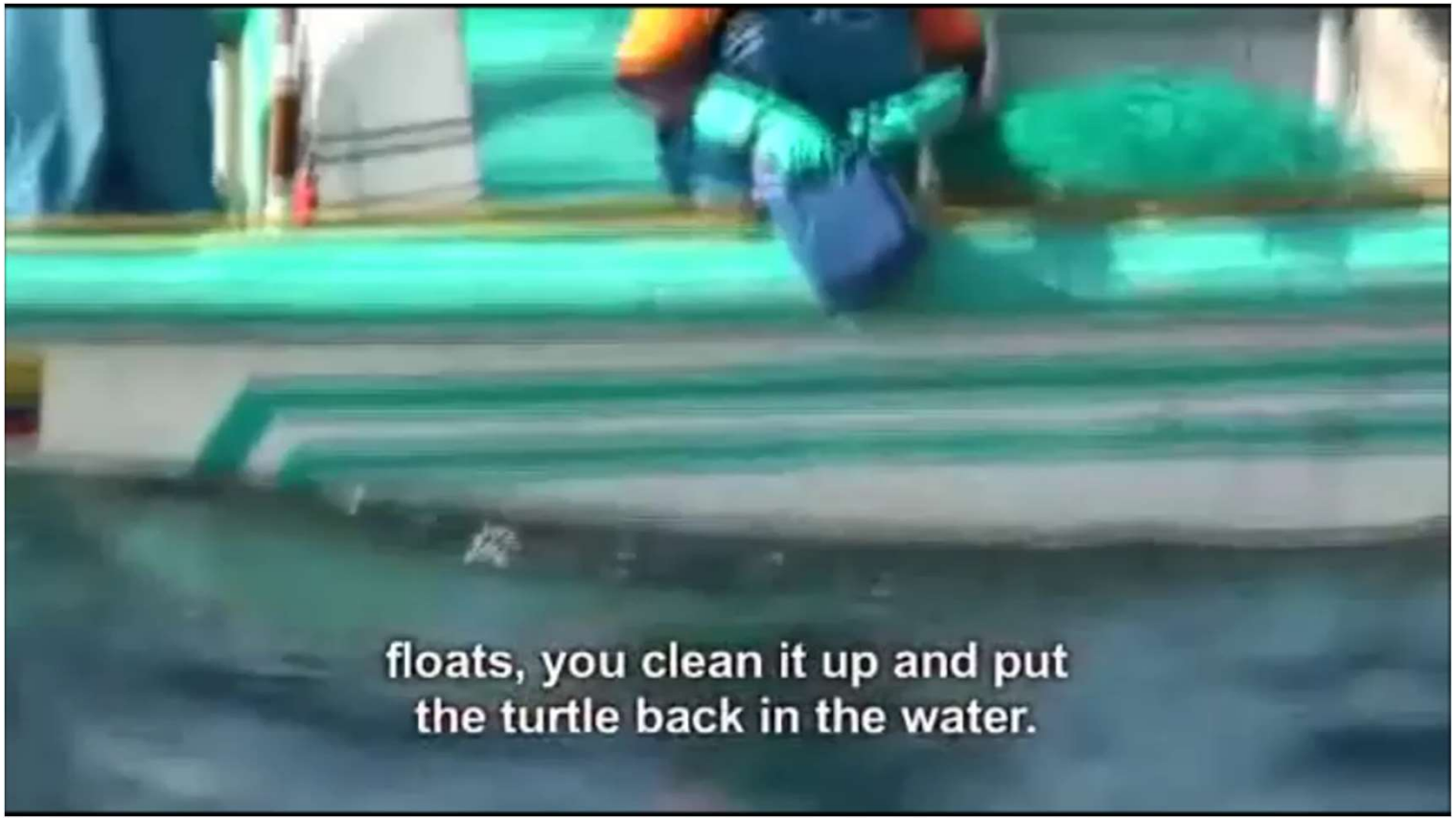


During
Release



當要將海龜放回海裡時：

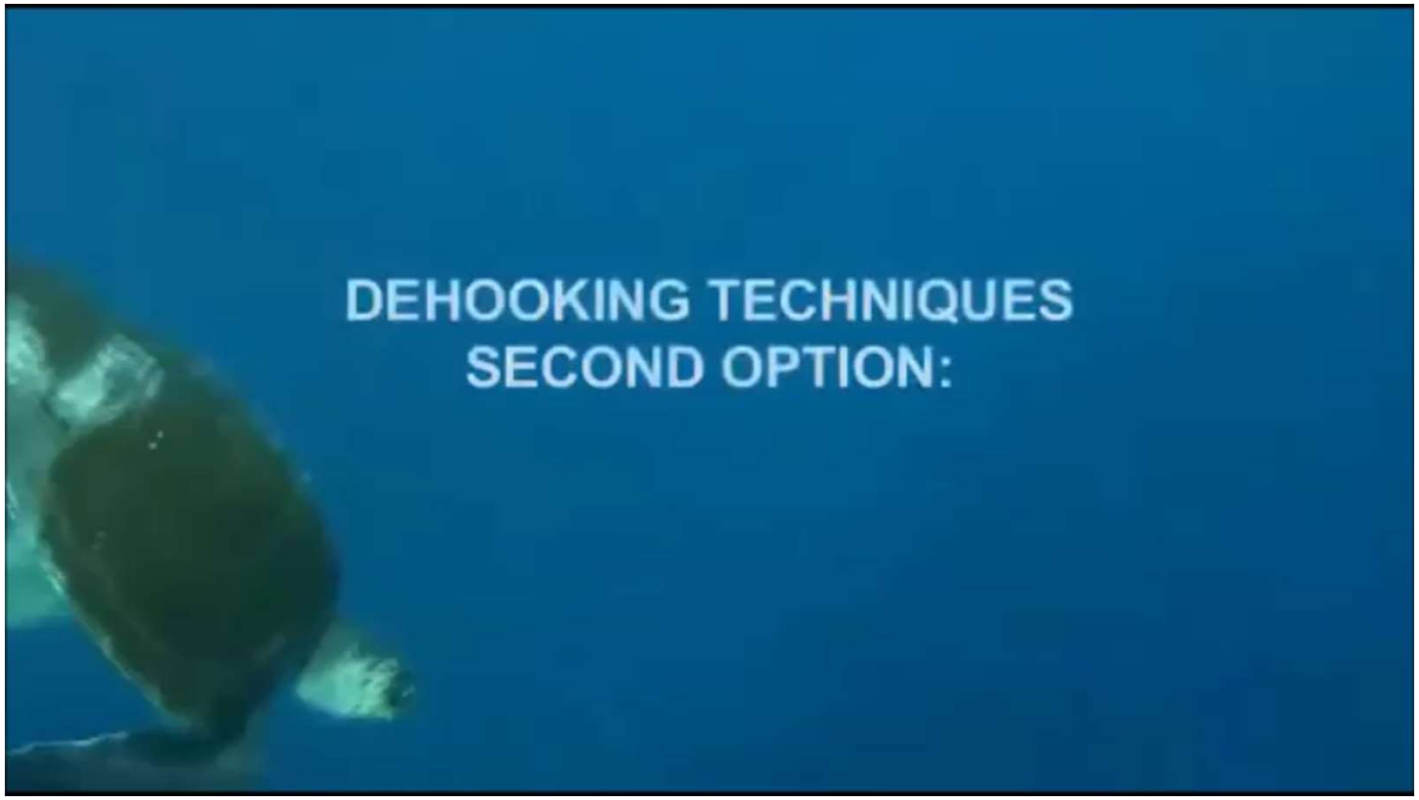
- 確定海裡沒有漁具
- 將漁船停下
- 將引擎打至空檔
- 首先將龜頭部緩緩放入水中，並抓住殼的側面。 如果船上有側門，請使用側門
- 避免將海龜丟扔進海中
- 在發動引擎前，確保海龜與船的安全距離


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


BOATING AND HANDLING
OF SEA TURTLES


DISENTANGLEMENTS


DEHOOKING TECHNIQUES


DEHOOKING TECHNIQUES
SECOND OPTION:

3.3 海鳥類/Seabirds

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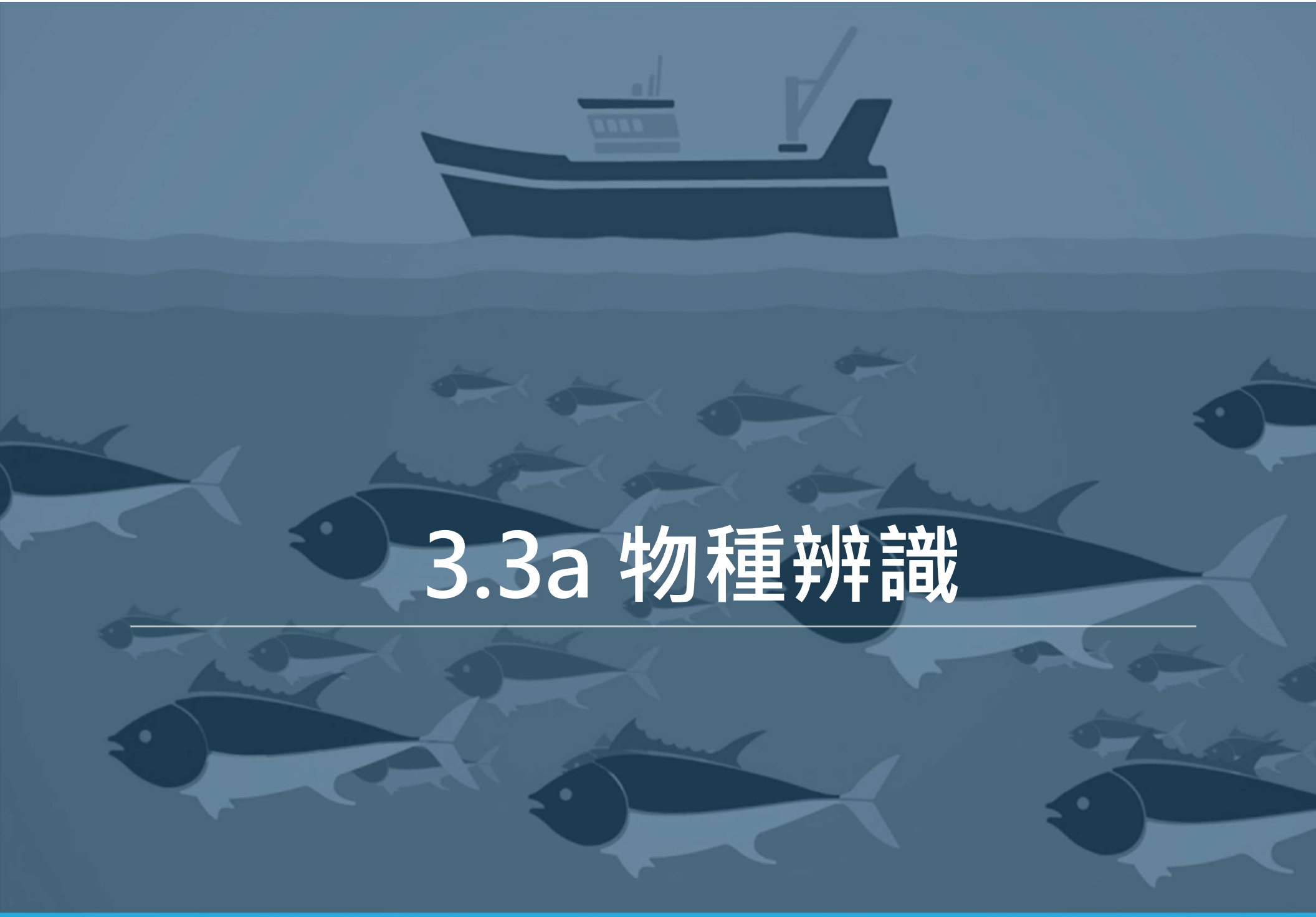
	WCPFC	IOTC	IATTC
Seabirds	✓ Implement FAO IPOA-Seabirds ✓ Safe/live release ✓ Reporting requirements **CMM 2018-03:** South of 30 deg south: Must use either two of these measures (weighted branch lines, night-setting or tori lines) **or** use hook-shielding devices. (In force 1 Jan 2020). 25 deg south - 30 deg south: Must use at least one of these 3 measures: weighted branch lines, tori lines or hook-shielding devices. (In force 1 Jan 2020). North of 23 deg N: **LS[3] 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. **Small scale LL:** Must use at least one of: side-setting, night setting, tori lines and weighted branch lines.	✓ Implement FAO IPOA-Seabirds ✓ Safe/live release ✓ Reporting requirements **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)	✓ Implement FAO IPOA-Seabirds ✓ Safe/live release ✓ Reporting requirements ✓ Encourage national observer programs for LL North of 23 deg N (except in Mexican waters) and South of 30 deg S plus an additional area: **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) **Other LL in other EPO areas:** voluntary implementation. (C-11-02)
SUMMARY	✓ 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	✓ At least 2 required from menu: night-setting, bird scaring/Tori lines; line weighting	✓ At least 2 required from menu, including one of: side-setting, night setting, tori lines and weighted branch lines

	WCPFC	IOTC	IATTC
海鳥類	導入FAO IPOA- 海鳥 安全/存活釋放 回報要求 CMM 2018 – 03 30度以南:加權支線，夜間作業，花托線，鉤形遮蔽裝置，帶有鳥簾的子設置，上述裝置至少須具備一樣 (现行2020年一月一日) 南25度，南30度:加權支線，夜間作業，花托線，鉤形遮蔽裝置，帶有鳥簾的子設置，上述裝置至少須具備一樣	導入FAO IPOA-海鳥 安全/存活釋放 回報要求 延繩釣，25 度以南： 夜間作業，驅鳥繩，將漁線加重量，上述裝置至少須具備兩樣	導入FAO IPOA-海鳥 安全/存活釋放 回報要求 於延繩釣漁業中鼓勵各國家級觀察員活動
總結	加權支線，夜間作業，花托線，鉤形遮蔽裝置，帶有鳥簾的子設置，上述裝置至少須具備一樣	夜間作業，驅鳥繩，將漁線加重量，上述裝置至少須具備兩樣	夜間作業，驅鳥繩，將漁線加重量，上述裝置至少須具備兩樣



3.3a 物種辨識

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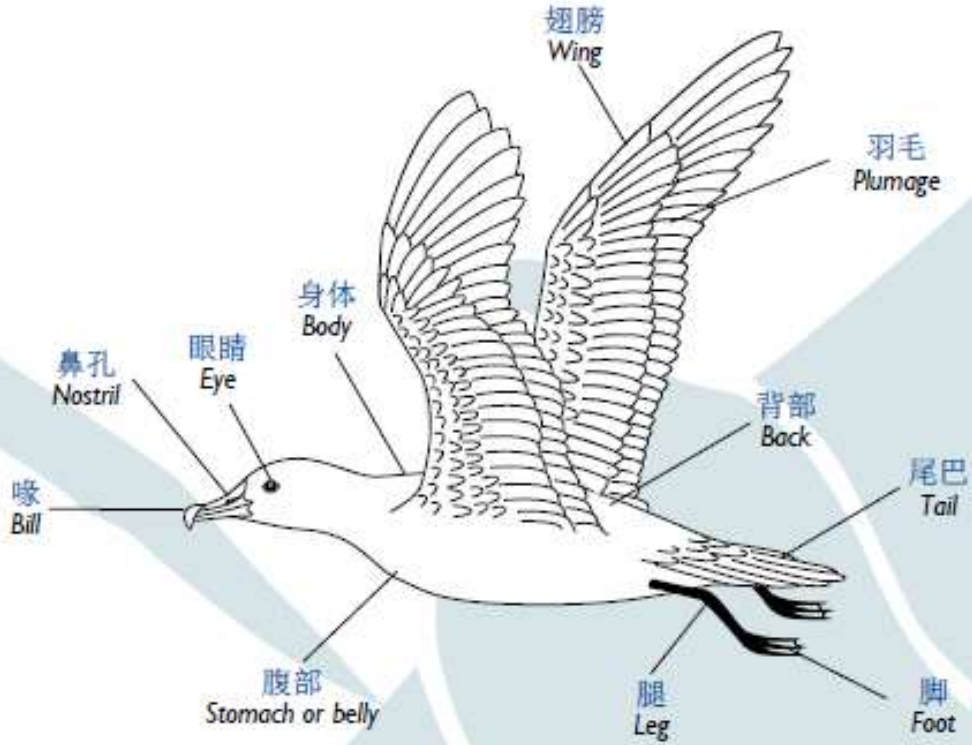
海鸟
Seabirds



Scientific	Chinese	English	FAO code	Page
Diomedeidae	信天翁科	Albatrosses	ALZ	108
Diomedea immutabilis	黑背信天翁	Laysan albatross	DIZ	107
Diomedea nigripes	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 (Photo: Dimas Gianuca, ProjetoAlbatroz)

Mollymawks (Photo: Oliver Yates, BirdLife International)

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

Storm Petrels (Photo: JJ Harrison)

Gulls (Photo: Luis Cabezas, ATF Chile)

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

Diomedeidae

ALZ

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:

Diomedeidae

ALZ

3.3b 減少混獲

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減少海鳥類混獲

- 漁業行為威脅某些海鳥物種的生存。
- 最常被捕的鳥類繁殖能力通常不強。
- 您能提高被誤捕上船的鳥類的存活率，也能預防自己在處理混獲鳥類時受傷。對於瀕危鳥類而言，每一次混獲後的有效放生都相當重要。

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區域管理組織條文

Table 1: Mitigation measures

Column A	*Column B*
Side setting with a bird curtain and weighted branch lines[1]	*Tori line*[2]
Night setting with minimum deck lighting	*Blue-dyed bait*
Tori line	*Deep setting line shooter*
Weighted branch lines	*Management of offal discharge*
Hook-shielding devices[3]	

A	B
船側邊設置鳥廉, 並將漁線增加重量	驅鳥繩
夜間作業, 盡可能使甲班照明程度最低	Blue-dyed bait
驅鳥繩	Deep setting line shooter
漁線重量增加	漁獲內臟排放
鉤屏蔽裝置	

驅鳥繩

驅鳥繩，又稱驅鳥器

Bird scaring line (Photo: Sebastian Jimenez, Albatross Task Force, Uruguay)

從船尾附近的高處拖曳一條繩索，定期拖下懸掛的拖纜，驅趕鳥類。

當驅鳥繩直接在誘餌鉤上方拍打，並同時使用兩條驅鳥繩（進入誘餌鉤的左舷和右舷）時，此方法更為有效。

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

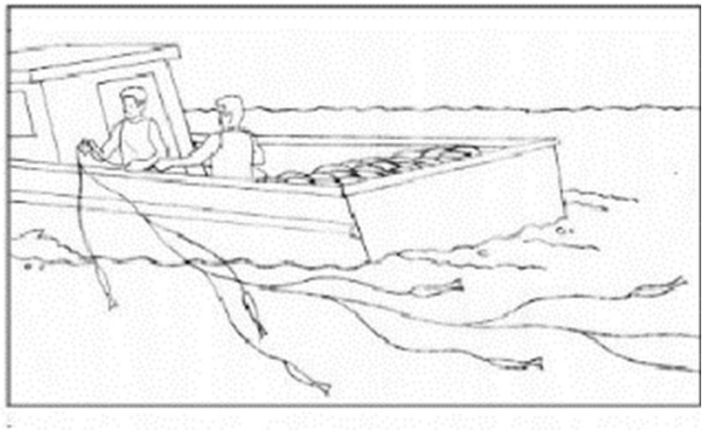
夜間投餌

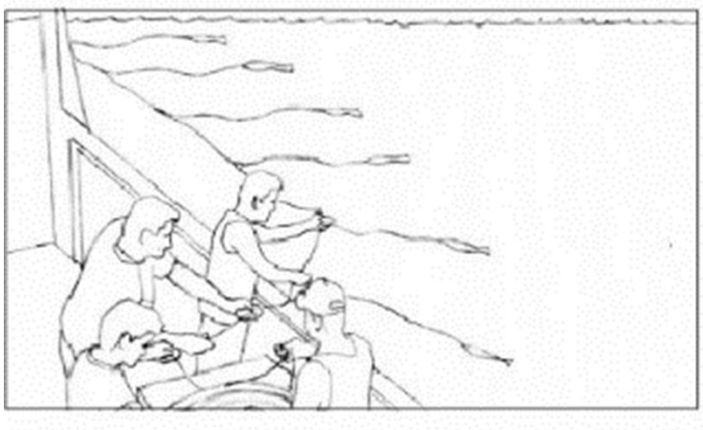
一些信天翁等海洋海鳥在夜間不覓食，因此在夜間擺放和取回漁具將最大程度地減少鳥類混獲的可能性。

甲板照明應保持最小，僅使用符合導航規則和最佳安全規範的照明。

Night setting (Photo: Ricardo Hoinkis, Projeto Albatroz)

側邊投餌





側面投餌作業（在船尾前方至少1公尺）可減少誘餌鉤靠近水面，並減少鳥類可見餌的時間。 通過在魚鉤的保護下將誘餌的鉤子向前並靠近船體拋擲，可以使誘餌的鉤子有時間下沉到鳥無法觸及的地方。

另一個優點是它只需要一個工作區域，從而消除了固定和拖曳工位之間移動齒輪和誘餌的麻煩。

加重延繩支線

增基重量的延繩支線下降得更快，並減少了海鳥可觸及誘餌的時間。 旋轉經常用於稱重，但是在斷裂的情況下滑出支線的“安全引線”更為安全。

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

重量至少應為：

- 45克, 小於1 公尺
- 60 克, 1~3.5 公尺
- 98 克, 3.5~4 公尺

西南太平洋海域有另一選項為小於 40 克, 50 公分以內

漁獲內臟排放

船隻可能會確保在設置或拖運過程中沒有內臟排出物，或者在划船/拖拉過程中從船的另一側使用策略性的內臟排出物，以吸引禽類脫離誘餌鉤。

如果您打算使用此技術，請記住，在需要時，在拖運物和佈景之間保持足夠的內臟。

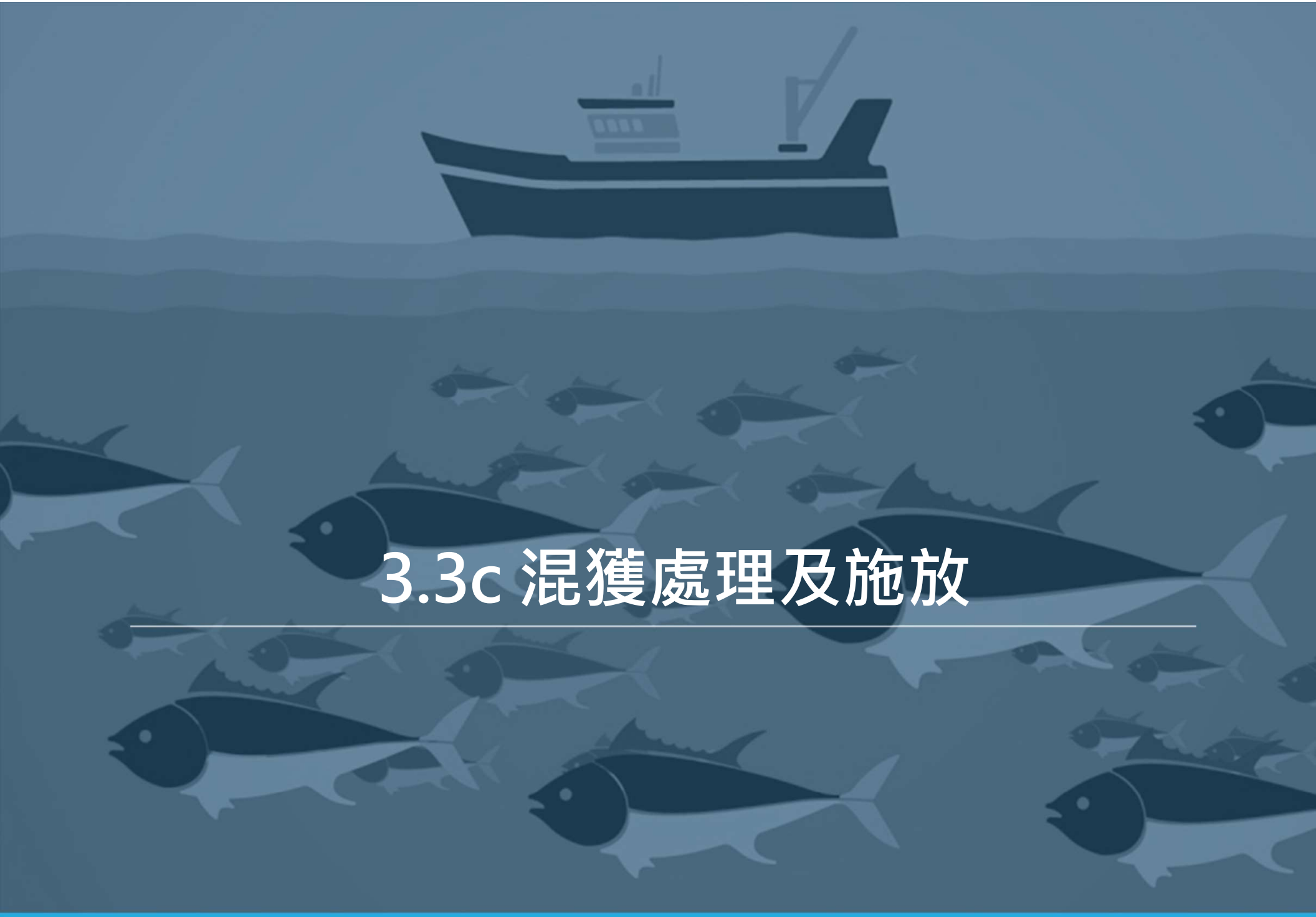
魚餌管理

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

海鳥類對於 Blue-dyed baits 餌類可見度低，所以此已被提議作為減少海鳥因為要覓食意而意外被鉤住的一種方法。

實驗證明染成藍色的魷魚餌會比較少被海鳥視力所見，但染成藍色的魚餌則較無效果。

在夏威夷延繩釣漁業中，為減少海鳥兼捕而推廣了這種策略。



3.3c 混獲處理及施放

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混獲處理及施放

當在線上發現活的海鳥時，請將船隻減速至停下來，並通過平穩地將線路帶走而不猛拉，從而將鳥放到船隻側面釋放。 如果有的話，請使用長柄抄網。

海鳥類可能會咬人，所以請確保有眼睛保護裝置以及手套。正確拿取鳥類方式如下：

- 從後腦勺脖子上緣握著
- 將羽毛和翅膀折回自然位置，緊貼身體
- 請勿覆蓋鼻孔或過緊擠壓造成其無法呼吸
- 用毛巾覆蓋其身體，以保護羽毛免受油污和其他損害

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

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

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

混獲處理及施放

Hooked bird (Dimas Gianuca, Projeto Albatroz)

如果海鳥稍微被鉤到鳥喙，腿或翅膀上，然後您也看到鉤的倒鉤：去除線，用斷線鉗切掉倒鉤，然後再將鉤的其餘部分退回去。

如果漁鉤深深地鉤在海鳥身體或喉嚨中，則將線切割得越短越好，並且將鉤留在原處。

卸下深深嵌入的鉤子可能弊大於利。 切勿拉扯引導器以除去掛鉤。

完全康復的鳥可以站起來，抬起頭，對聲音做出反應，呼吸而沒有噪音，並且可以正常收起翅膀。

要釋放鳥，請停下船隻並將鳥放在水面上。 不要扔到空中。

如果遇到帶標籤的鳥，請記錄捕獲的數量，種類，時間和地點。

3.4 鯨類動物

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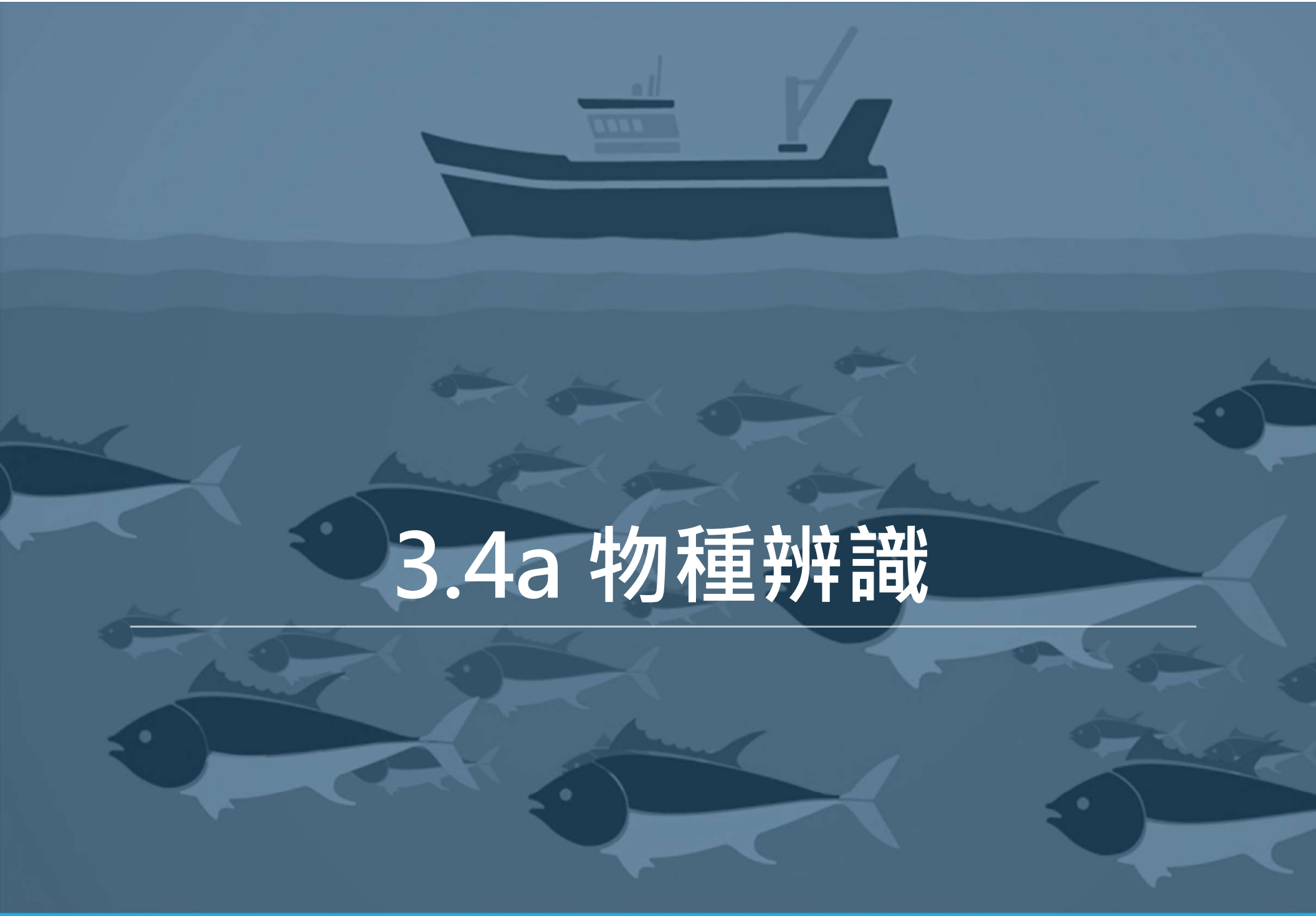

3.4a 物種辨識

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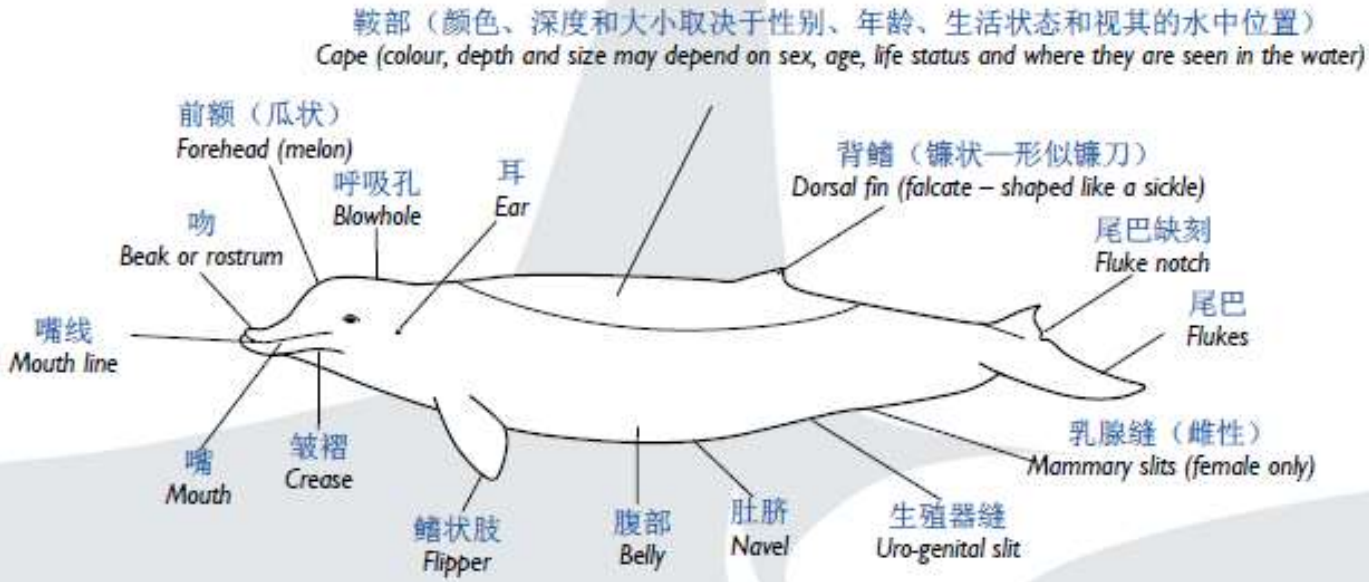
齿鲸类

Toothed whales

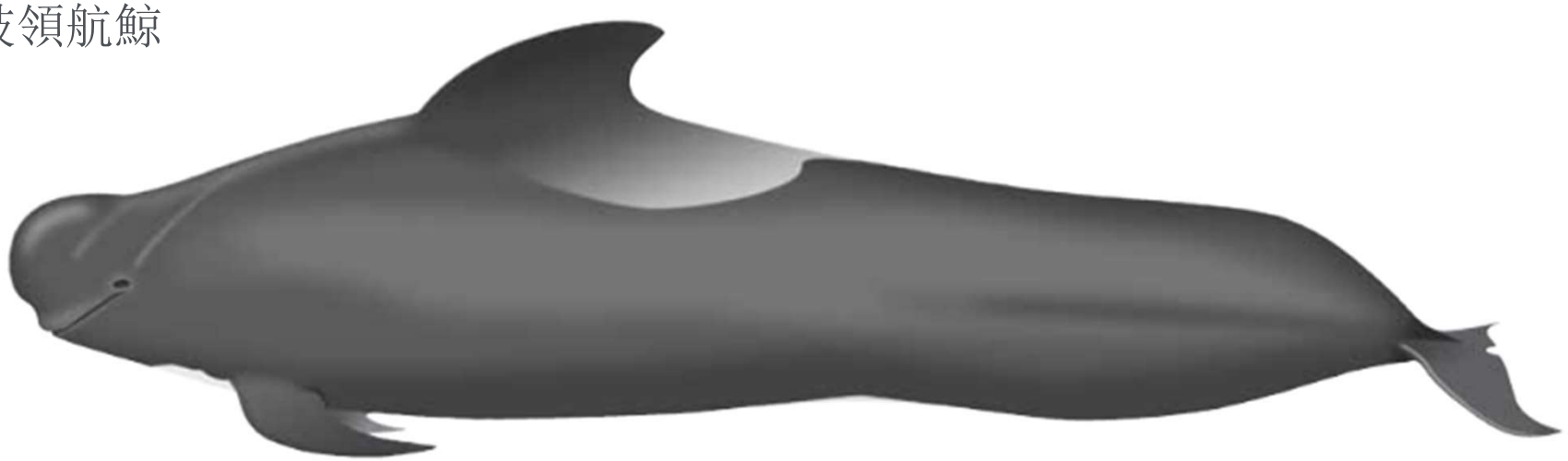


Scientific	Chinese	English	FAO code	Page
Feresa attenuata	侏虎鲸	Pygmy killer whale	KPW	117
Globicephala macrorhynchus	短肢领航鲸	Short-finned pilot whale	SHW	115
Kogia breviceps	小抹香鲸	Pygmy sperm whale	PYW	120
Kogia simus	倭抹香鲸	Dwarf sperm whale	DWW	121
Mesoplodon densirostris	布氏长喙鲸	Blainville's beaked whale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

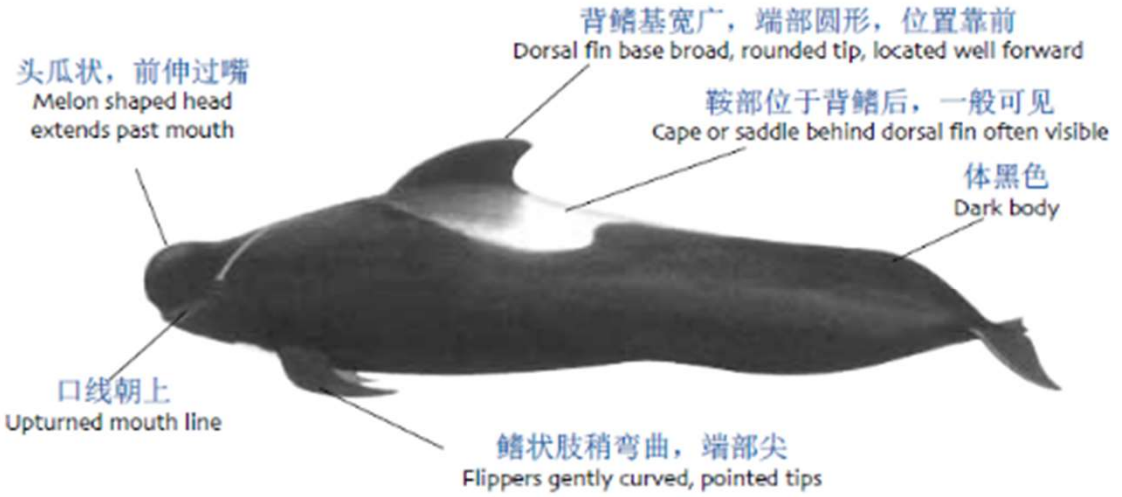
Globicephala macrorhynchus

SHW

短肢领航鲸



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



最大体长：6米
Maximum length: 6 m

Globicephala macrorhynchus 短肢領航鯨

SHW

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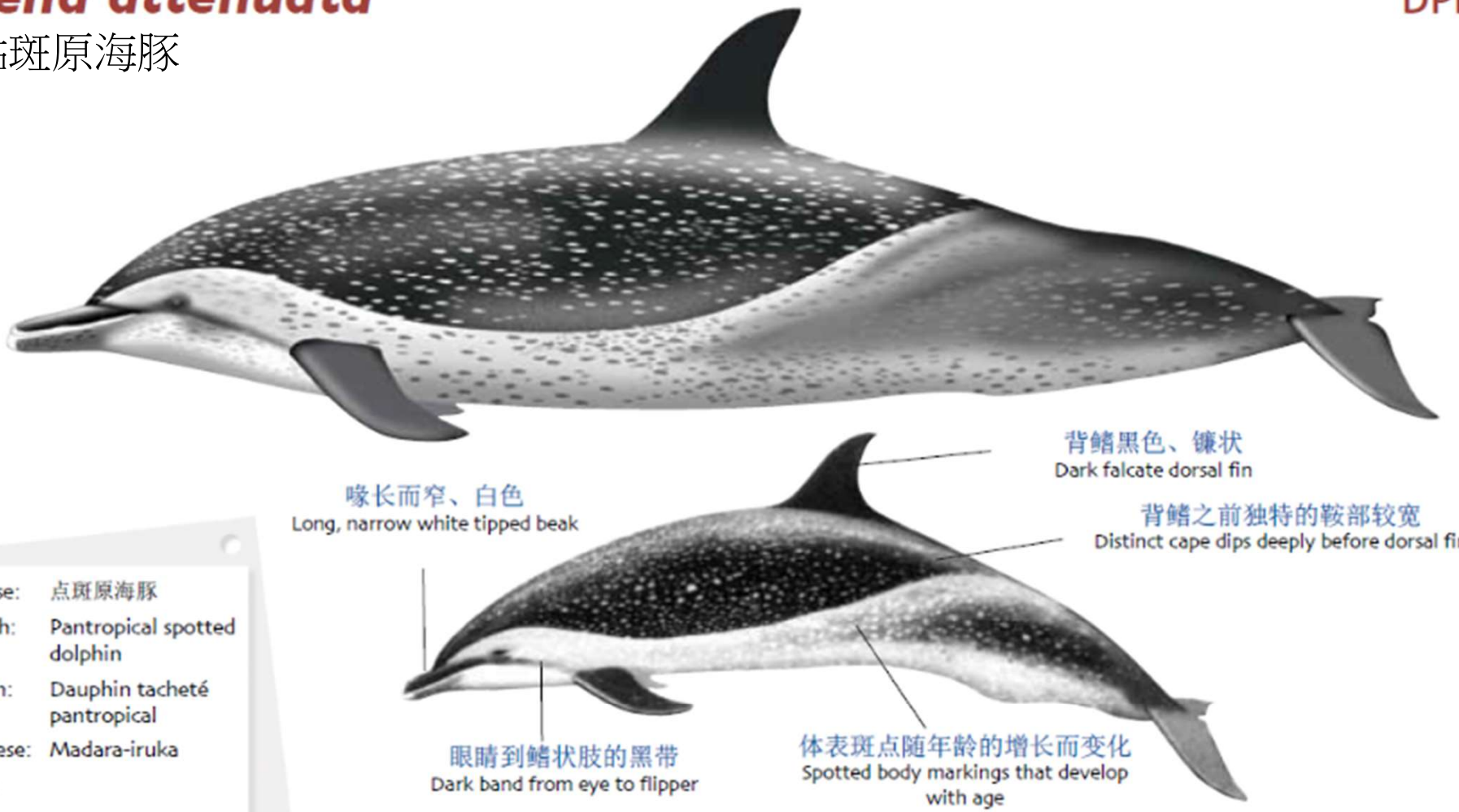
Stenella attenuata

DPN

熱帶點斑原海豚



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

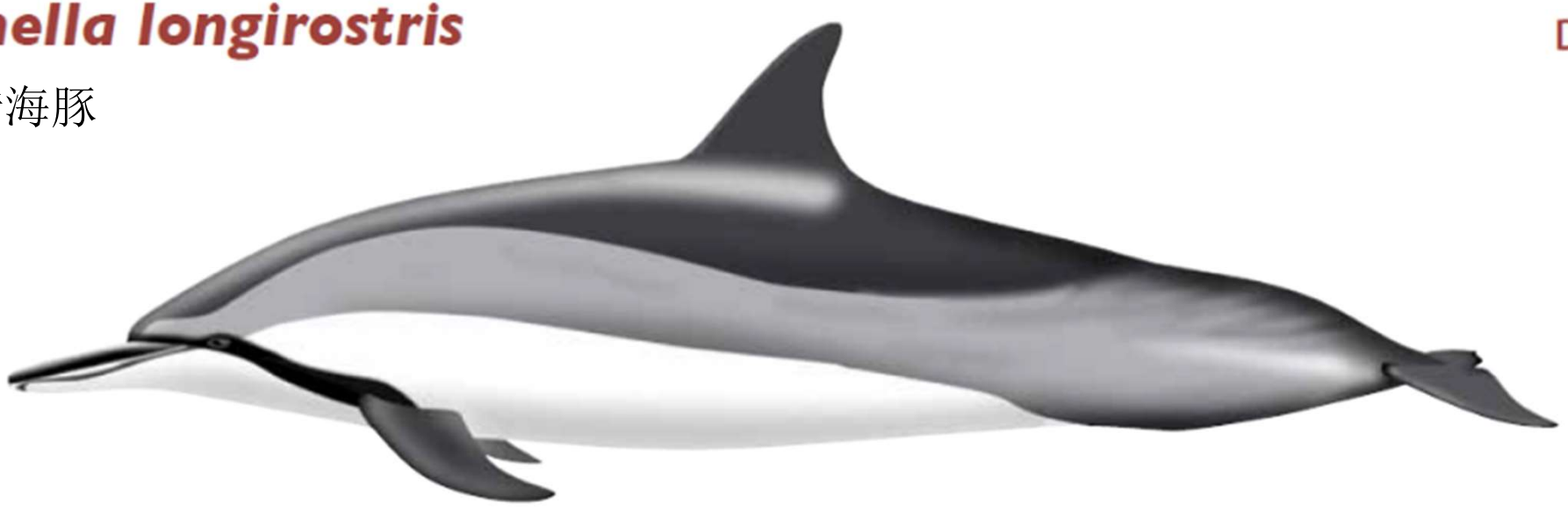
最大体长：2.6米
Maximum length: 2.6 m

Stenella attenuata 熱帶點斑原海豚

Stenella longirostris

DSI

旋转海豚



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

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

鳍状肢长而尖
Long pointed flippers

腹部白色
White belly

最大体长：2.1米
Maximum length: 2.1 m

Stenella longirostris 旋转海豚

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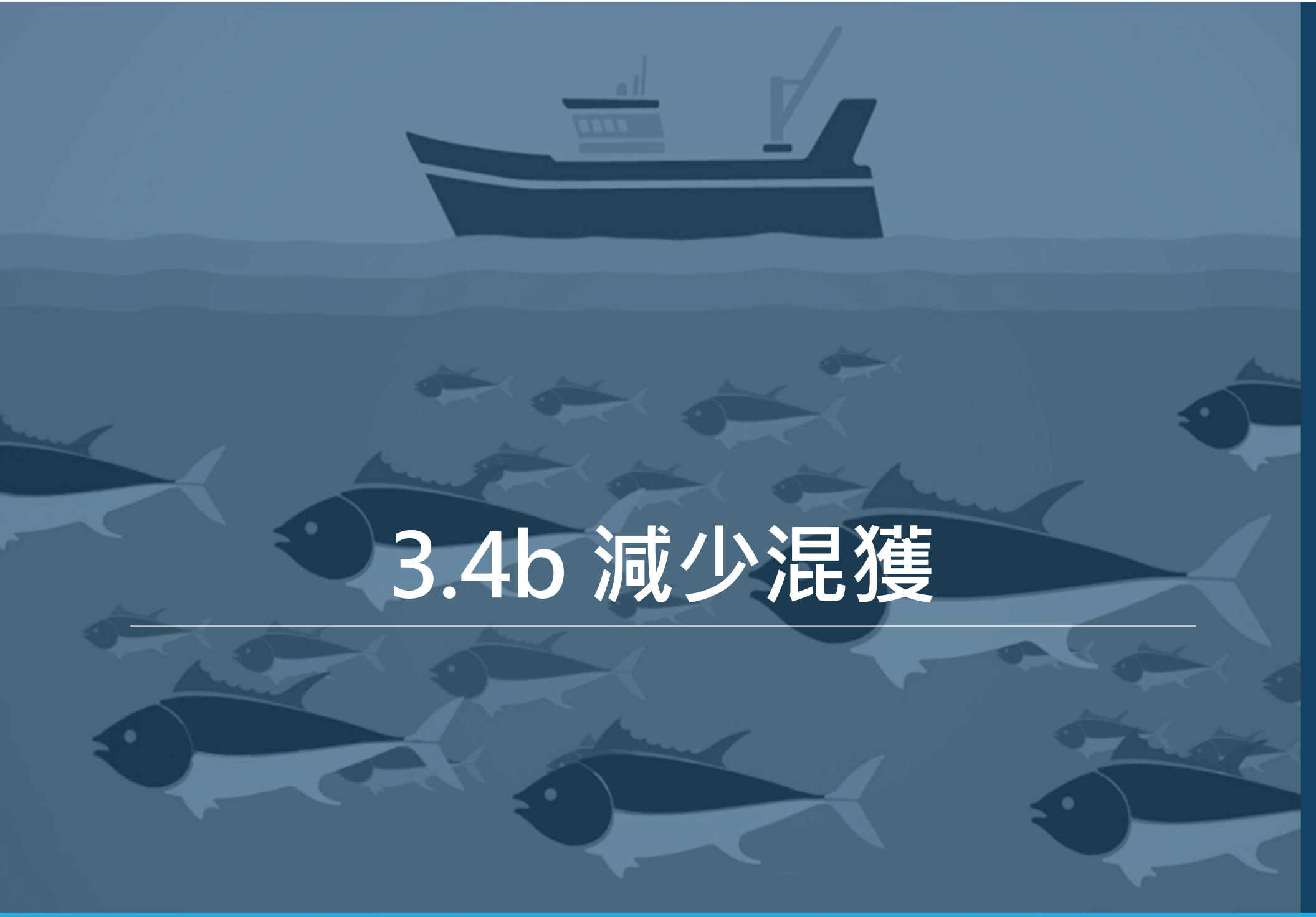

3.4b 減少混獲

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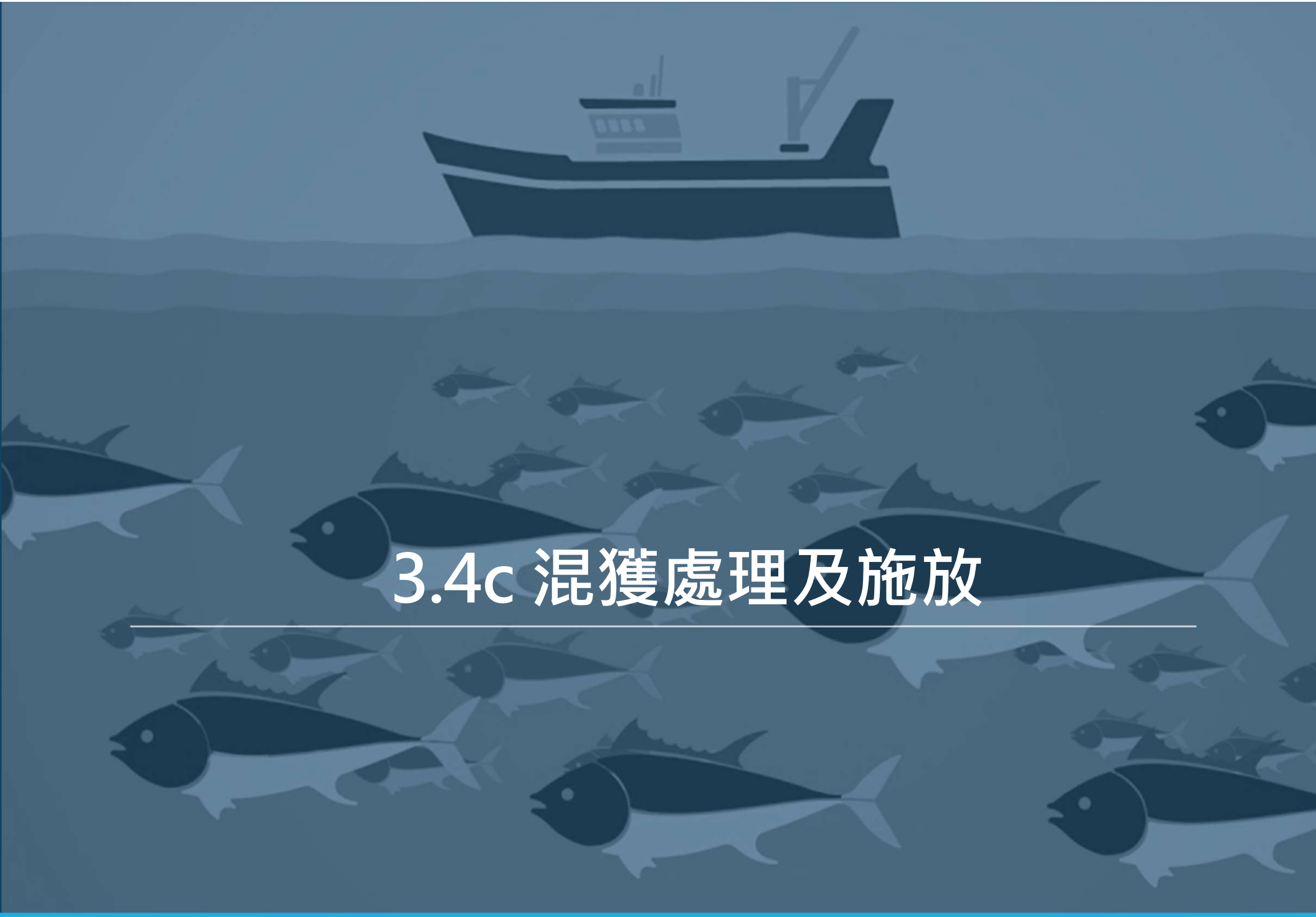
減少海洋哺乳動物混獲

- 海洋哺乳動物可能非常危險，因為它們既強大又不可預測。 不要與鯨魚或海豚同時進入水中。
- 有易於解開誤捕漁網的設備-在甲板上的某個地方，當誤捕鯨魚或海豚時，船員可以很快透過這些設備做出反應。。



3.4c 混獲處理及施放

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減少海洋哺乳動物混獲

- 寫下對動物及其傷害的描述。 如果可能，請拍照。 使用您的物種ID書來嘗試識別動物。 在您的日誌表上記錄所有必需的信息。
- 如果鯨魚或海豚正在吃您捕獲的魚，或者您誤捕了海洋哺乳動物，請在下一次下鉤之前考慮移動100海里或更多。
- 通知船隊內其他船長避免來此區域進行作業。
- 請勿嘗試下水去替誤捕的海洋哺乳動物進行除鉤或解開纏住的網子，因為牠們是相當具有力量的動物。請準備好除鉤工具及剪線工具。

減少海洋哺乳動物混獲

針對小型鯨類/海豚類：

- 避免突然採取行動，不要使用擋板，並且要使動物伸到水面呼吸。
- 如果被纏住了，請使用長柄切線刀，並剪斷盡可能多的線。
- 等到動物離開再開始進行作業。
- 如果被鉤住，將其靠近船隻，但不要拉線將動物帶上船。 如果表面鉤住，則在足夠接近的情況下使用解鉤器。 如果不能，則使用長柄切線器在盡可能接近鉤子處進行切割。

針對大型鯨類：

- 如果動物威脅到船員或船隻安全，請從船上直接斷開繩索。
- 如果認為安全，則將動物盡可能地靠近船隻，並用長柄切割器切斷線，並等待鯨魚移開。

用以減少海洋哺乳動物混獲的工具

- 破壞緩解裝置 (PDMD)
- 最小尺寸單絲支線
- 聲音影響及撥放肉食動物聲音 反光游標
- 減少不好味道的漁餌

4. 永續發展承諾

鯊魚割鰭政策

鯊魚割鰭棄身，是指在海上保留鯊魚鰭並丟棄鯊魚剩餘身體的一種做法。這種做法違背了《糧農組織負責任漁業行為守則》及其《鯊魚養護和管理國際行動計劃》，以及許多其他國際海洋機構的決議，所有這些決議都要求最少化廢物和丟棄物的生產。

捕撈的鯊魚的總數和種類存在很大的不確定性，而鯊魚魚翅也讓這個問題更加麻煩。

ISSF呼籲行業採取禁止魚翅的政策。 除國家法律或RFMO法規所禁止的物種或活著釋放的個體外，所有鮪魚捕撈者均應禁止捕撈鯊魚，並應保留，著陸和回報所有捕獲的完整鯊魚。


ISSF
Guidebook ng Skippers para sa Sustainable Purse Seine Fishing Practices
Ikatlong Edisyon
ISANG PUBLIKASYON NG INTERNATIONAL SEAFOOD SUSTAINABILITY FOUNDATION
ISSF
Guide à l'intention des
ISSF
Skippers' Guidebook to Sustainable Purse Seine Fishing Practices
Third Edition
AN INTERNATIONAL SEAFOOD SUSTAINABILITY FOUNDATION PUBLICATION
ISSF
선장을 위한 지속 가능한 건착망 어업 관행 안내서
삼판
INTERNATIONAL SEAFOOD SUSTAINABILITY FOUNDATION 발행물
ISSF
ISSF
Guía par
prácticas de pesc
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ISSF
持続可能な巻網漁業実践のための船長向けガイドブック
第3版
INTERNATIONAL SEAFOOD SUSTAINABILITY FOUNDATION 出版物
ISSF
Hướng dẫn Thuyền
ể Duy trì các Thực
nh cá Thả lưới vây
Biên soạn lần 3
M CỦA INTERNATIONAL SEAFOOD SUSTAINABILITY FOUNDATION
ISSF
n Skippers tentang
Penangkapan Ikan
kelanjutan dengan
Edisi Ketiga
TERBITAN INTERNATIONAL SEAFOOD SUSTAINABILITY FOUNDATION

6. 廃棄物管理

概述

每年大約有640萬噸垃圾流入海中，其中大部分包括漁具，包裝，塑料原料和便利用品。塑料漁具會導致包括鯨魚，海豚，海鳥，烏龜，鯊魚和海豹在內的海洋動物糾纏並死亡。

估計有80%的垃圾來自陸上，而20%來自船舶。

法規

船上廢棄物&垃圾的管理受《國際防止船舶造成污染公約》及其議定書（稱為MARPOL）的管制。

所有12米以上的船隻都必須在船上標有解釋垃圾法的標誌。 法律要求超過400總噸的大型船隻，必須在船上製定垃圾管理計劃並保留垃圾記錄簿。

廢棄物管理計畫

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

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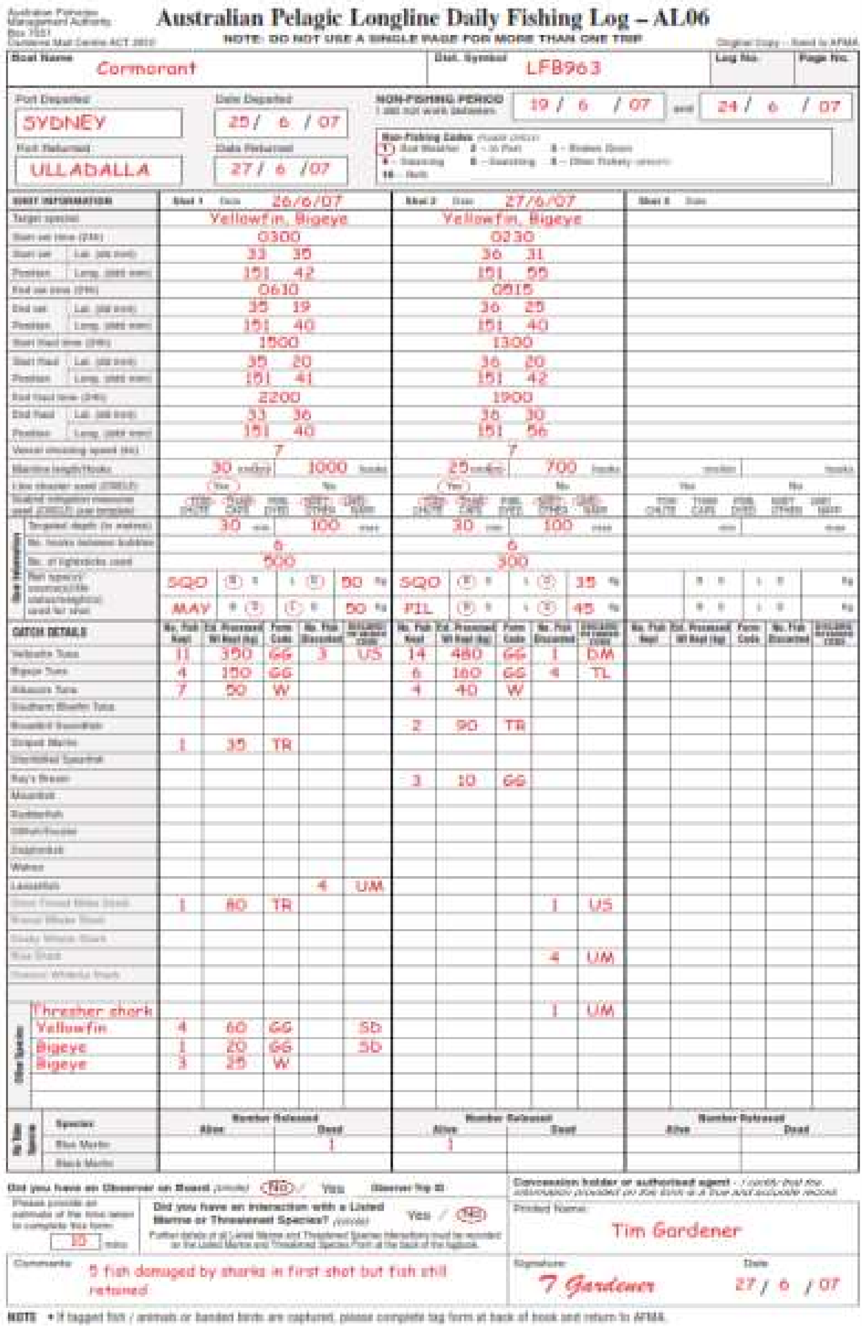
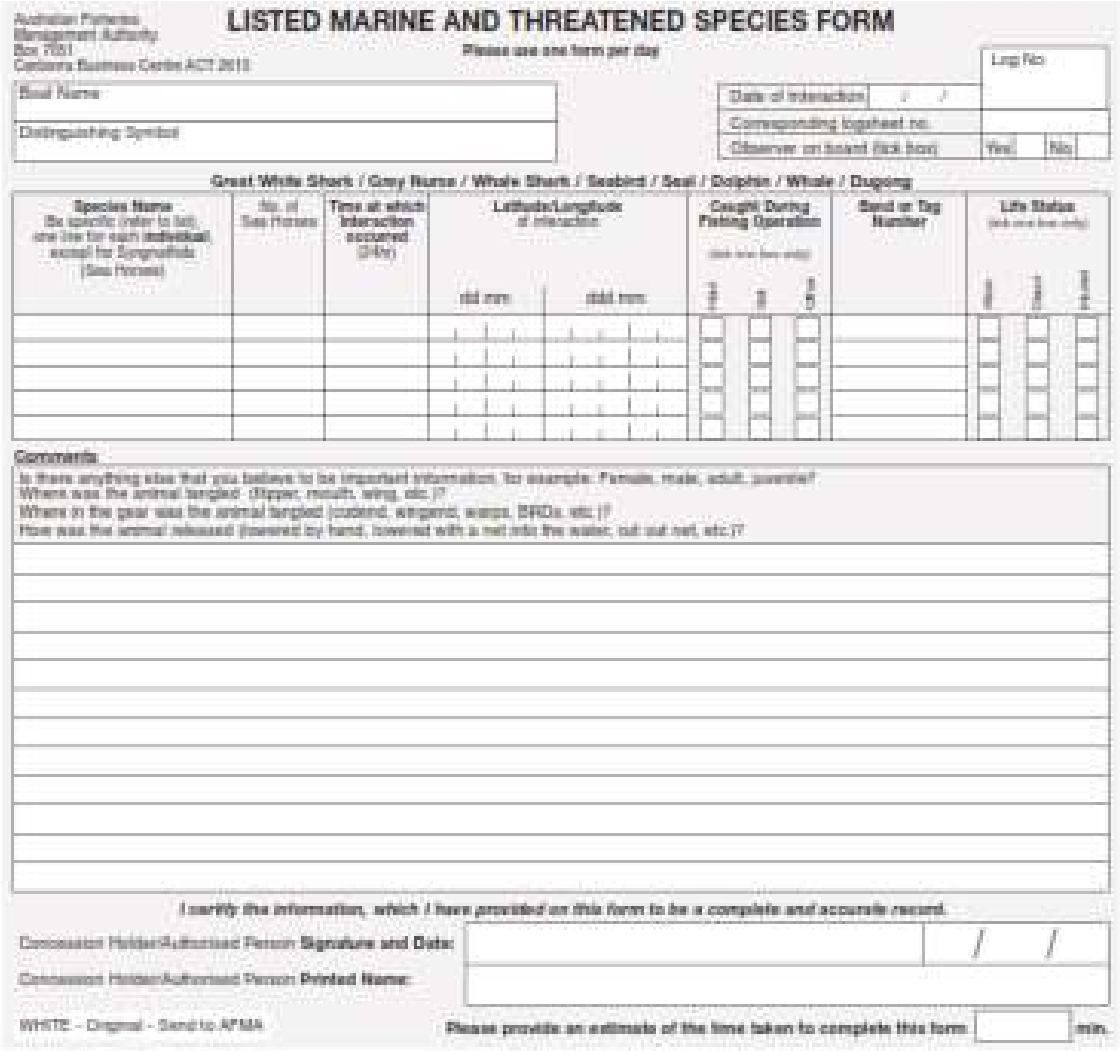
7. 數據紀錄
Data Recording

Fabien Forget

t.evans@keytraceability.com

- 所有數據都必須是正確準確的
- 右邊是很棒的延繩釣數據紀錄範
- 記錄所有捕獲的目標/非目標物
- 針對鯊魚進行記錄
- 針對破壞的紀錄評論
- 下一頁會展示對瀕危物種做紀錄的方式





Australian Fisheries Management Authority
Box 7051
Canberra Business Centre ACT 2610

LISTED MARINE AND THREATENED SPECIES FORM

Please use one form per day

Log No:

Boat Name:

Distinguishing Symbol:

Date of interaction: / /

Corresponding logsheet no.:

Observer on board (tick box): Yes: No:

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

Species Name Be specific (refer to list), one line for each individual, except for Syngnathids (Sea Horses)	No. of Sea Horses	**Time at which interaction occurred** (24hr)	**Latitude/Longitude** of interaction: dd mm	ddd mm	**Caught During Fishing Operation** (tick one box only): Yes	No	Not Sure	**Band or Tag Number**	**Life Status** (tick one box only): Dead	Injured	Unharmed

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 (cutlend, 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.

請問是否有任何疑問?

任何疑問都非常歡迎各位聯絡下列 Email:

Charlie Horsnell & Daniel Yang 楊啟群

c.horsnell@keytraceability.com

d.yang@keytraceability.com