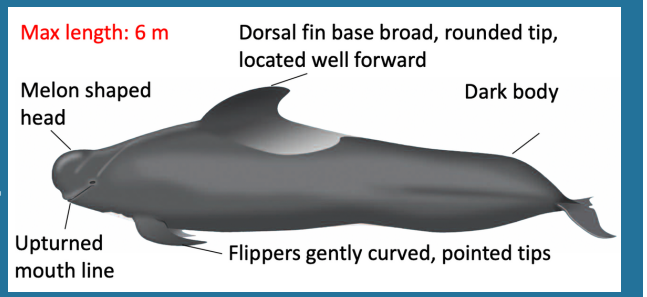
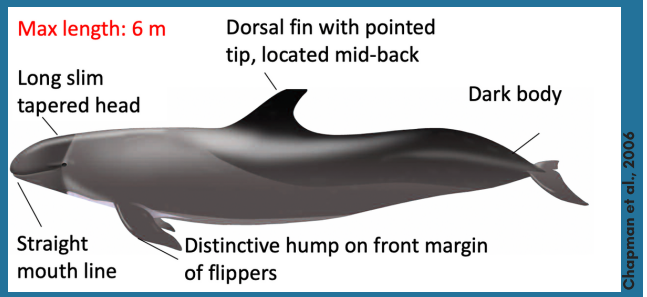
Toothed whale depredation

• Which species are involved?

Short-finned pilot whale



False killer whale



Chapman et al., 2006

• How to discriminate it?

- Tooth marks widely spaced
- Torn fish
- Multiple damaged fish on the same set

• What are the consequences?

On marine mammals: modification of the diet and hunting strategies, injuries and bycatch

On the exploited species: underestimation of stock assessments and landings

On fisheries: monetary loss

PARADEP

Depredation mitigation device for pelagic longline fisheries

Depredation

Depredation is defined as the partial or total removal of fish or bait from fishing gears by marine predators (toothed whales, sharks, squids or birds).

Challenge

Design a physical depredation mitigation device for pelagic longline fisheries targeting tuna and swordfish and impacted by toothed whale depredation.

Budget

750,000€ funded by the European Maritime and Fisheries Fund (Measure #39)

Partners

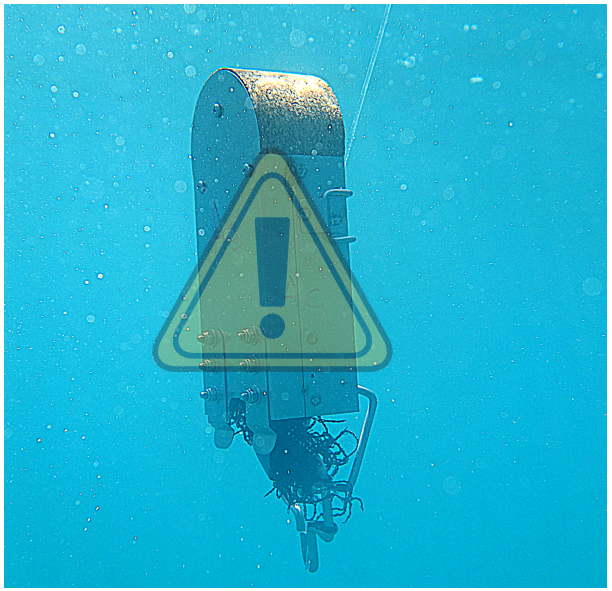
IRD Institut de Recherche pour le Développement France

Centre d'Études Biologiques de Chizé

ENEZ PÊCHE

paradep

Dispositif anti-déprédation pour la pêche palangrière pélagique



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QUALITROPIC le pôle de la bioéconomie tropicale

THE PARADEP DEVICE

Physical depredation mitigation device

Triple protection

Physical protection of the capture
Physical barrier between the fish and the predator

Visual protection of the capture
Hiding of the capture under the net

Passive acoustic protection
Modification of the acoustic signature of the capture

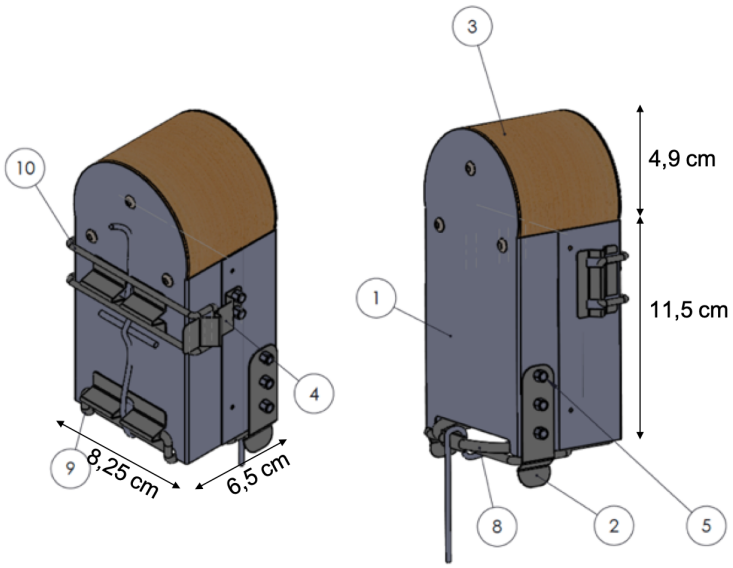
Why choose our device?

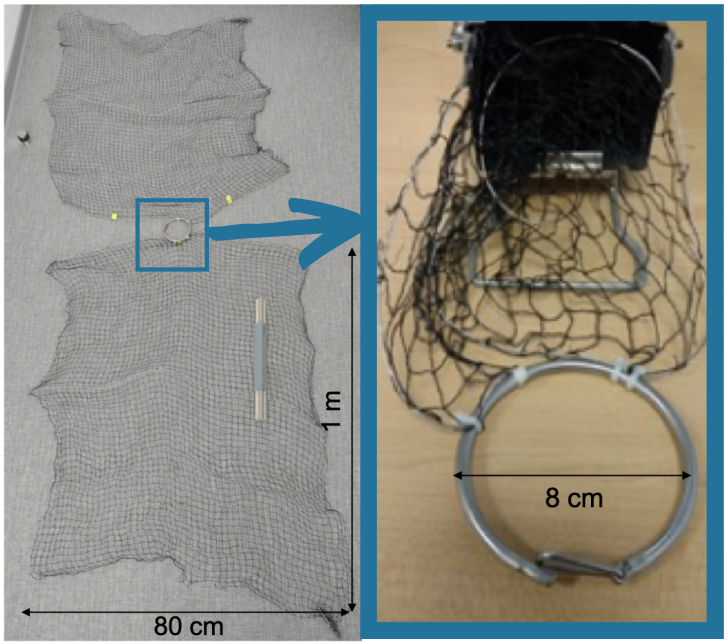
Pelagic fish captured by longlines are protected once they are hooked and until they are hauled

No physical or acoustical harm to predators

Reduction of negative impacts of depredation for fishermen & prevention of negative interactions between marine mammals and fishing gears

Description of the case and the cast net

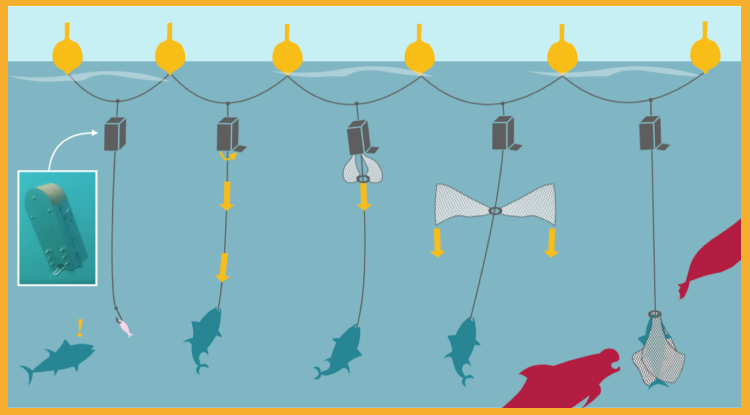




(1) Front of the case, **(2)** Spring blade, **(3)** Cork dome, **(4)** Locking blades, **(5)** Screw, **(8)** Carabiner, **(9)** Locking hook of the carabiner, **(10)** Branchline attachment clip

Cast net: 2 HDPE knitted nets, 16 mm mesh size, 25g/m² density; stainless wires (∅ 0.90 mm) to rigidify the nets
Circular carabiner (∅ 8 cm)

How does the device work?



1. Mounting of the device on the branchline while setting the longline: the branchline is clipped and inserted in the carabiner
2. Automatic triggering when the hooked fih pulls on the branchline, resulting in the unlocking of the spring blades and the release of the cast net
3. Descent of the cast net along the branchline to the hooked fish
4. Deployment of the cast net around the fish