

Coordinated Cetacean
Assessment, Monitoring and
Management Strategy in the
Bay of Biscay and Iberian
Coast sub-region:
Progress update 16-11-22

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ASCOBANS CDG
16-11-22



**CETAM
BICION**



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Implementation period

2021

2022

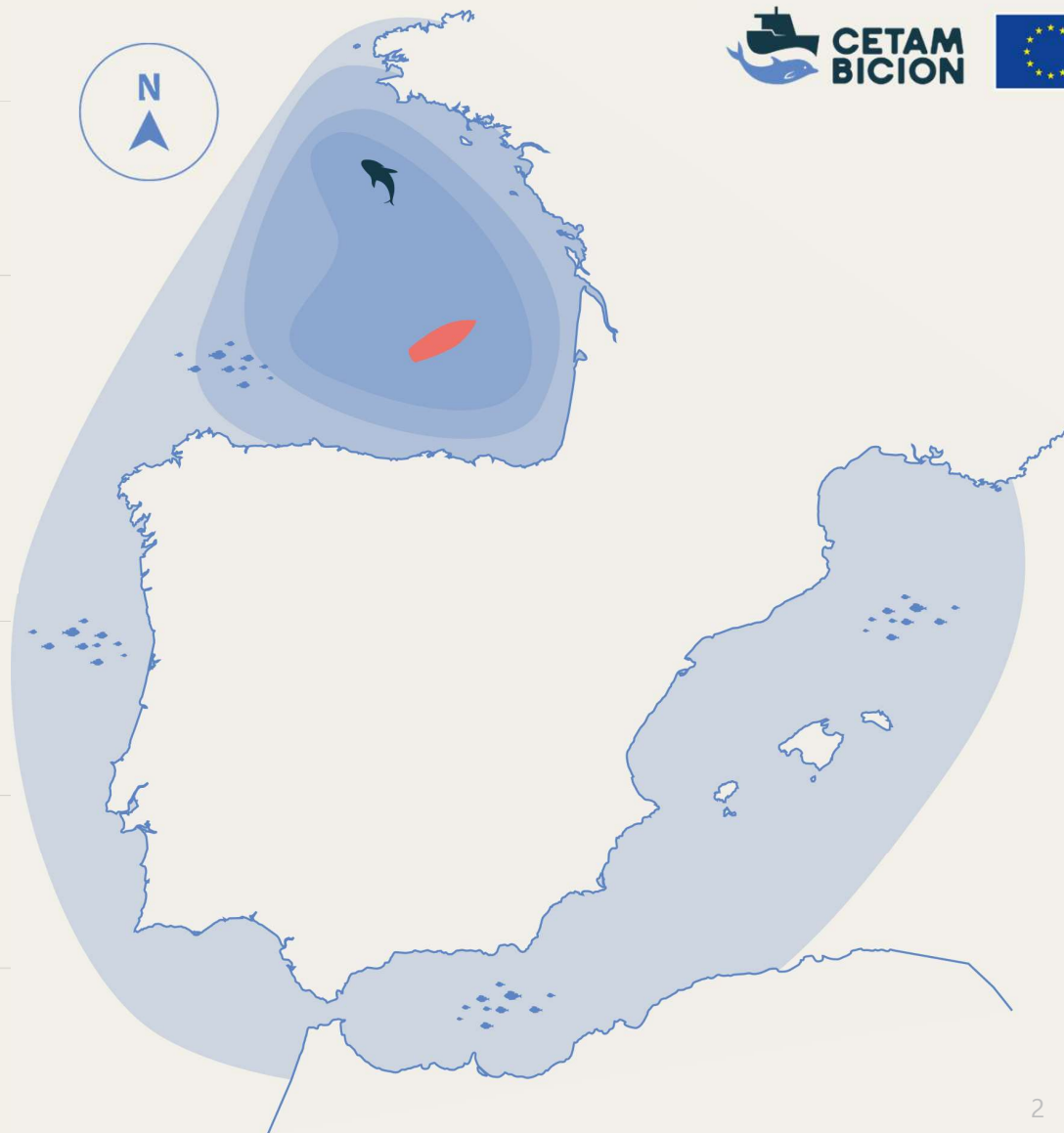
2023



Area of action

Coordination between France, Portugal and Spain is one of the core values of the project.

(but the focus is very much in the Atlantic)



Project structure

Review of MSFD second cycle reports and state-of-the-art for cetaceans

Support the establishment of new coordinated measures considering the main threats affecting the good environmental status of marine mammals in the sub-region.

Proposal of coordinated sub-regional assessment, GES determination and monitoring strategy for cetaceans

Develop the necessary techniques for the regional assessment of cetacean species and their populations.

Proposal of coordinated sub-regional assessment, GES determination and monitoring strategy for cetacean bycatch

Analyse the bycatch sampling schemes currently implemented in this sub-region and propose a common coordinated strategy and protocol for Bay of Biscay and Iberian Coast.

Effectiveness assessment of cetacean bycatch reduction strategies and fishing technical measures proposal

Perform a series of pilot studies onboard commercial fishing vessels and to assess the potential fisheries technical measures to the fisheries management.

Dissemination of results, sectoral participation, and capacity building strategy

Ensure the legacy of the project and its dissemination, transferring the results and deliverables to key end-users and promoting their implementation.

Coordination among all the partners

Assure smooth running and effective management of the project by way of the establishment of clear guidelines and procedures for internal decision-making and communication.



Project timetable

Year	2021												2022								2023			
Semester	1						2						3								4			
Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
WP1																								
Task 1.1						D1.1																		
WP2																								
Task 2.1						D2.1												D2.2						
Task 2.2									WK2.1			D2.2												
Task 2.3																								D2.3
Task 2.4																								D2.4
WP3																								
Task 3.1												D3.1												
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Task 3.3																		D3.3						
Task 3.4																				WK 3.1				D3.4
WP4																								
Task 4.1								D4.1																
Task 4.2																		D4.2						
Task 4.3																		D4.3						
Task 4.4																		D4.4						
Task 4.5																						D4.5		
Task 4.6																					WK 4.1			D4.6
WP5																								
All tasks				D5.1	D5.4	D5.10						D5.9, D5.13												Other WP5 Deliv.
WP6																								
Task 6.1		D6.1	D6.2																					
Task 6.2		D6.3a				D6.3b						D6.3c						D6.3d						D6.3e
Task 6.3																								D6.4
Task 6.4												D6.5												D6.6
Task 6.5																								D6.7, D6.8, D6.9



Overview

- WP1: there are considerable differences between the three countries in how cetaceans have been assessed under the MSFD, in part due to differences in monitoring. Even where the species and the criteria are the same, the assessment methodology often differs.
- WP2: Proposals are under development to harmonize monitoring and assessment for cetaceans.
- WP3: Existing bycatch monitoring and methods for risk assessment have been reviewed. Risk mapping is in progress
- WP4: Existing bycatch reduction measures have been reviewed. In new trials, the utility of Cetacean Excluder Devices in trawls is still unclear; good results have been obtained for “pingers” on purse seines. “Move-on” procedures were explored in a workshop.
- (WP5: Communication, website, stakeholder engagement, etc.)
- (WP6: Coordination via Steering Committee and Advisory Group, Reporting to DGENV, liaison with other projects and international organisations (e.g. ICES, ASCOBANS, OSPAR, IWC))

<https://www.cetambicion-project.eu/technical-workshop-held-establish-cetacean-species-indicators/>

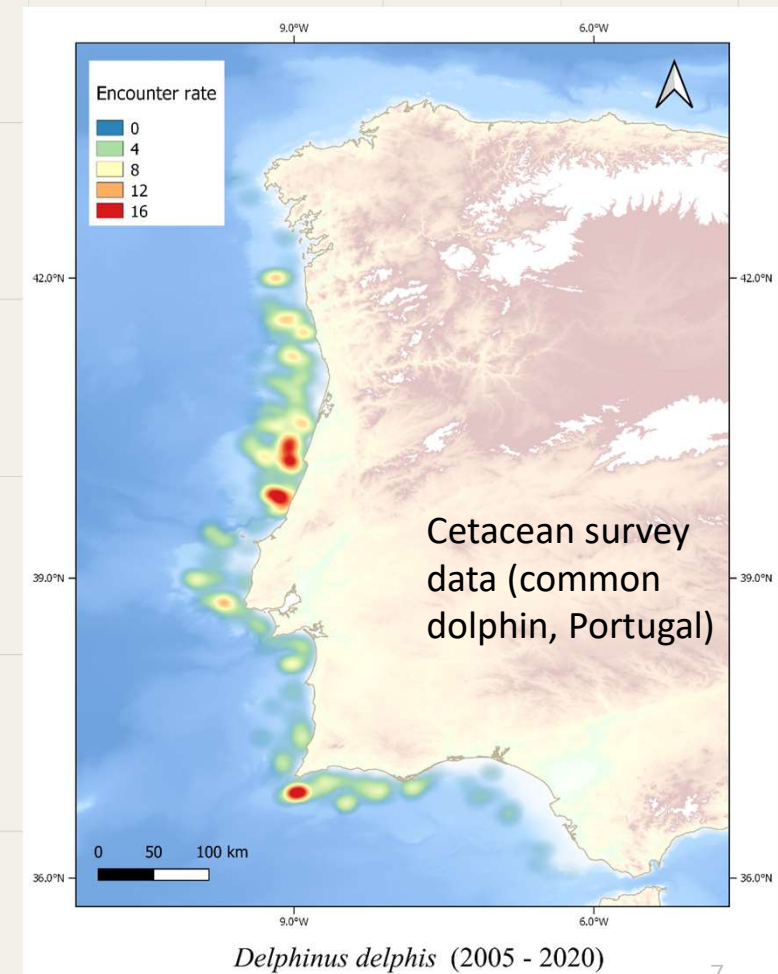


"In the framework of the European project "Coordinated Strategy for the Assessment, Monitoring and Management of Cetaceans in the Bay of Biscay and Iberian Coast sub-region" (CetAMBICion), a technical workshop has been held in Porto (Portugal), aiming at establishing a list of species, indicators, and scales of assessment to propose a coordinated assessment of cetaceans..."

WP3: Proposal of coordinated subregional assessment, GES determination and monitoring strategy for cetacean bycatch: *Task 3.2 Common approach to Bycatch Risk Assessment*

Table: Risk assessment methodologies

Publications	Input data	Output
Currey et al., 2012 Breen et al., 2017 Pennino et al., 2017 Verutes et al., 2020 Evans et al., 2021	<ul style="list-style-type: none"> Fishing effort data (by metier, quarter, year) (e.g. AIS, MMSI, gear / vessel characteristics). Cetacean survey data Environmental data (e.g. sea temperature °C, seabed depth m). 	<ul style="list-style-type: none"> Maps of fishing pressure Maps of cetacean distribution Risk maps (observed and modelled spatio-temporal overlap of cetaceans and fisheries) Mortality estimates
Brown et al., 2015 Temple et al., 2021	<ul style="list-style-type: none"> Biological data on species susceptibility (e.g. age at sexual maturity, calf survival, inter-calving interval) Estimates of fishing pressure (by country) 	<ul style="list-style-type: none"> Risk Assessment based on Productivity Susceptibility Analysis (PSA). Risk assessment maps (large-scale)



WP 4



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WP 4 – Effectiveness assessment of cetacean bycatch reduction strategies and fishing technical measures proposal

Working package focus on a
Proposal for coordinated measures
to address the bycatch of
cetaceans.



Leader: IEO (ES)

Contributors: **ES:** CSIC, AZTI, SGP, SEMA; **PT:** DGRM, UALG, IPMA, ICNF, CIIMAR; **FR:** MTE, OFB, LRUni, DPMA

WP 4 – Effectiveness assessment of cetacean bycatch reduction strategies and fishing technical measures proposal: D4.1. Compilation of the available information on cetacean bycatch reduction devices or measures:

Format

Technical description of each bycatch reduction measure / device for marine mammals

1. General presentation of the measure / device
2. Pilot projects + current knowledge
3. Current regulations around the world
4. Analysis (effectiveness, pros and cons, feasibility)

Main categories of bycatch reduction measures / devices

Improve the fishing gear visibility	Fishing gear modification	Fishing practices modification	Fisheries management	Regulation and economic incentives
Acoustic Deterrent Device (passive or active)	Net modification	Alternatives fishing gear	Spatio-temporal closures	Regulation
Reflectors	Cetacean Excluder Device	Soak time	Triggered closures	Monitoring and reporting
Alert signal	« Smart » fishing gear	Fishing gear depth	« Move-on rule »	Economic leverage
Colour net change		Good practices	Forecasting closures	
Net illumination				

There are SEVERAL solutions available which, especially if applied simultaneously, could significantly reduce marine mammal bycatch





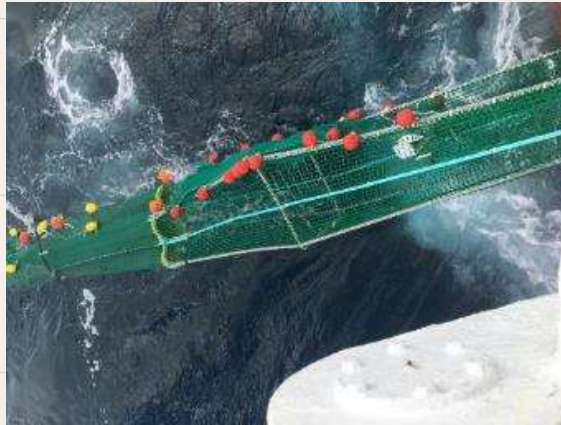
Task 4.2. Pilot project: Trawling (CEDs and pingers)



Objectives

Test of Cetacean Excluder Devices (CED) and pingers in trawling fisheries

Reduce common dolphin bycatch



Field work

- ✓ Two bottom pair trawlers in NW Spanish waters
- ✓ Trials with a Cetacean Excluder Device CED (one month in winter, one month in summer)
- ✓ Pingers used in alternate hauls (Spanish regulation requires 2-3 pingers mounted always on the headline)
- ✓ Trial data are reported by onboard observers
- ✓ Design of logbooks for self-reporting by fishers
- ✓ Field work at sea began in February 2022
- ✓ Changes in CED in March. New onboard trials in March-May and September

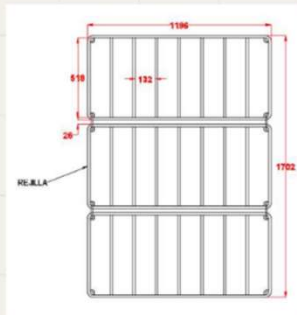
Task 4.2. Pilot project: Trawling (CEDs and pingers)

WP 4



PILOT TRIALS

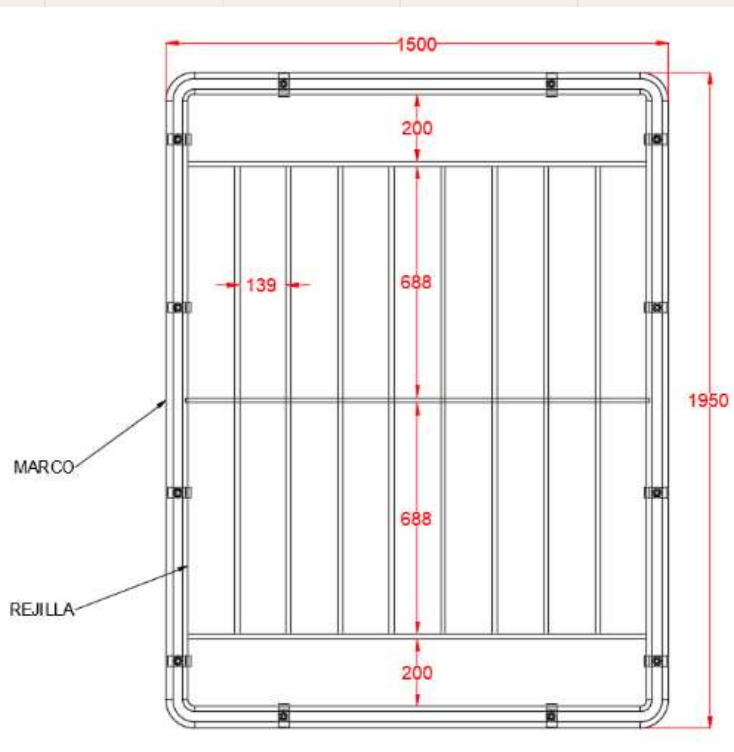
COD_Survey	Survey	Start date	Ending date	Hauls with CED	Hauls without CED	Total hauls
CETAMBICION0222	1	22/02/2022	24/02/2022	3	1	4
CETAMBICION0322	2	28/03/2022	01/04/2022	7	7	14
CETAMBICION0522	3	16/05/2022	20/05/2022	4	1	5
DESCARSEL0922	4	01/09/2022	12/09/2022	13	11	24





Task 4.2. Pilot project: Trawling (CEDs and pingers)

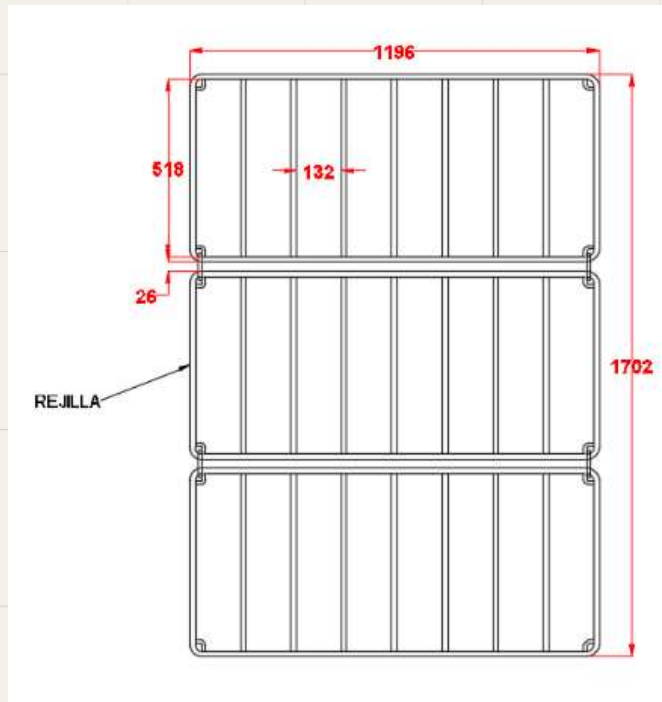
Rigid device to exclude cetaceans: design with one metal panel





Task 4.2. Pilot project: Trawling (CEDs and pingers)

Semi-rigid device to exclude dolphins: design with 3 articulated metal panels



Task 4.2. Pilot project: Trawling (CEDs and pingers)



RESULTS_PT B

CETACEAN INTERACTIONS

Harbor	Year	Survey	Target species	Total hauls	Total hauls with interactions	% of hauls with interaction	Nº total individuals	Cetacean species	Behaviour	Moment of interaction
Burela	2022	CETAMBICION022 2	<i>Micromesistius poutassou</i>	4	0	0	0	0	0	0
Burela	2022	CETAMBICION032 2	<i>Scomber scombrus</i>	14	6	42,86	38	Pilot whale (<i>Globicephala melas</i>)	hunting	tack 83,33 %, launch 16,67 %
					4	28,57	45	Bottlenose Dolphin (<i>Tursiops truncatus</i>)	hunting, jumping and fast swim	tack 100 %
					1	7,14	2	Common Dolphin (<i>Delphinus delphis</i>)	jumping	Tack 100 %
A Coruña	2022	CETAMBICION052 2	<i>Micromesistius poutassou</i>	5	1	20	2	Pilot whale (<i>Globicephala melas</i>)	Normal swimming, hunting	Trawling 100%
					1	20	1	Minke whale (<i>Balaenoptera acutorostrata</i>)	Fast swimming	Trawling 100 %

Task 4.2. Pilot project: Trawling (CEDs and pingers)

RESULTS_PTB

CETACEAN INTERACTION



Pilot whales looking round the fishing gear during hauling



Bottlenose dolphin interaction with fishing trawler

Task 4.2. Pilot project: Trawling (CEDs and pingers)

RESULTS_PTB

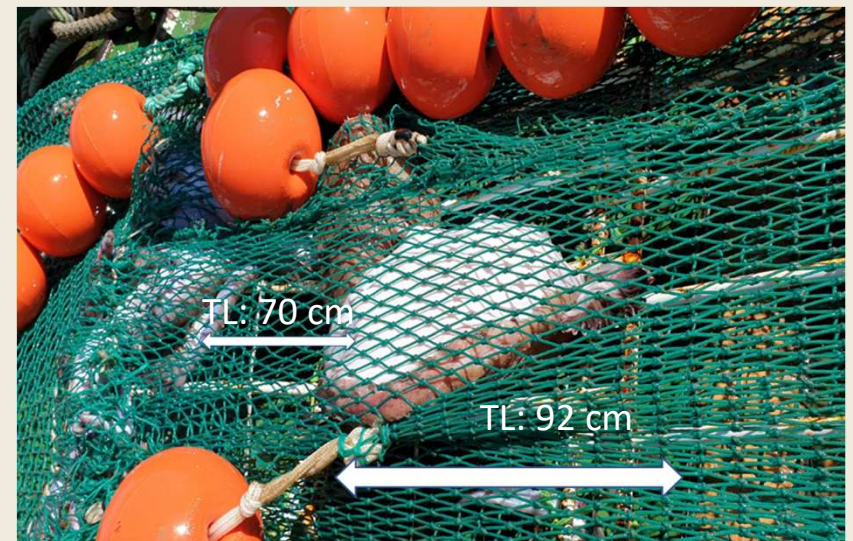
BYCATCH SPECIES: sharks, rays and large fish

Several species were retained on the CED device cover, evidencing the effectiveness of the device to separate and release unwanted species:

- Porgeable shark (*Lamna nasus*). This species is classify as 'Critically Endangered' by the IUCN Sandy ray (*Raja circularis*).
- Monkfish (*Lophius piscatorius*). Two large size fish were retained by the grid.



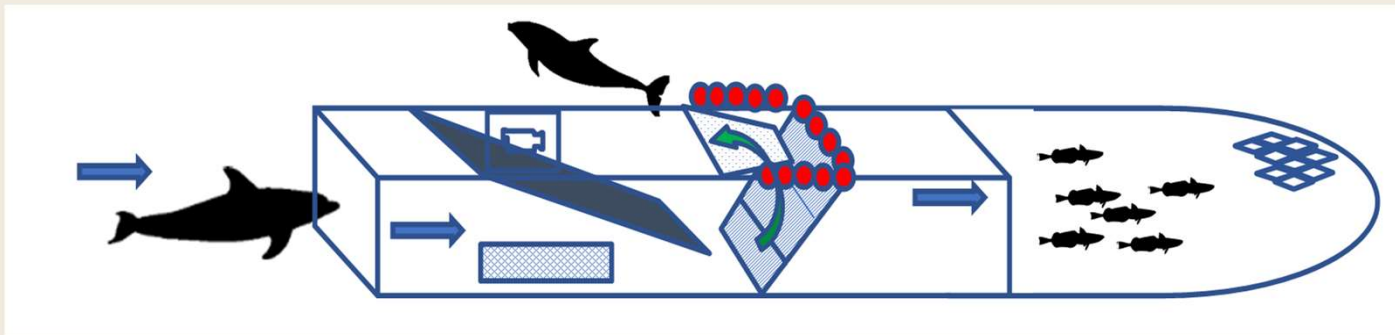
Porgeable shark (*Lamna nasus*) bycaught



Monkfish (*Lophius piscatorius*) bycaught

CONCLUSIONS

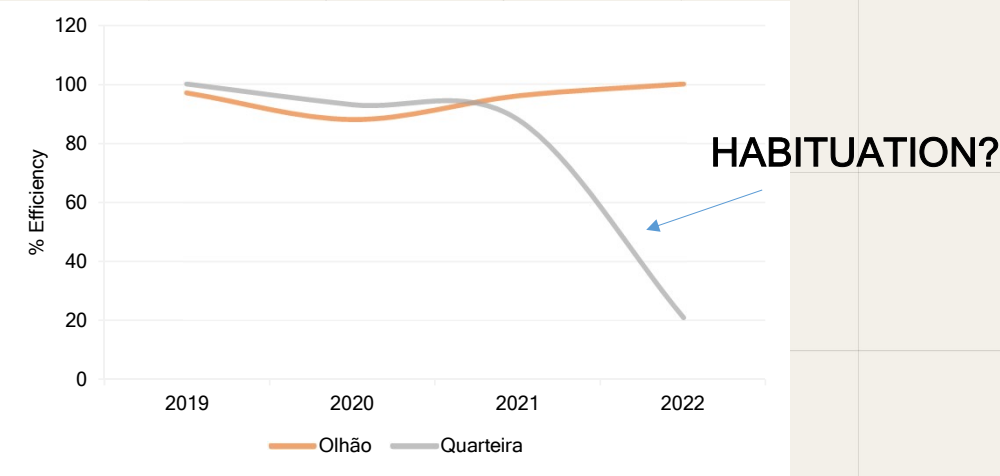
- The preliminary results of the tests are promising.
- No differences were seen in target fish catch between gear with CED and normal gear.
- The rigid CED makes it difficult to handle the net on deck (a potential safety risk).
- The semi-flexible CED is more suitable for handling onboard.
- Further tests are needed to quantify the exit window loss and estimate the economic losses.
- A greater collaboration of the fishing fleet is necessary to carry out the tests.
- CEDs are useful to prevent bycatch of elasmobranchs and other large species.
- Four species of cetaceans observed in the fishing area; no accidental catches of cetaceans
- More tests are needed to obtain more robust results in relation to cetacean bycatch.




Task 4.3. Pilot project:
Fixed and seine nets
("pingers"; Portugal)

Results: Mitigation in bottom set-nets: alarm efficiency (Marçalo et al. (in prep.))

Effect on depredation by bottlenose dolphins



(No) effect on target species catch rate



Port	Treatment	CPUE (Ave)	CPUE (Std)	Effect of alarm
Olhão	Control	8.6	6.5	Mann-Whitney U Test NS p > 0.05
	Alarm	9.0	6.9	
Quarteira	Control	12.3	8.1	Mann-Whitney U Test NS p > 0.05
	Alarm	12.2	7.7	

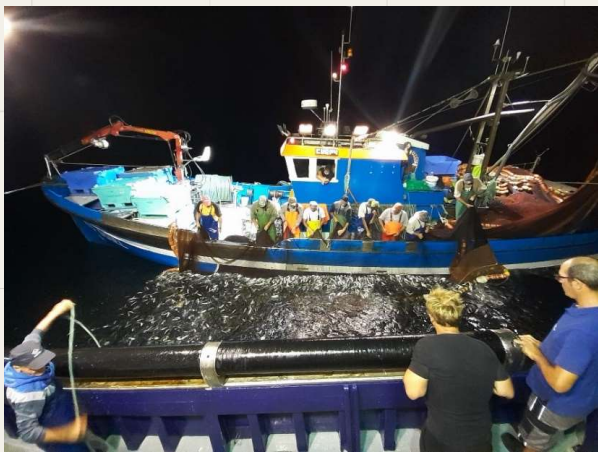
Efficiency = $\frac{\text{Number of hauls with alarms with no attacks}}{\text{Total number of hauls with alarms}}$ = 85.4% ± 26.4%

Task 4.3. Pilot project:
Fixed and seine nets
("pingers"; Portugal)

Projecto Mar2020 – iNOVPESCA (2017-2021)
Projeto CetAMBICion (2021-2023)

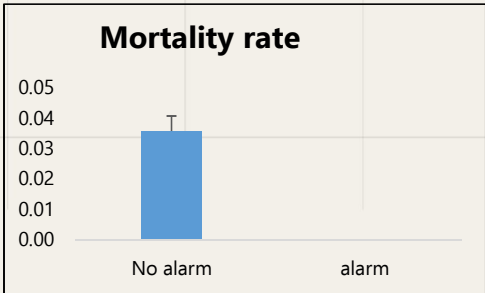
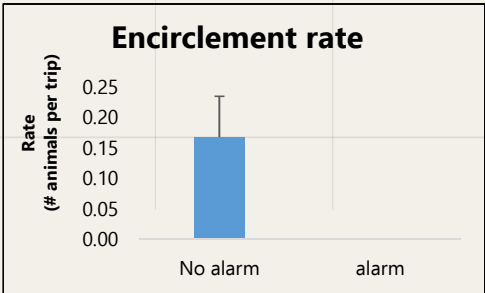
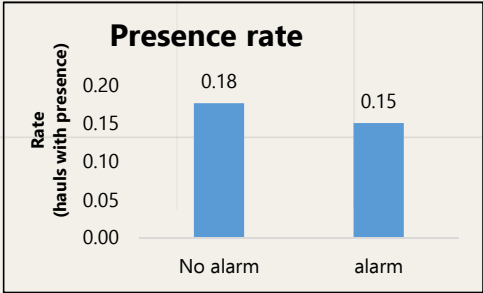


Results: Mitigation Purse Seine (2020-2021) Marçalo et al. (in prep.)



Category	Monitoring scheme	N Hauls	N hauls w capture	N animals captured	N animals dead	% Survival	Cetacean species
Control	Observer + Logbook	271	17	37	8	78	<i>Delphinus delphis</i>
Alarm		238	0	0	-	-	

- Incidental captures observed only in control (not during use of alarms)
- 100% common dolphin *Delphinus delphis*
- Many captured animals are successfully released



Task 4.3. Pilot project: Fixed and seine nets (pingers)

Take home message about mitigation in Southern PT fisheries

iNOVPESCA



FIXED NETS

- ✦ Economical and technological challenge for the PT net fisheries scenario; Habituation is a side effect to be monitored; Fishers still happy, but need financial support.
- ✦ Good practices are the best option (follow soaking times, gear length, avoid areas of high bottlenose densities, use alarms at a seasonal basis in métiers with depredation)



PURSE SEINE

- ✦ Mitigating common dolphin bycatch with DDDs seems promising & economically viable



Integrated knowledge between **fishers** and **scientists** + other stakeholders paves the way to **sustainability**





Task 4.4. Feasibility study of using 'move-on' rules to mitigate cetaceans bycatch

Workshop

Objectives

- Study feasibility of management by "move-on rules" to reduce incidental catches of common dolphin in Bay of Biscay
- Joint reflection on SWOT analysis of this approach (Strengths, Weaknesses, Opportunities, Threats)

Questions :

- ✓ Identify requirements to implement a voluntary move-on rule in Biscay
 - ✓ What rules? (decision support, move-on during observation or capture, ...)
 - ✓ Which gear would be affected?
 - ✓ Could the Obsenpêche tool be adapted for this type of measurement?
- ✓ SWOT analysis to be completed
 - ✓ « Name one advantage/opportunity and one disadvantage/threat »



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- Advisory Board members,
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