

# On-board cameras to monitor marine mammal bycatch?

## The OBSCAMe project on gillnetters in the Bay of Biscay



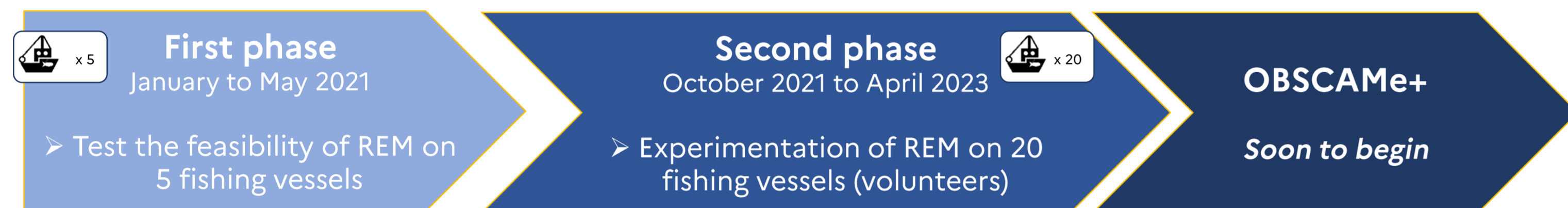
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### Context

- **Intensification of strandings of small cetaceans** with evidence of bycatch since 2016/2017 in the Bay of Biscay
  - *Bycatch estimates of common dolphin for years 2019-2021 based on stranding data (all gears): 9040 individuals per year (ICES, 2023<sup>1</sup>)*
  - *National Marine Strategy Framework : good ecological status not achieved due to bycatch for harbour porpoise and common dolphin in the Bay of Biscay (Sptiz et al., 2018<sup>2</sup>)*
- **Insufficient data from « traditional » monitoring systems** especially on gillnetters (on-board observers and fishermen declarations) in order to fully understand level and factors influencing bycatch



### Stages of the project



### ... and perspectives

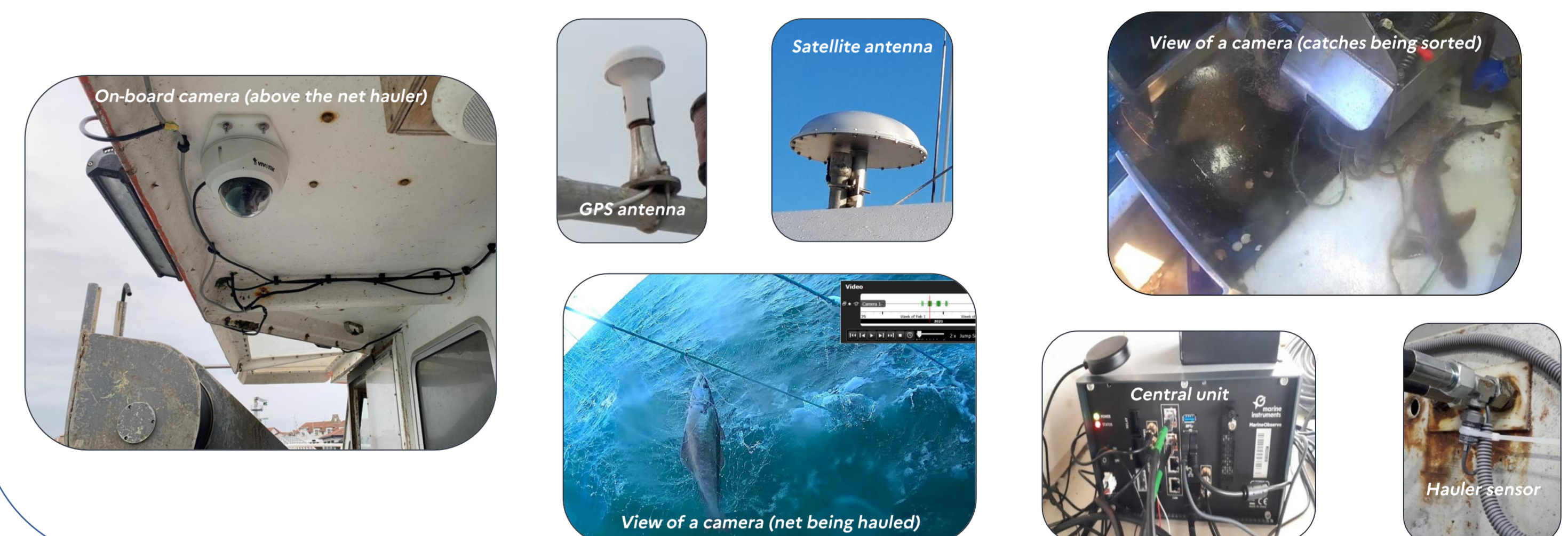
- ❑ To extend the monitoring to other marine protected species (turtles, birds, sturgeon and marine mammals) and to a hundred of gillnetters at the end of 2023
- ❑ To evaluate the effectiveness of technical devices (such as pingers) with REM
- ❑ To develop with IFREMER an automated algorithm to facilitate video processing → international scientific collaboration would be useful

### The OBSCAMe project

**Remote Electroning Monitoring (REM)** on fishing vessels (**gillnetters**) in order to

- reinforce the observation of marine mammal bycatches ;
- test the scientific contributions of REM observations to better understand the interactions between gillnetters and marine mammals in the Bay of Biscay ;

Illustrations of the REM system © OFB – OBSCAMe



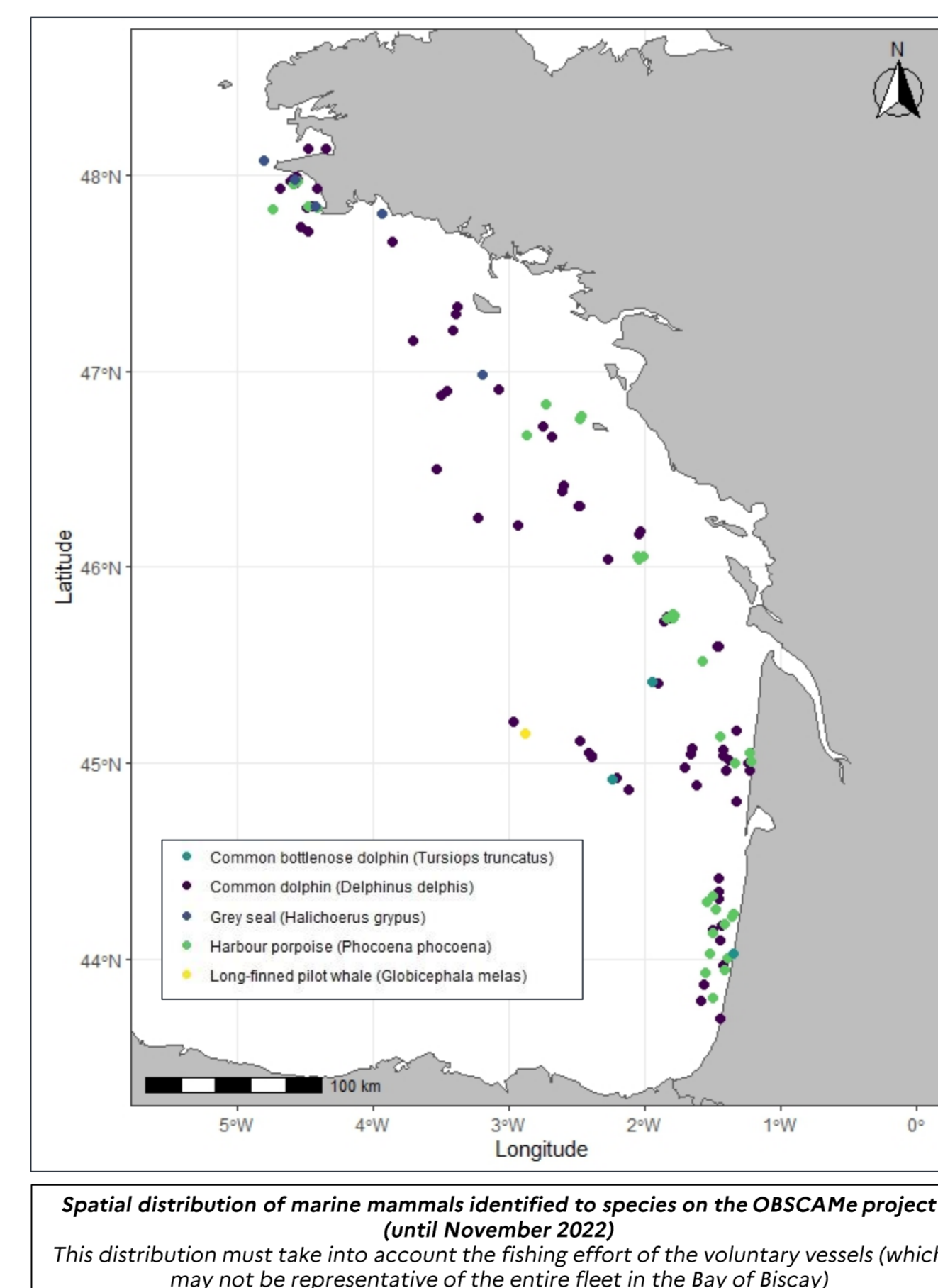
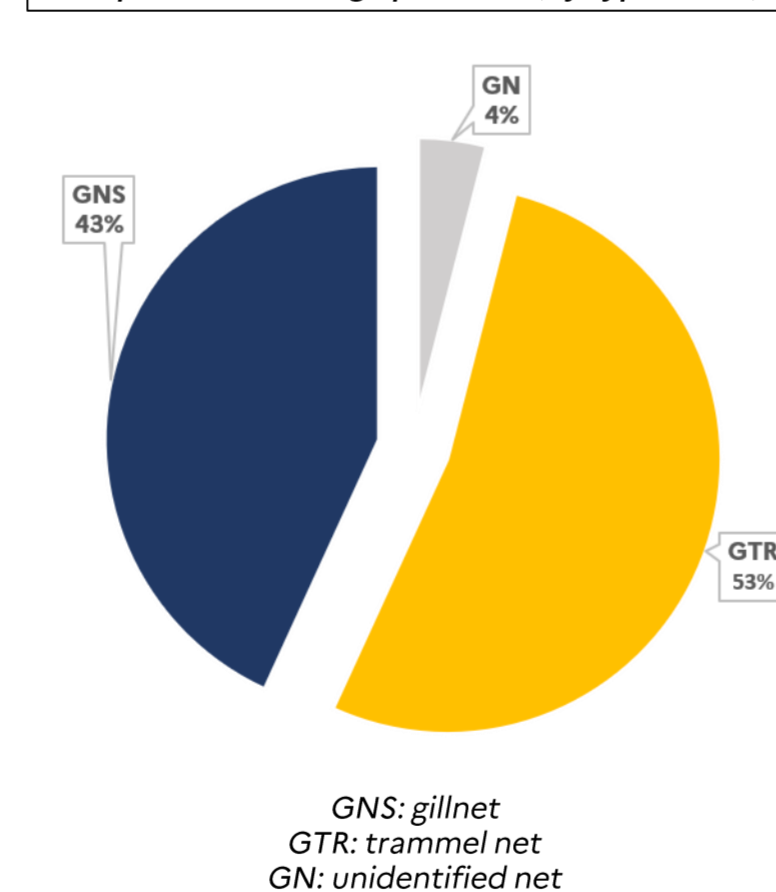
### First results on bycatch (results from January 2021 to November 2022)

20 vessels (volunteers)	> 3 760 days at sea observed **	> 11 500 fishing operations observed (nets)	> 15 600 fishing hours viewed (hauling)	136 marine mammals identified
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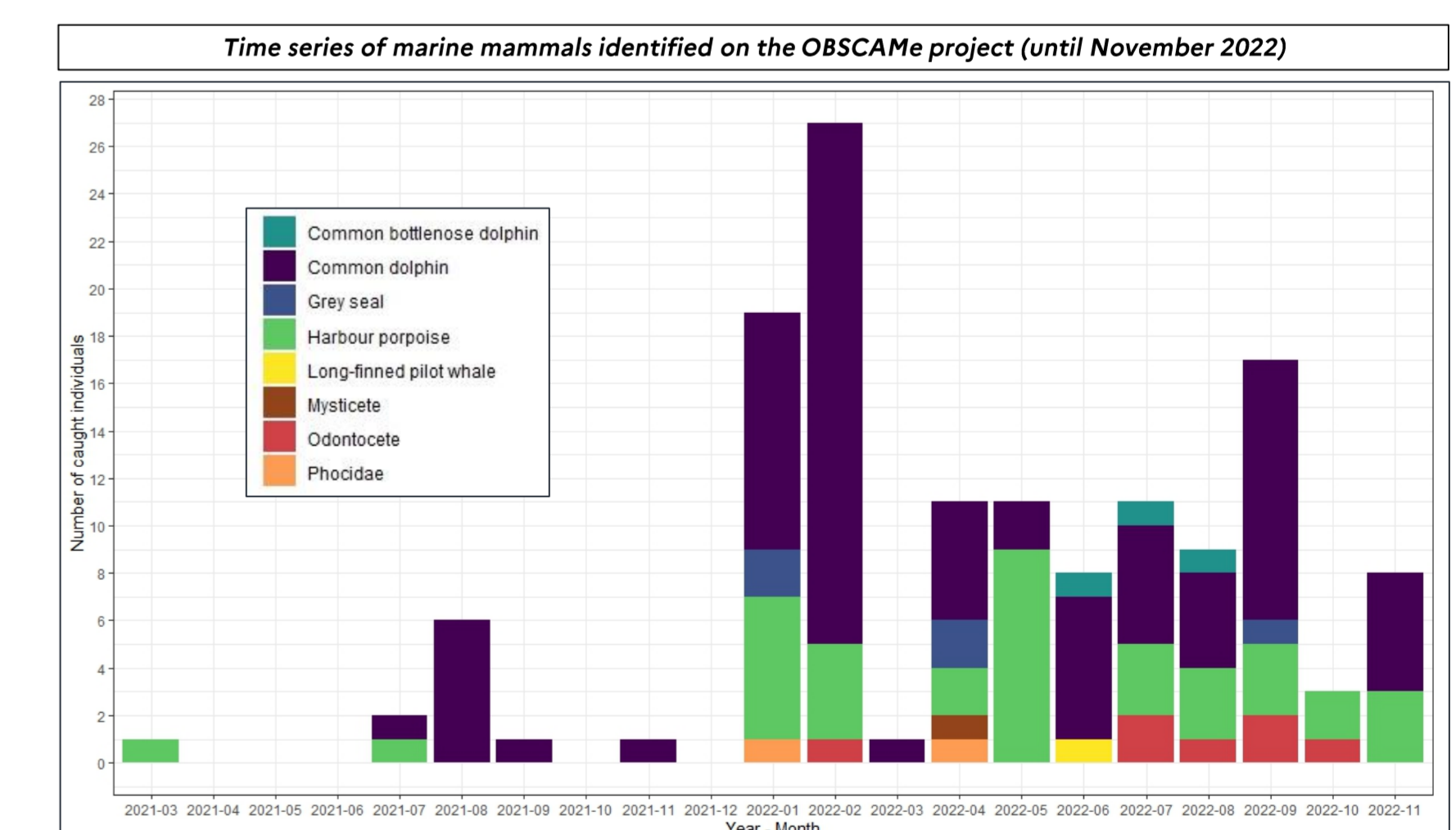
\* Among them, one was shipwrecked  
\*\* Days at sea = number of calendar days on which fishing trips (with nets) are carried out  
\*\*\* Very decomposed individual, probably not a bycatch

Group or species	Number of individuals
Mysticete ***	1
Odontocete	7
Common dolphin ( <i>Delphinus delphis</i> )	80
Harbour porpoise ( <i>Phocoena phocoena</i> )	37
Common bottlenose dolphin ( <i>Tursiops truncatus</i> )	3
Long-finned pilot whale ( <i>Globicephala melas</i> )	1
Phocidae	2
Grey seal ( <i>Halichoerus grypus</i> )	5

Proportion of fishing operations (by type of net)



- Most of marine mammals were **fresh carcasses (88%)** and were caught by **GTR (77%)**. GTR represents 53% of the fishing operations observed ;
- About 20% of the carcasses fell into the water and are not brought on board (may not have been observed on board by the crew or an observer) ;
- 17 vessels (out of 20) are involved in these bycatches (from 13% to 1% depending on the vessel) ;
- **Bycatch of other species** (seabirds, sturgeons, sharks, rays) have also been observed. Those are not analysed since the project is focusing on marine mammals.



### ... and on the interest of on-board cameras

#### Contributions

- REM validated on those fishing vessels with a good species identification rate for marine mammals (95%) ;
- Fishing activity monitored all the time: unlikely to miss a bycatch (unless technical problem) ;
- Existing database for the development of an automated algorithm to facilitate video processing.

#### and challenges

- Difficulties with remote video transfer for offshore fishing vessels ;
- Difficulties in videos analysis during night fishing activity due to light overexposure ;
- Unnecessary video volume (activation of the camera when vessels at anchor, adrift, underway, etc.).

1. ICES. 2023. EU additional request on mitigation measures to reduce by-catches of common dolphin (*Delphinus delphis*) in the Bay of Biscay. In Report of the ICES Advisory Committee, 2023. ICES Advice 2023, sr.2023.01. <https://doi.org/10.17895/ices.advice.21946634>  
2. Spitz J., Peltier H., Authier M., 2018. Évaluation du descripteur 1 « Biodiversité - Mammifères marins » en France Métropolitaine. Rapport scientifique pour l'évaluation 2018 au titre de la DCSMM. Observatoire PELAGIS – UMS 3462, Université de La Rochelle / CNRS, 170 PAGES.