

# Assessing the interactions between dolphins and bottom trawlers and bycatch occurrence off the Catalan coast (Western Mediterranean)



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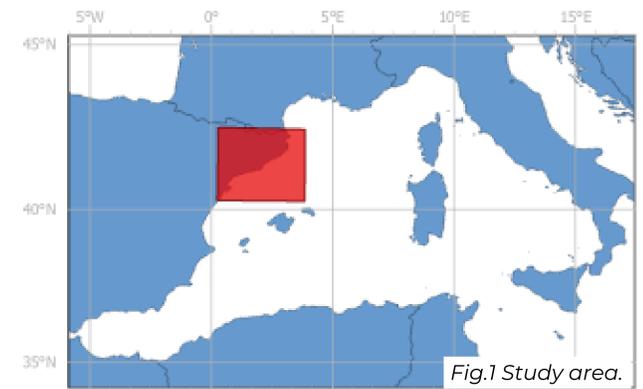
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## INTRODUCTION

Interaction with fisheries has been described as the most frequent cause of death among striped (*Stenella coeruleoalba*) and common bottlenose dolphins (*Tursiops truncatus*) necropsied after having stranded along the Catalan coast (North-East Spain). The coastal waters of Catalonia are an important habitat for common bottlenose dolphins, as well as a remarkable fishing ground where interactions between dolphins and bottom trawlers have been observed regularly. However, the impact that these interactions have on both fishing operations and dolphin population in this area is still unknown.



## METHODOLOGY

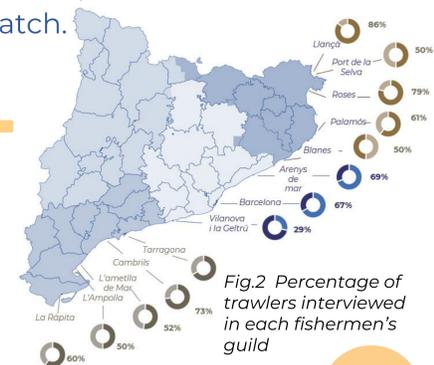
In order to gather information on dolphin and trawler interactions and bycatch occurrence in this area, face to face interviews with crew members of Catalan fishing trawlers were conducted during August and September 2021. Interviews contained 27 questions divided in 4 sections: personal data, fishing activity, sighting frequency /species knowledge, and dolphin interaction and bycatch.

## RESULTS

**59 %** of Catalonia's trawling fleet interviewed → **125** trawlers in total

### According to fishermen:

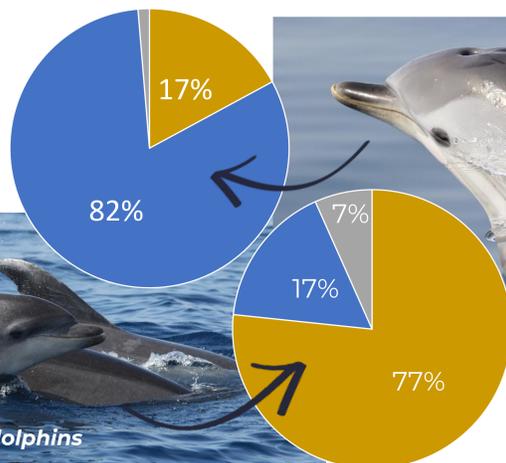
- The most frequently observed species regardless of the fishing area is the bottlenose dolphin.
- Dolphins are present throughout the year and fishermen have not detected a decline in dolphin sightings over the last years.



## INTERACTIONS

- 100% of the fishermen reported interactions with dolphins.**

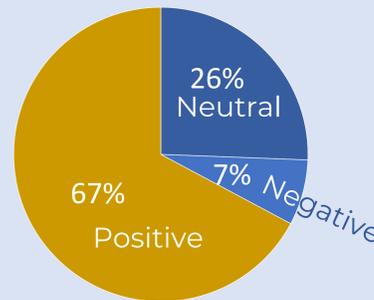
### Dolphin behaviour during interactions:



Legend:  
■ Swim nearby  
■ Swim nearby & feed in nets  
■ Feed in nets

- According to fishermen, interactions have remained stable in most of the fishing grounds, except in the north region, where they have noticed an increase.

### Type of interaction:



### 93% Non-negative:

Fishermen consider that dolphin's presence help them catch more fish, entertain them or do not have any positive or negative effect.

**7% Negative:** Some fishermen catch less fish and octopus when dolphins are in the area.

## BYCATCH

**91%** Have **accidentally caught** dolphins in their nets.

Of which

**27%** Have caught at least one dolphin during their working life either recently dead or alive. Just 8% of them have ever caught an individual alive.

### Number of bycatches during fishermen's work life:

Number of dolphins bycaught	% of fishermen
0	9%
1	15%
2-3	25%
<b>4-10</b>	<b>37%</b>
>10	14%

### Causes of dolphin bycatch according to fishermen:

- 63%** say that the dolphin was already dead at the bottom due to other causes and then caught by the fishing net.
- 33%** think that the dolphin swam inside the net, did not know how to get out and got entangled (8% of them due to the sick condition of the animal)
- 4%** do not know the reason

## CONCLUSIONS

- There is an **overlap between fishermen and dolphin habitat along the Catalan coast.**
- Interactions** are **mainly** considered **not negative** by fishermen.
- Bottlenose dolphins feed** in the nets of **fishing trawlers.**
- Dolphins **do not damage** the trawling **fishing gear** with their interactions.
- Dolphin **bycatch happens in relatively small numbers** in the study area despite the high level of interaction.
- Collaboration between scientists and fishermen is essential** to understand better the impact of the interactions as well as for finding mitigation measures. An **observer program** for this area would help to estimate the impact of dolphin bycatch on its population.

**97%** of the fishermen usually throw the dolphin caught accidentally into the water due to ignorance and /or fear of repercussions if they would bring it to land.

