



Natàlia Amigó Chaparro
nataliaamigo@submon.org

Friends or Foes? The evolving relationship between fisheries and dolphins in northern Catalonia (NW Mediterranean)

Amigó N.¹, Álvarez de Quevedo I.², San Roman D.¹, Chicote C.A.¹

(1) SUBMON - Conservation, study and awareness of the marine environment, Barcelona, Spain.
(2) BETA Tech Center, University of Vic-Central University of Catalonia (UVic-UCC), Vic, Spain.



INTRODUCTION

Bottlenose dolphins (*Tursiops truncatus*) frequently **interact with bottom trawlers** in the coastal waters of **Catalonia (NW Mediterranean)**. To assess the **nature and impact of these interactions**, SUBMON conducted face-to-face interviews with trawling skippers in 2018 and 2021. Recently, reports from fishing guilds in **southern Catalonia** have highlighted **increased dolphin interactions with trammel net fisheries**.

A **new round of interviews** was conducted in 2024–2025 with **bottom trawler fleets** across northern and southern Catalonia to evaluate changes in interaction patterns. To address the emerging concerns, the survey was also expanded to include the **artisanal fleet operating with trammel nets**.

Here, we present preliminary findings from this updated and expanded assessment.

METHODOLOGY

In autumn 2024 and spring 2025, **face-to-face interviews** were conducted with 38 **trawler** and 34 **trammel net** fishermen (**skippers**) along the Catalan coast (Figures 1 and 2).

	Trawlers	Trammel nets
North (Girona's province)	35% (n=20)	30% (n=12)
South (Tarragona's province)	21% (n=18)	19% (n=22)

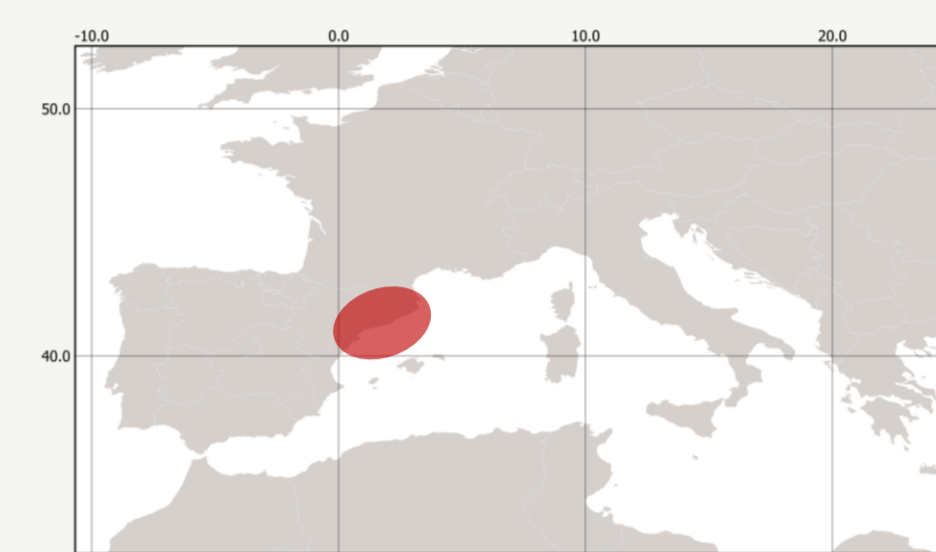


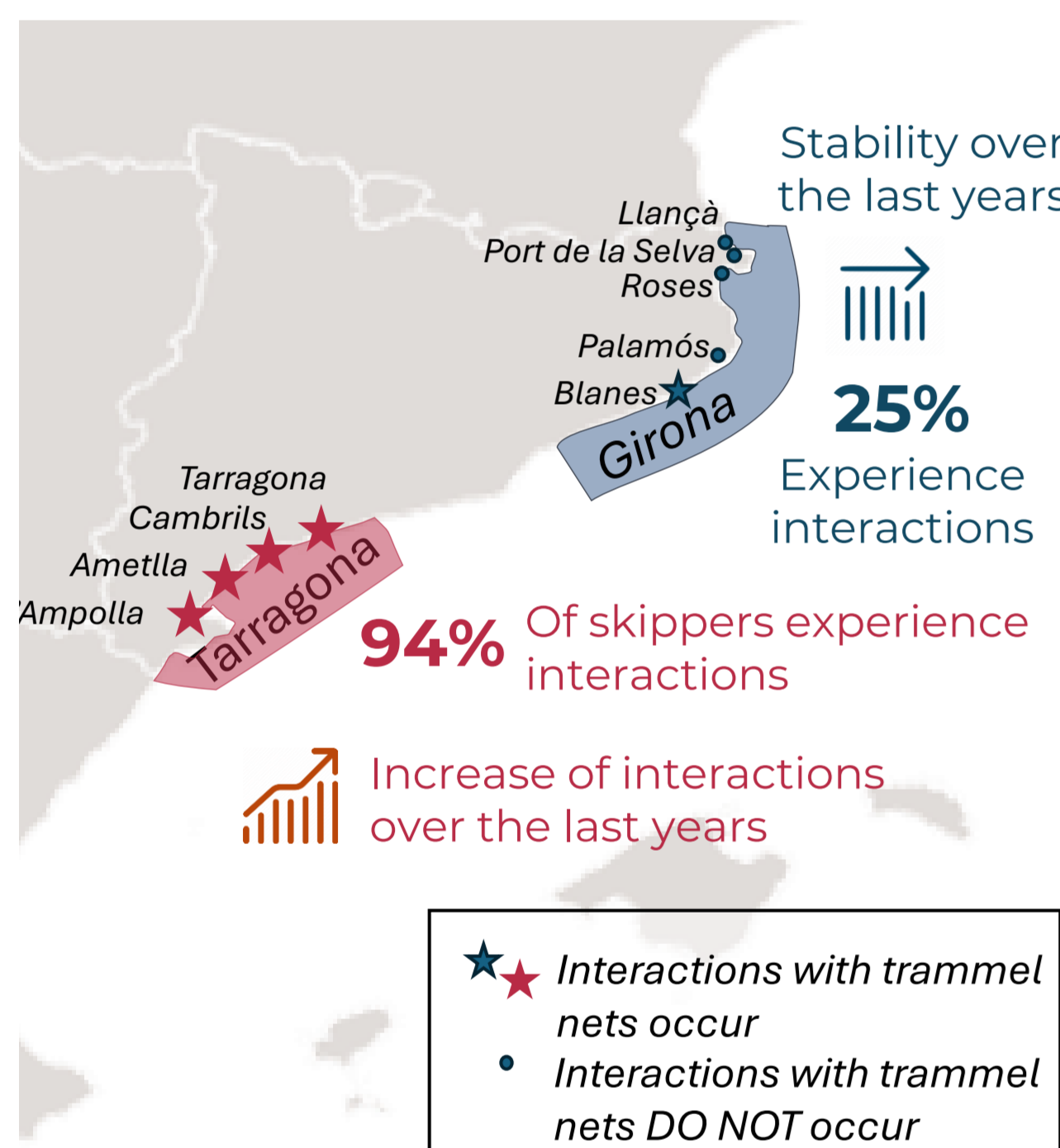
Figure 1: Study area (Catalonia, NW-Mediterranean).

Survey focus areas:

- Socio-demographic data and general fishing activity.
- Frequency and nature of **dolphin sightings, interactions** and **bycatch**.
- **Impacts of interactions** on dolphin population and fishing operations (economical impacts).

Data analysis: Descriptive statistics based on survey data from the north for bottom trawling and from both northern and southern regions for trammel nets.

Artisanal (Trammel net)



- There are **differences** between **northern** and **southern** fisheries (Figure 2)
- 79% of trammel net skippers consider **dolphin interactions to be negative**, although there are clear regional differences:
25% in Girona/ 100% in Tarragona
- **Bottlenose dolphins cause catch loss and net damage:**

Fishermen's guilds	Average €/year	SD €/year
Girona (Blanes)	3,330	2,404
Tarragona*	12,067	22,450
Cambrils*	52,000	42,568
Other guilds	5,020	4,504

Average annual economic losses (€) reportedly caused by dolphin interactions, by fishermen's guild. *The large standard deviation (SD) is primarily due to variation in the reported losses both within the Cambrils fishing guild and between Cambrils and other guilds in the Tarragona province.



Figure 3: Damages caused by dolphins in Cambrils (photos by SUBMON and a surveyed trammel net fisherman from Cambrils).

RESULTS

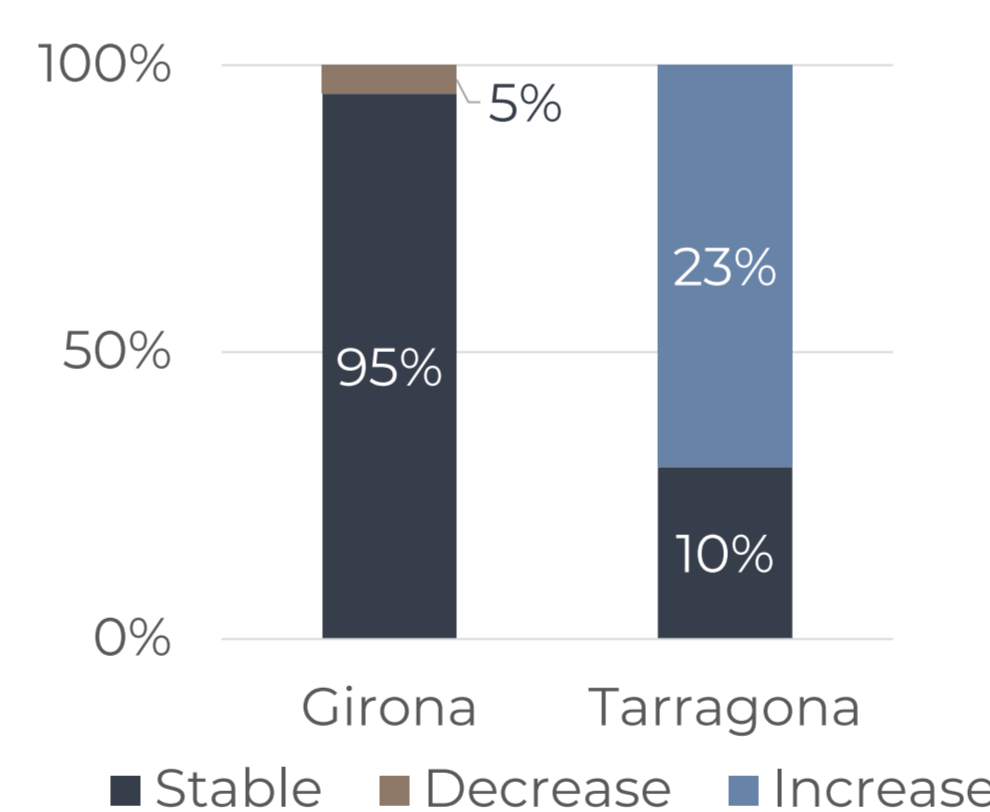
Bottom trawling

- **100%** of trawling fishermen **report year-round interactions**.
- **Stability in interaction frequency** (although an increase was noted in Tarragona; see *Graphic A*).
- **90%** confirm **bottlenose dolphins feed** from their nets (See *Graphic B*).
- **Most consider these interactions either neutral or positive** (improve fishing, entertain or have no effect; see *Graphic C*).
- When perceived negatively, the concern is mainly over potential stock depletion → There is **no gear damage**.

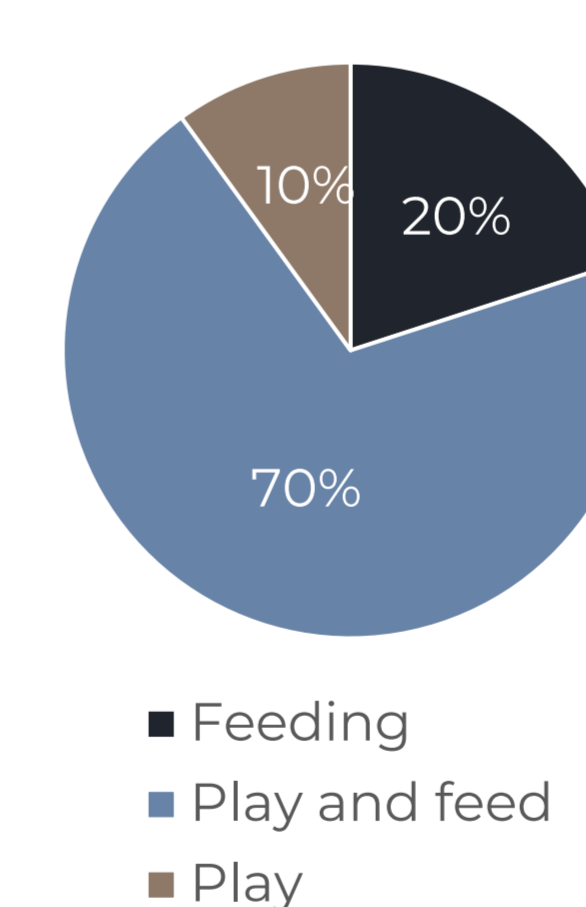


Figure 4: Bottlenose dolphin carrying a fish taken from a trawling net.

Graphic A: Evolution of interactions



Graphic B: Behaviour during interactions



Graphic C: Fishermen's Perception of interactions

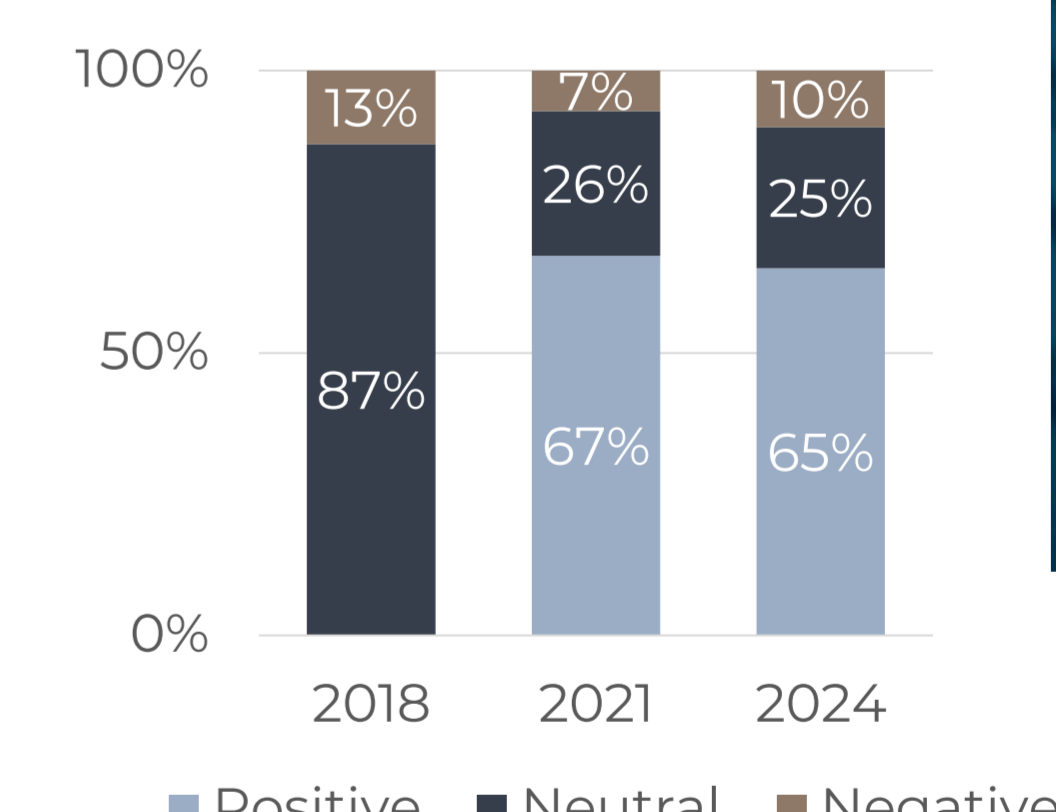


Figure 5: Bottlenose dolphin taking a fish from a trawling net.



- **55% of trawler skippers** have **incidentally captured** a dolphin at some point in their careers.
- **Northern trawler skippers bycatch an average of 1.3 dolphin in their careers** (mean 32 years; SD = 2.5).

No. of dolphins bycaught during their careers	% of skippers
0	45%
1	40%
2-5	10%
>5	5%

CONCLUSION

- **Northern fishermen** generally perceive **dolphin presence in both bottom trawling and trammel net fishing as positive or neutral**, citing stable and non-damaging interactions.
- Conversely, **southern trammel net fishermen** perceive **dolphin interactions as negative**, with increasing occurrences in the region, raising concerns about gear damage and economic losses.
- **There is a need to establish a legal framework or permit system** that allows fishers to bring bycaught dolphins to port without fear of sanctions to improve reporting and support conservation efforts.
- Next steps include **complete remaining surveys** in the Tarragona region and calculate **bycatch ratio estimates** based on the data collected calculated to better understand the potential impact.