



The bottlenose dolphin population in northern Catalan waters (Mediterranean Sea): insights on distribution, behavior, and trawling activity influence.

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The present study summarizes the occurrence and fisheries dependence of common bottlenose dolphins (CBD) (*Tursiops truncatus*) over an extended period of 6 years (2017 to 2022) in the northwestern Mediterranean coast of Catalonia.

DATA COLLECTION

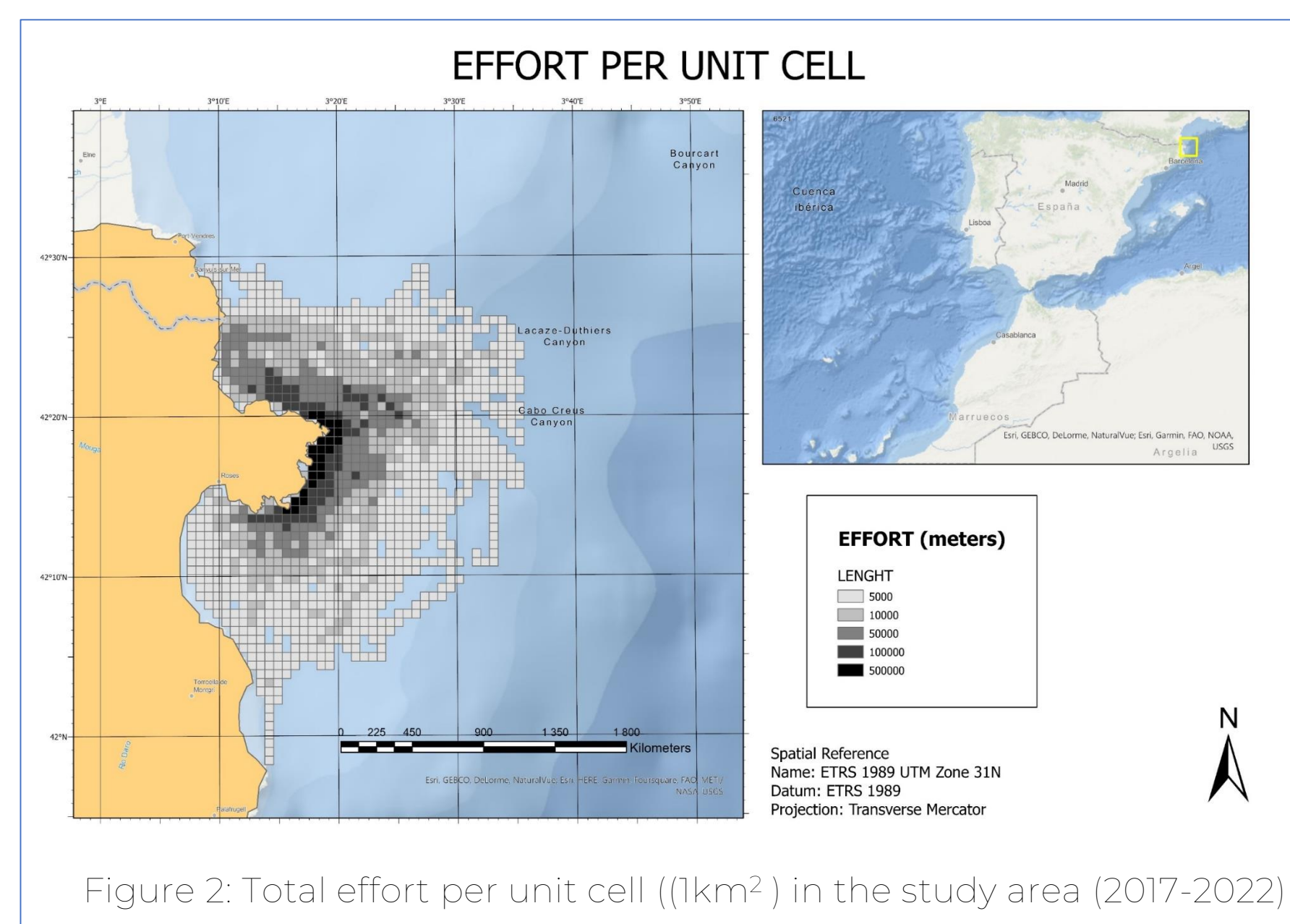


Figure 2: Total effort per unit cell (1km²) in the study area (2017-2022)

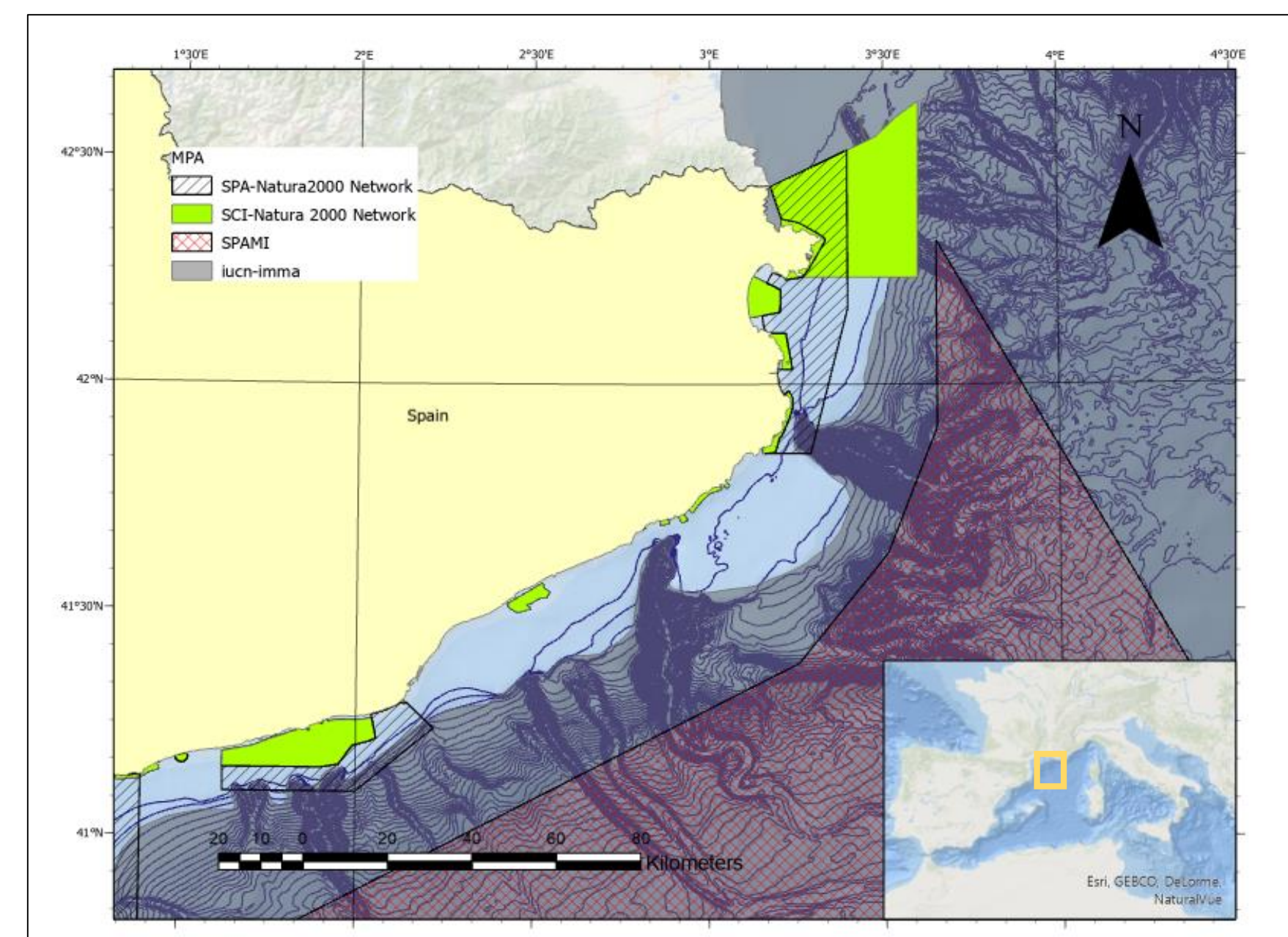


Figure 1: Map of the study area with the protected areas included

A total of 8903 km of stratified homogeneous effective effort was conducted in the study area from 2017-2022 (Figure 2). Visual transect and photo-identification surveys were carried out on a 6-meter-long RIB (115 HP).

STUDY AREA

The study area (2144 km²) is located northern part of the Spanish Mediterranean Sea. It includes two marine protected areas: Cap de Creus MPA and Montgrí, Medes Islands and Baix Ter Natural Park and is also part of the Nature 2000 Network (Figure 1).

SURFACE BEHAVIOUR STUDY

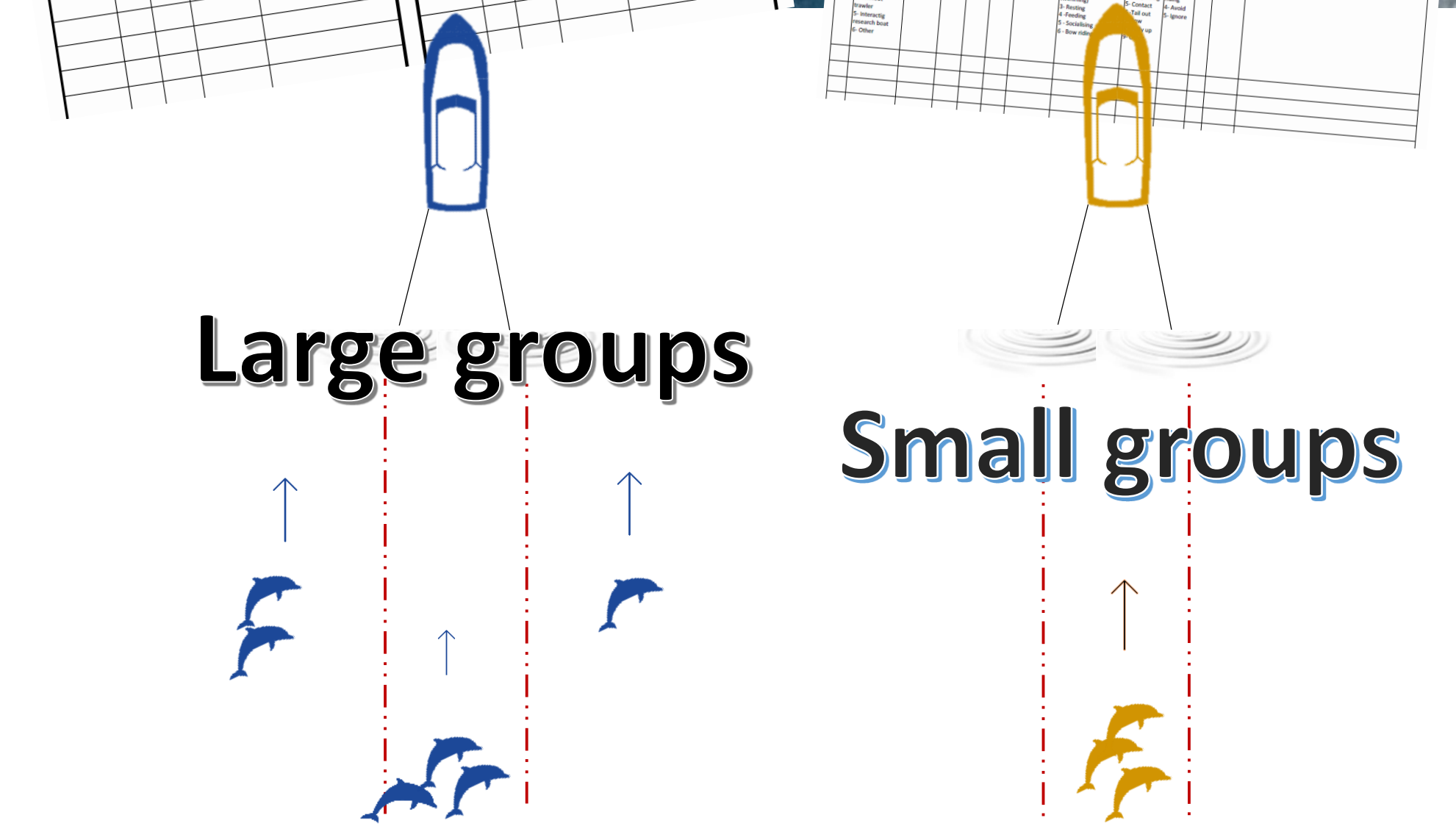


Figure 5 Representation of distribution patterns detected following trawlers, depending on the group size.

RESULTS

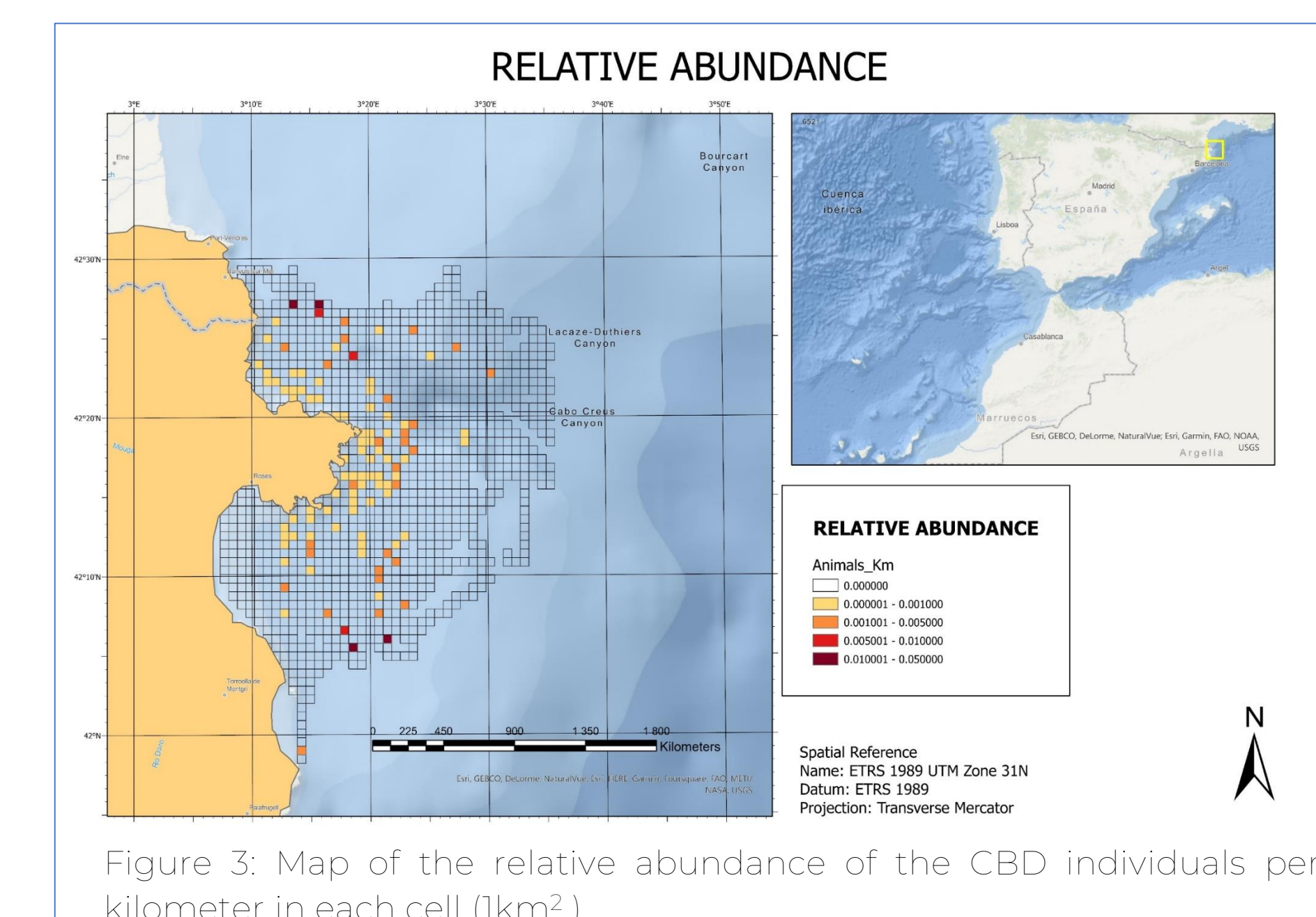


Figure 3: Map of the relative abundance of the CBD individuals per kilometer in each cell (1km²)

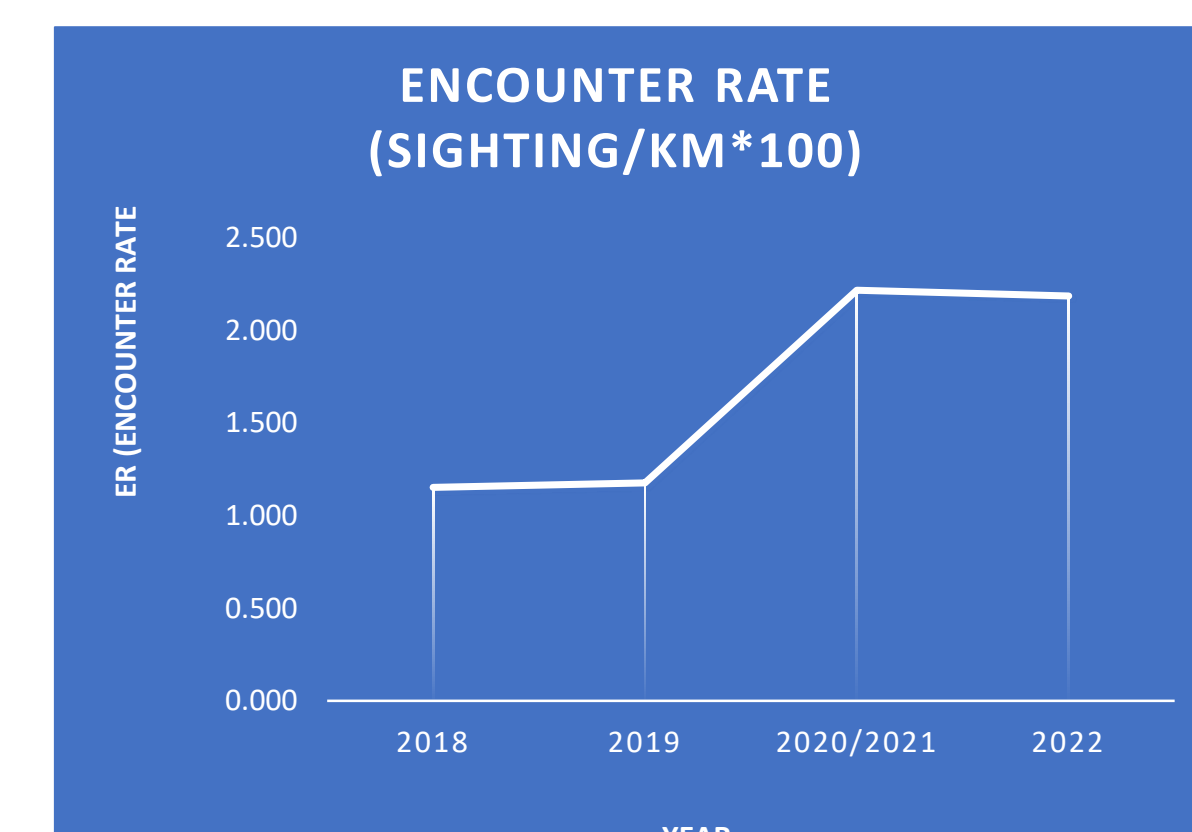
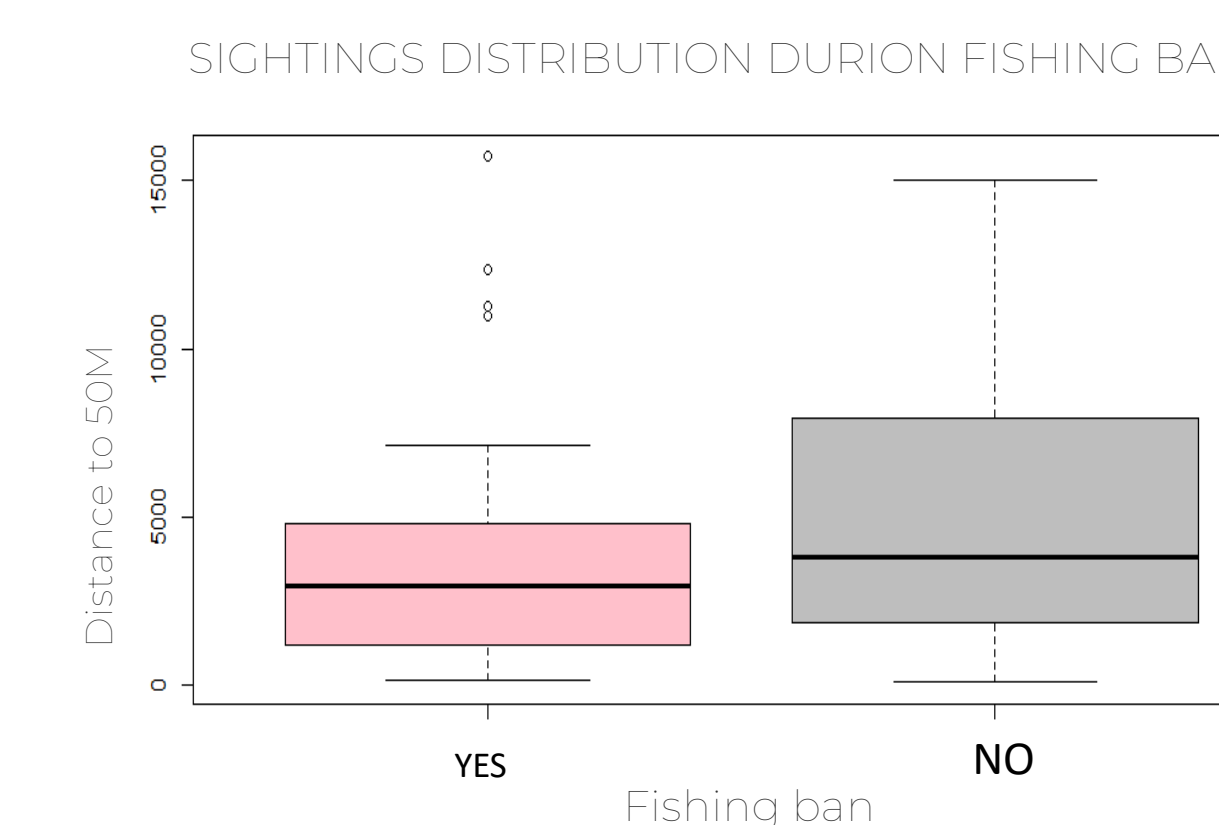
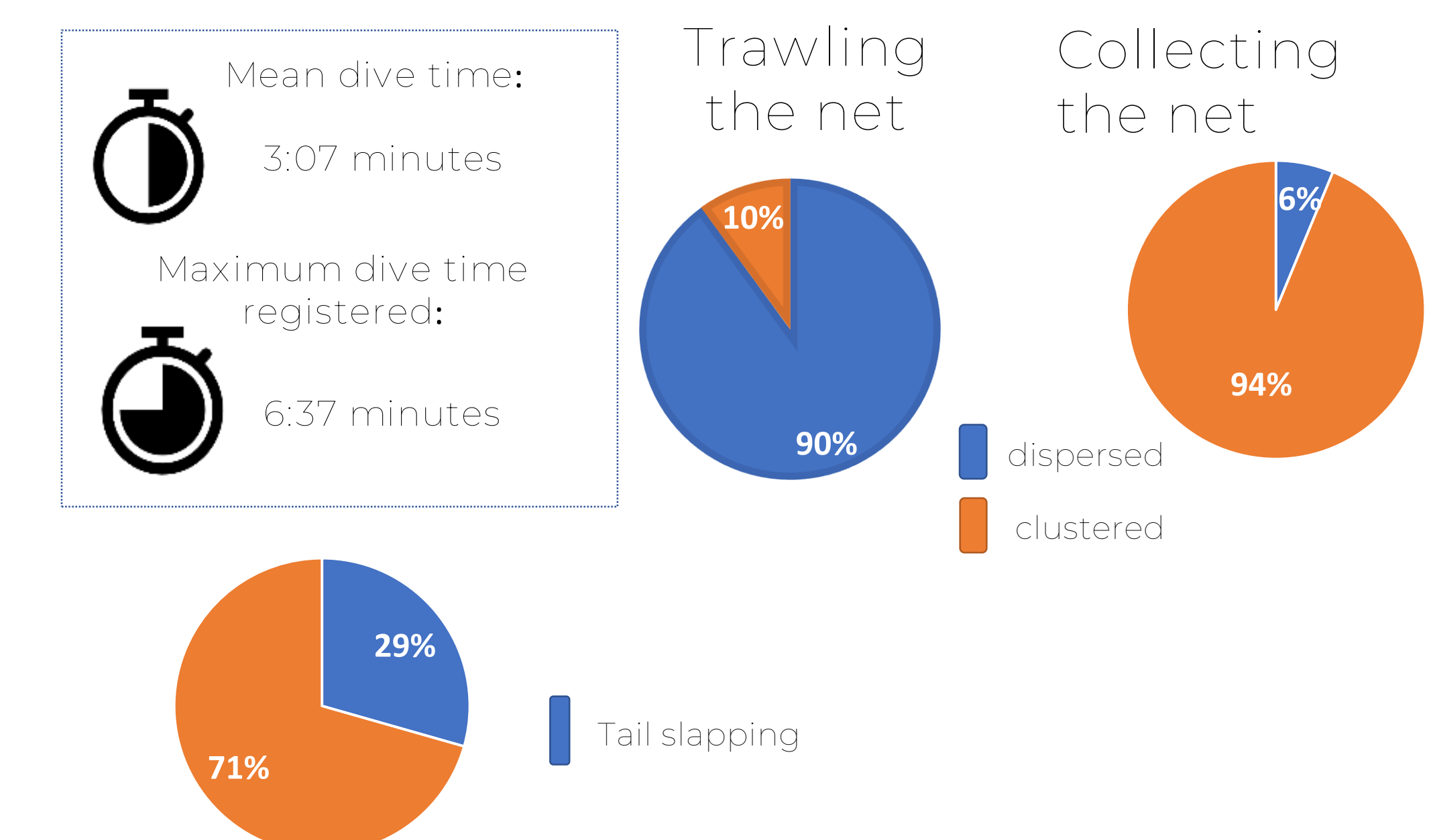


Figure 4: Left: Encounter rate during the different years/ Right: percentage of sightings associated with trawl feeding.



There appear to be no significant differences between fishing ban (from 50-70m) and non-fishing ban period in the distribution of the sightings (Mann-Whitney U test: n=120, W = 1506, p-value = 0.1661).

The difference between the group size in presence of trawlers or without trawlers was not significant (Kruskal-Wallis n=108; chi-squared = 0.21391, df = 1, p-value = 0.6437)



DATA	RESULTS
Number sightings CBD	120
ER (encounter rate)	0.0148 sightings/km
Group mean size	9.15 (SD=4.2)
Density	0.00016 individuals/km ²
Presence of calf	44% of the sightings (65% June-September)
Mean depth	100m
Trawling association	70%