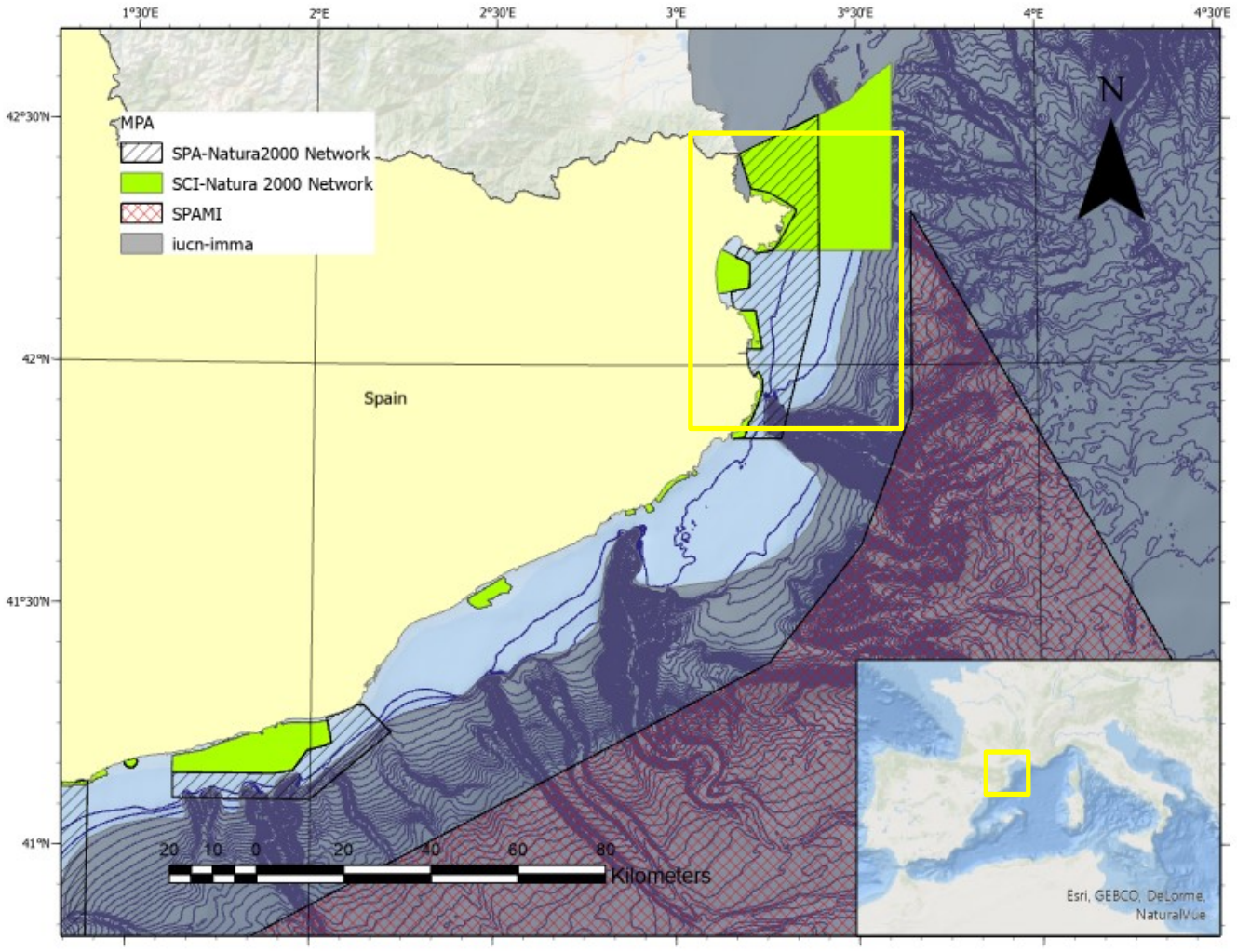
Each patch tells a story: population estimates, distribution, and fisheries dependence from the Mediterranean bottlenose dolphin population in the northwestern Catalan waters.

Chicote C.A., San Roman Daniel , Amigó N., Andón N., Gazo M.

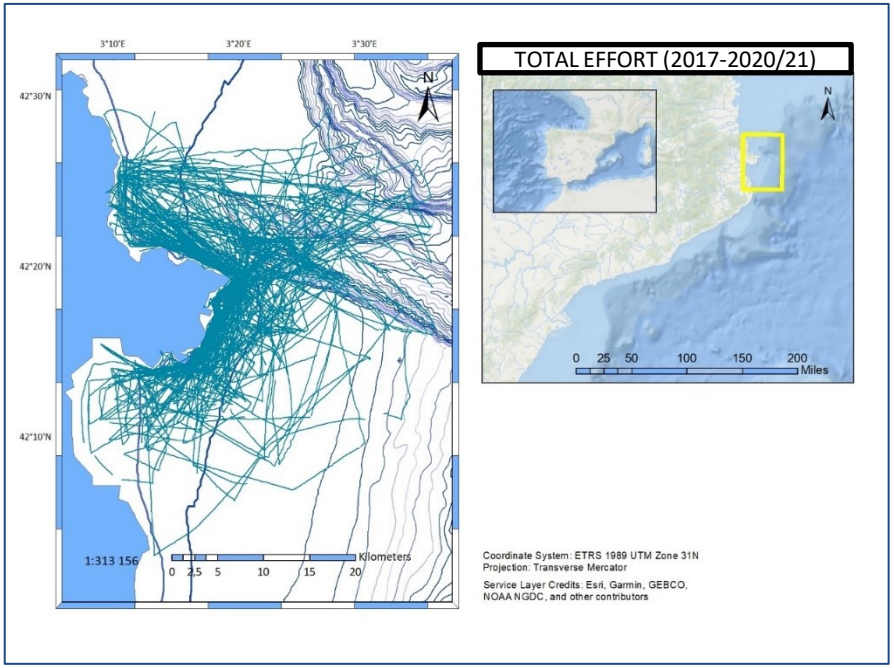
TRAMUNTANA DOLPHIN PROJECT

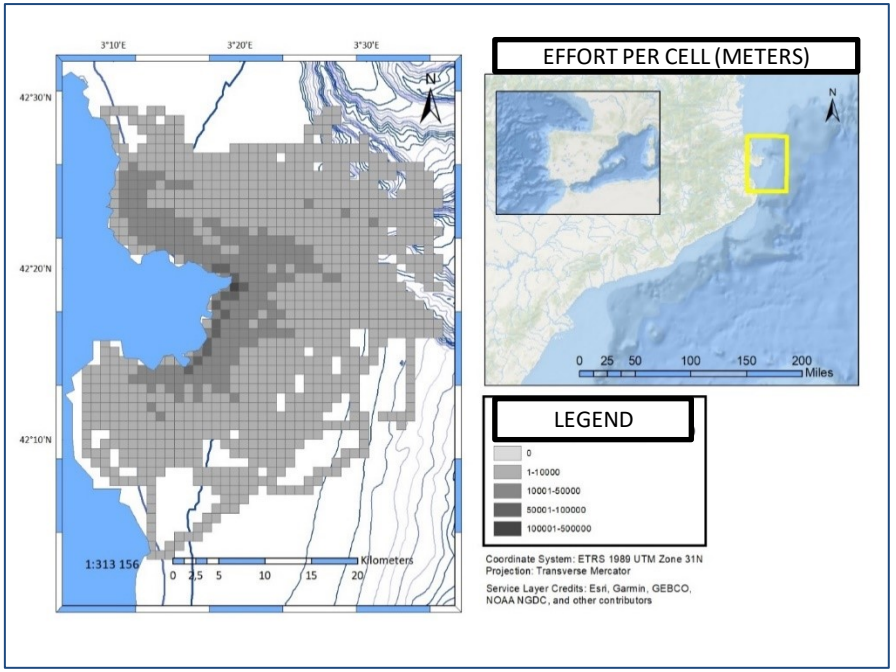
STUDY AREA



TRAMUNTANA DOLPHIN PROJECT

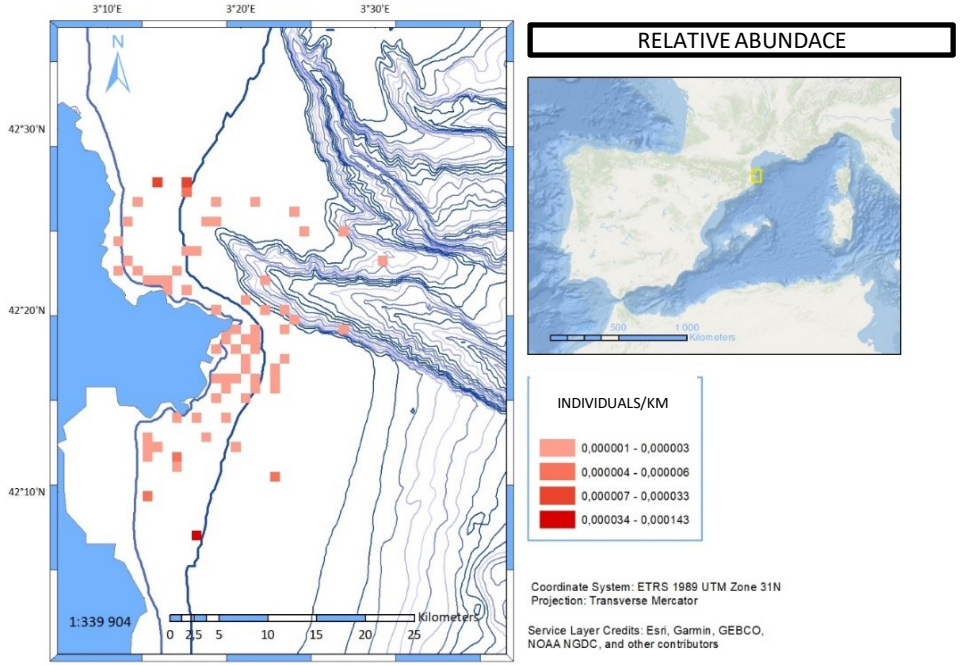
DATA SUMMARY 2017-2020





- Study area: 158.644,294 ha
- Effort 12.445 Nm (2017- 2021)

TRAMUNTANA DOLPHIN PROJECT
DATA SUMMARY 2017-2020



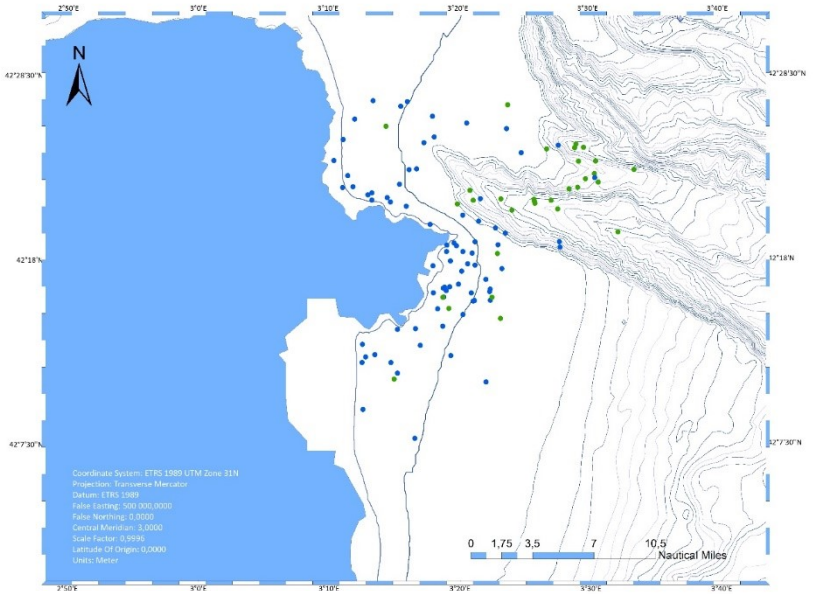
RELATIVE ABUNDACE

INDIVIDUALS/KM

- 0,000001 - 0,000003
- 0,000004 - 0,000006
- 0,000007 - 0,000033
- 0,000034 - 0,000143

Coordinate System: ETRS 1989 UTM Zone 31N
Projection: Transverse Mercator

Service Layer Credits: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

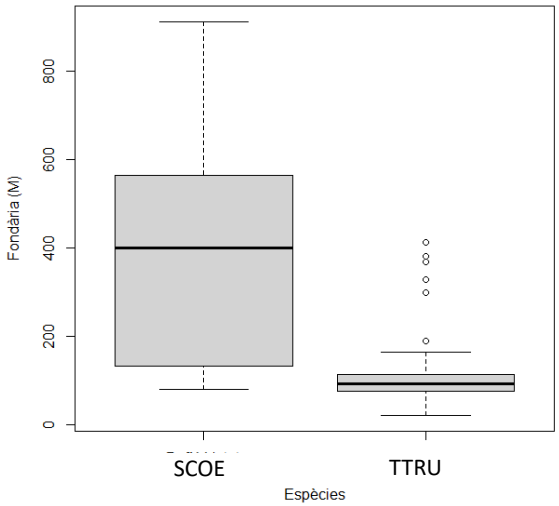


- Bottlenose dolphin sightings: 77
- ER=0.0242 sightings/nm

Bottlenose dolphin:

- Group mean size: 9,31 individus
- Density: 0,00382 individuals/km.
- Mean depth: 100m

Depth by species



(Mann-Whitney U test: W= 1826;n TTRU=77 i n SCOE=27 p= $5.59*10^{-9}$)

TRAMUNTANA DOLPHIN PROJECT
RESULTS 2017-2020

YEAR	2017	2018	2019	2020/21
SIGHTINGS	12	32	21	9
NUMBER OF OBSERVED INDIVIDUALS	85	351	248	61
GROUP SIZE	7,83	10,62	11,80	7
SIGHTINGS WITH CALFS (%)	60%	61,76%	81%	25%
ASSOCIATS AMB VAIXELL DE PESCA	83%	47,06%	48%	87,5%
EFFORT (NM)	944,23	1593,80	964,122	267,9
ER (SIGHTING/NM)	0,0127	0,0213	0,0218	0,0410

Warm season(June-october)

Cold season(november-february)

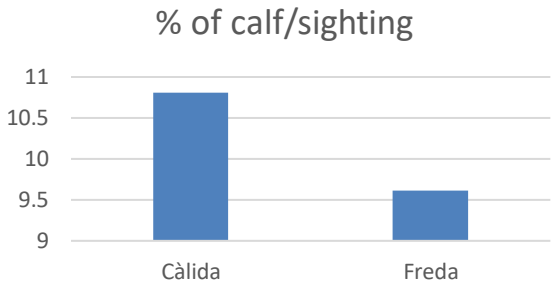
- **Presence of calf:** 52,02% of the sightings.

- **Fishing activity:** 66% associated with trawl fishing activity

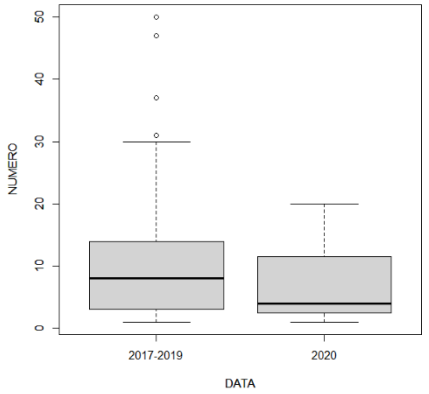
See Natalia Amigó poster

TRAMUNTANA DOLPHIN PROJECT
RESULTS 2017-2020

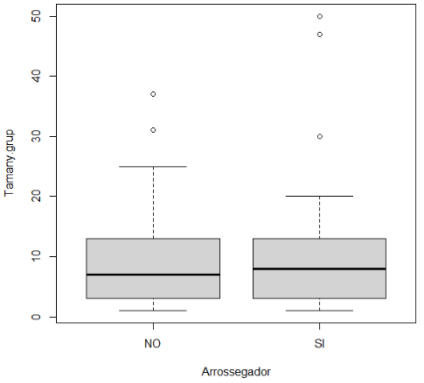
- no significant differences were observed between the groups with calfs during warm/cold season Fisher (p value=0,1606).



- no significant differences were observed between group size durind cold/warm season (W = 419, n warm season=65 i n cold season=11 77 p-value = 0.3665)

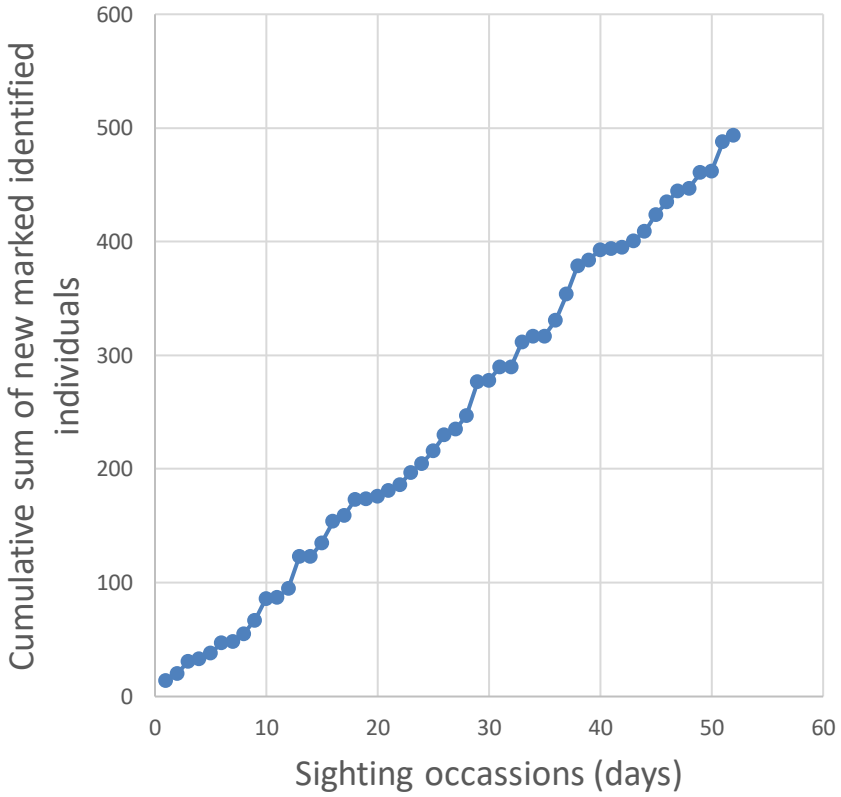


- no significant differences were observed between group size in presence (YES) or absence (NO) of trawl vessels (Mann-Whitney U test: W= 709.5;n TTRU=77 i p= 0.7417)



TRAMUNTANA DOLPHIN PROJECT
FOTO-ID RESULTS 2017-2020

- 51920 photos analyzed
- 188 recaptures.
- 494 individuals included in the catalog
- Prelimirar Abundance estimate: calculated using only individuals with both bands (367). Only good quality brands were used. the **CAPTURE M(t)** model for a closed population provided the best fit (lowest AIC value), obtaining an abundance of **822 (95% CI 670 to 1034)** dolphins.
- Groups of individuals were not stable



TRAMUNTANA DOLPHIN PROJECT
CONCLUSIONS

- The bottlenose dolphin population is present all year round in the area.
- The highest densities of bottlenose dolphins are between 50 and 100 meters deep, around Cap de Creus (0.004 individuals/km),
- Densities are high compared to other areas of the Catalan coast. *This area is also the most touristic area during summer season*
- Seasonality appears not to have a significant impact on group size or on the hatchling period, suggesting that the access to the food is not a limitation and the population could rely on trawl fishing activity.

DOFINS DE TRAMUNTANA
Next steps- COSTTERA

- **Evaluation of underwater behavior during fishing interaction**. video cameras on trawling

- **Surface behavior analysis.** Behavioral data will be taken during periods of the surface of the animals feeding on the trawling nets.

- **Monitoring of bottlenose dolphins during fishing seasons.**

Dolphins interactions with bottom trawl in Mersin Bay, Turkey

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