Reconciling fishing and conservation of a threatened pelagic shark, the blue shark, by identifying ecologically important areas in the western Mediterranean Sea

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BACKGROUND

- The **Mediterranean Sea** is one of the world's shark and ray **biodiversity hotspots**. However, these predators are facing critical threats due to human activities.
- Wide-ranging species such as **large pelagic sharks** often share habitats with commercially valuable species (e.g. tunas, billfishes), increasing their risk of bycatch.
- Despite efforts to improve gear selectivity and regulate the capture of vulnerable species, such as blue sharks, these are still caught.

Blue shark (*Prionace glauca*)

- Large oceanic pelagic shark → up to 380 cm TL
- **Wide-ranging** → distributed throughout tropical and temperate waters
- **Highest** known **population growth rates** among pelagic sharks

Caught globally as target and bycatch in commercial and small-scale fisheries → mostly bycatch at offshore industrial pelagic fleets

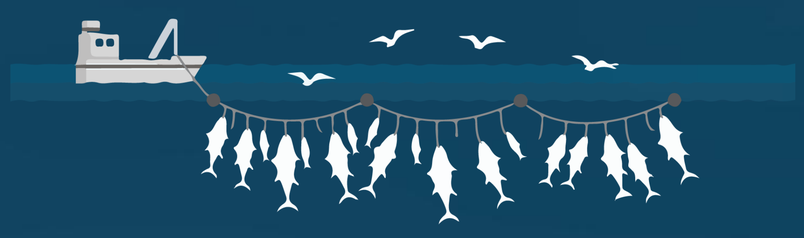
- Most common species in **fin trade** → increasing demand for meat
- Steep **historic declines** in the Mediterranean Sea → at Spanish waters biomass declined by 99.78% in 25 years

AIM

Within the framework of the **COTI project**, our objective is to identify ecologically important areas for pelagic sharks in the western Mediterranean as a tool for adaptively managing longline fisheries by studying their **habitat use**.

METHODS

Sharks were tagged in collaboration with commercial and artisanal **longline fishers** in multiple locations across the western Mediterranean in **2025**



22 PSAT tags

Pop-up archival transmitting tags

Stores **temperature**, **depth**, and **light** data and transmits it upon detachment (programmed at 6 months)

Affixed to the dorsal musculature with a titanium dart

10 SPOT tags

Smart Position Transmitting tags

Transmits **real-time position** every time the it surfaces

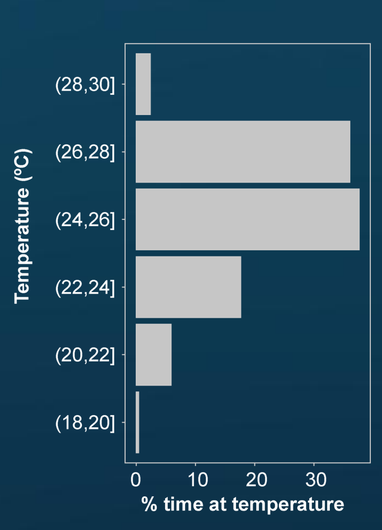
Affixed to the dorsal fin

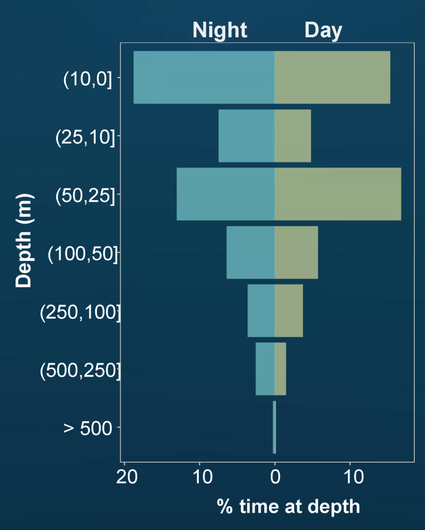
PRELIMINARY RESULTS

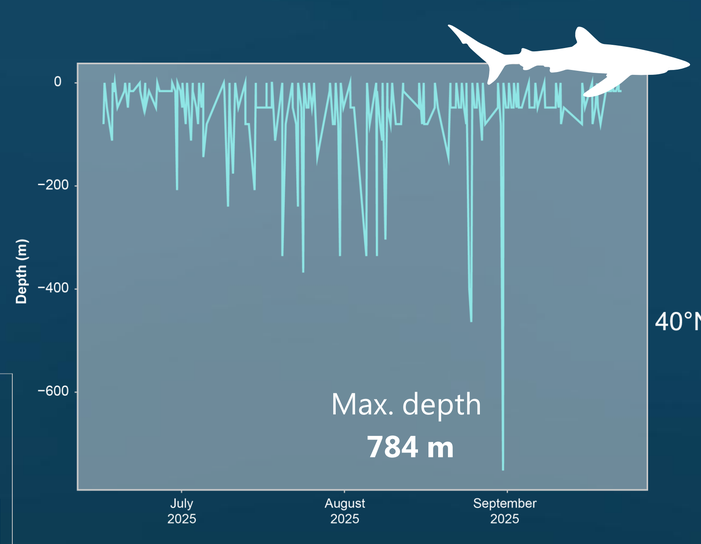
25 individuals tagged (9 with both tags)

	n	Mean length
Females	9	181,8 (± 30)
Males	16	190,7 (± 42)

Summarized temperature and depth data from transmitted **PSAT tags**

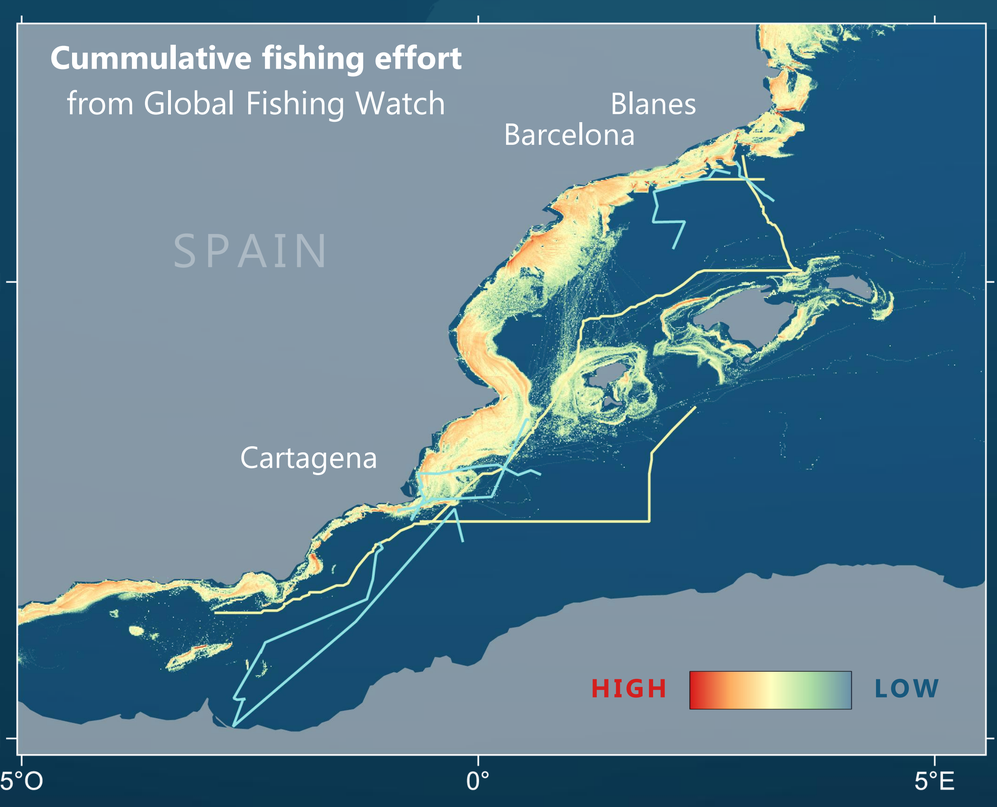






Diving profile from transmitted PSAT tag from a female of 190 cm TL

Mean deployment length was **83** (± 42) days



NEXT STEPS

- Identify **aggregation areas** and describe migration patterns
- Classify the different **diving behaviors** obtained from the recovered tags
- **Identify priority areas** to protect this species throughout their annual cycle, with minimal socioeconomic impact on fishing activity

Acknowledgments:

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