

FIN WHALES IN SOUTH PORTUGAL: A CASE STUDY IN FARO



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INTRODUCTION

Fin whales (*Balaenoptera physalus*) are migratory baleen whales in the North Atlantic, yet their movement patterns in the eastern Atlantic are poorly documented [1]. The southern coast of Portugal, especially Faro, has emerged as a potential seasonal hotspot. Between 2020 and 2024, 171 sightings were recorded, with Photo-ID conducted when possible. Most sightings occurred in spring, with whales often feeding or travelling. These patterns suggest Faro may serve as a seasonal feeding ground or migratory stopover, aiding the understanding of North Atlantic and Mediterranean population connectivity [2,3].

GOALS

- Assess the seasonal occurrence of fin whales in Faro region
- Establish a photo-identification catalogue for cross-regional comparisons
- Understand habitat use and predominant behaviors
- Contribute with baseline data for future population and movement analyses



Figure 1 - Fin whale (*Balaenoptera physalus*)

METHODS

Data were collected opportunistically from whale-watching and research vessels off Faro between 2020 and 2024, following random transect routes. Sightings were recorded by onboard and occasional land-based observers. Photo-identification used chevron and dorsal fin patterns, along with lateral body markings and aerial images when possible. Sightings were documented with photos and standardized data sheets for consistency. Whales were measured using UAVs and RStudio.

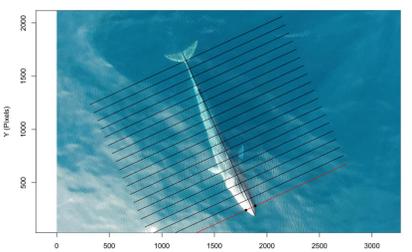


Figure 2 - Measurements using RStudio

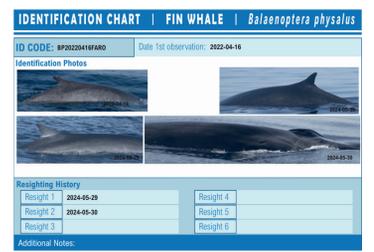


Figure 3 - Fin whale catalogue sample with a re-sight confirmed (2022 & 2024)

RESULTS

A total of **171 fin whale sightings** were recorded. Sightings showed strong seasonality, with the vast majority occurring in **spring**— with a peak in April and May. Group sizes ranged from solitary individuals to **pods of up to 16 whales**, with **most whales measuring less than 16 meters**. Most sightings occurred along the slope area.

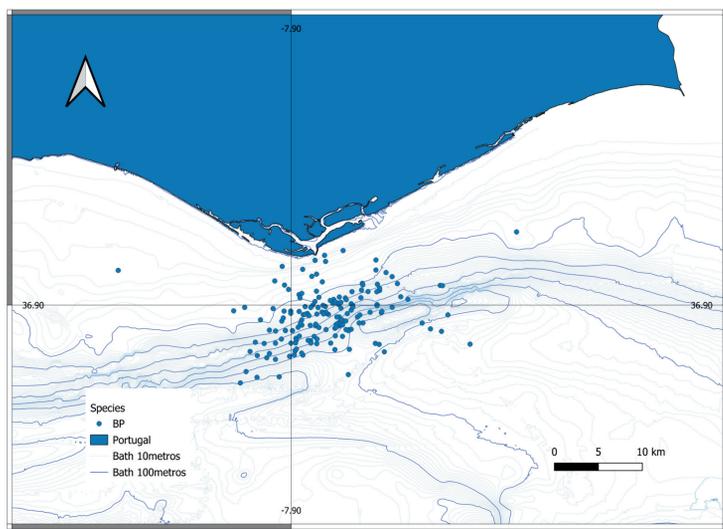


Figure 4 - Sightings of Fin whales in Faro coastal areas

Observed behaviors included feeding, travelling, and logging or milling, with **feeding being the most frequently recorded activity**. Photo-identification efforts resulted in a preliminary catalogue of over 23 individuals, with ongoing additions. **Several individuals were resighted across multiple years.**

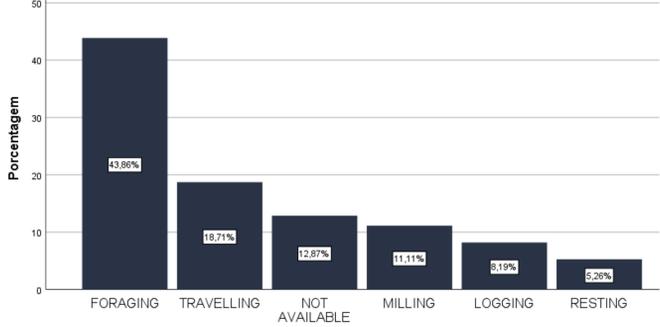


Chart 1 - Observed behaviors (boat & UAV based)

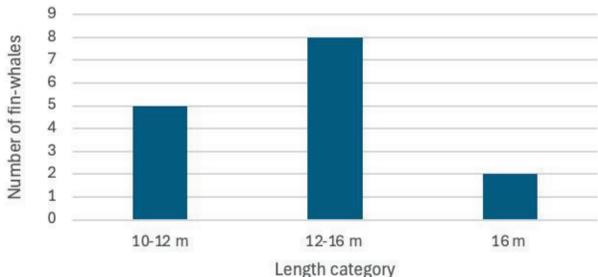


Chart 2 - Distribution of lengths among measured whales (ongoing work)

DISCUSSION

Our findings confirm Faro region as a seasonal hotspot for fin whales, with peak occurrences in spring, likely driven by prey availability. Similar spring aggregations have been observed in other North Atlantic foraging grounds [2,4]. Frequent feeding supports the area's role as a key foraging site, unlike adjacent regions where fin whales are scarce [5]. Most sightings occurred along the nearby continental slope, which likely enhances productivity and accessibility, aligning with known habitat preferences [3,6]. Repeated resightings of some individuals across years suggest emerging patterns of site fidelity.

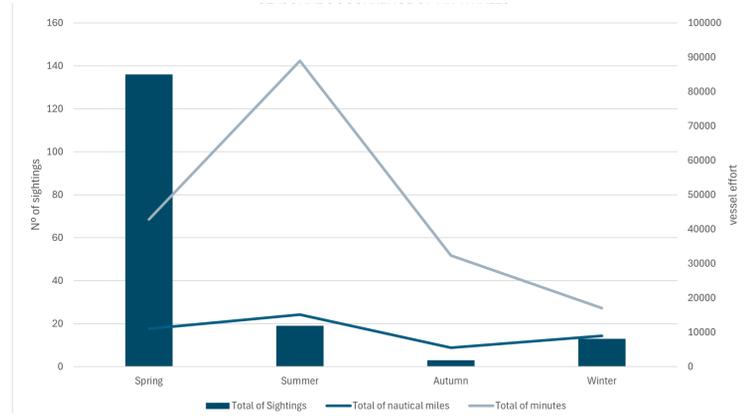


Chart 3 - Number of sightings per season (bars) and vessel effort (lines)

CONCLUSIONS

Faro region is a key seasonal habitat for fin whales, particularly in spring

The close-to-shore slope in Faro appears to funnel fin whale activity, emphasizing the area's distinctive bathymetric value

Multi-year resightings highlight Faro's potential as a long-term monitoring site for individual fin whales

Photo-ID contributes to monitoring both North Atlantic and Mediterranean populations, supporting future conservation and management strategies.

Results suggest this region may play a consistent role in fin whale migratory ecology.

References: [1] Cooke, J.G. (2018). *Balaenoptera physalus*. The IUCN Red List of Threatened Species 2018: e.T2478A50949988. <https://dx.doi.org/10.2305/IUCN.UK.2018.2.RLTS.T2478A50949988.en>; [2] Silva, M. A., Prieto, R., Jansen, J., Baumgartner, M.F., & Santos, R. S. (2014). North Atlantic fin whales migrate from Portugal to Norway: New insights from photo-identification, telemetry and stable isotopes. *Marine Ecology Progress Series*, 257, 281-292; [3] Panigada, S., et al. (2017). Satellite tagging of fin whales in the Mediterranean Sea. *Deep Sea Research Part II*, 141, 17-24; [4] Ryan, C. et al. (2022). Spatial and temporal patterns in baleen whale sightings off western Europe. *Marine Ecology Progress Series*, 684, 179-194; [5] Cañadas, A. et al. (2022). Conservation of cetaceans in the Mediterranean and Black Seas. ACCOBAMS; [6] Tynan, C.T. et al. (2005). Cetacean distributions relative to ocean processes in the eastern North Atlantic. *Deep Sea Research Part I: Oceanographic Research Papers*, 52(5), 803-825.

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