

# TRENDS IN CETACEAN RESEARCH IN THE EASTERN NORTH ATLANTIC

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## INTRODUCTION

The Eastern North Atlantic is an area of great geographical and oceanographic complexity that favours ecosystem richness and, consequently, cetacean occurrence. Although this occurrence has led to relevant scientific research on this taxa, information on the composition of this research has not been assessed.

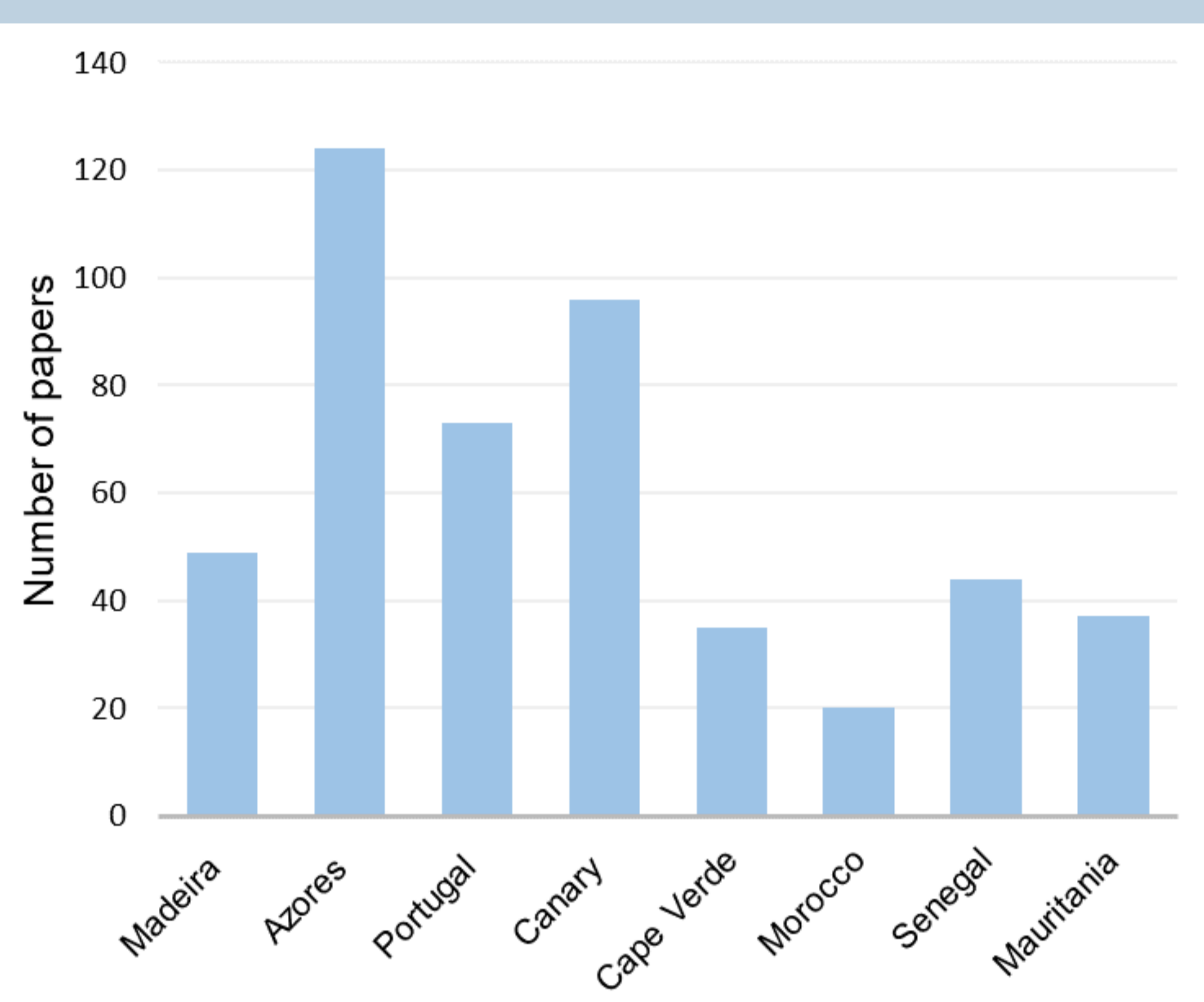
## AIMS

We aimed to describe and quantify the evolution of research on cetaceans in the Eastern North Atlantic, comprising the outer area of the Mediterranean, highlighting the main focal areas and trends.

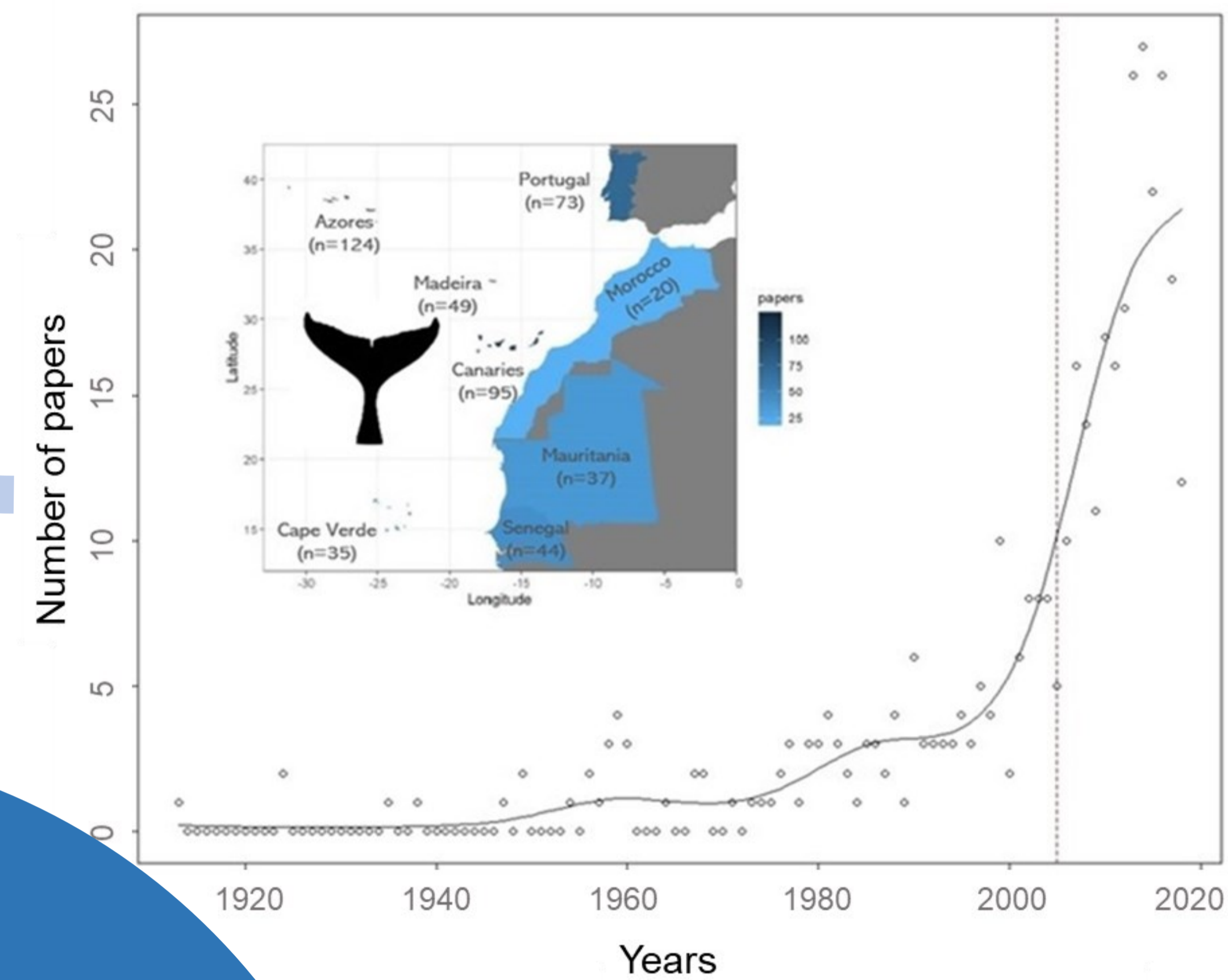
## METHODS

We considered 380 peer-reviewed publications between 1900 and 2018. For each paper, we collected publication year, research topics and regions, and species studied. We assessed differences among regions with distinct socioeconomic landscapes (i.e., North African *versus* European regions), and between coastal and oceanic habitats (i.e., mainlands *versus* islands).

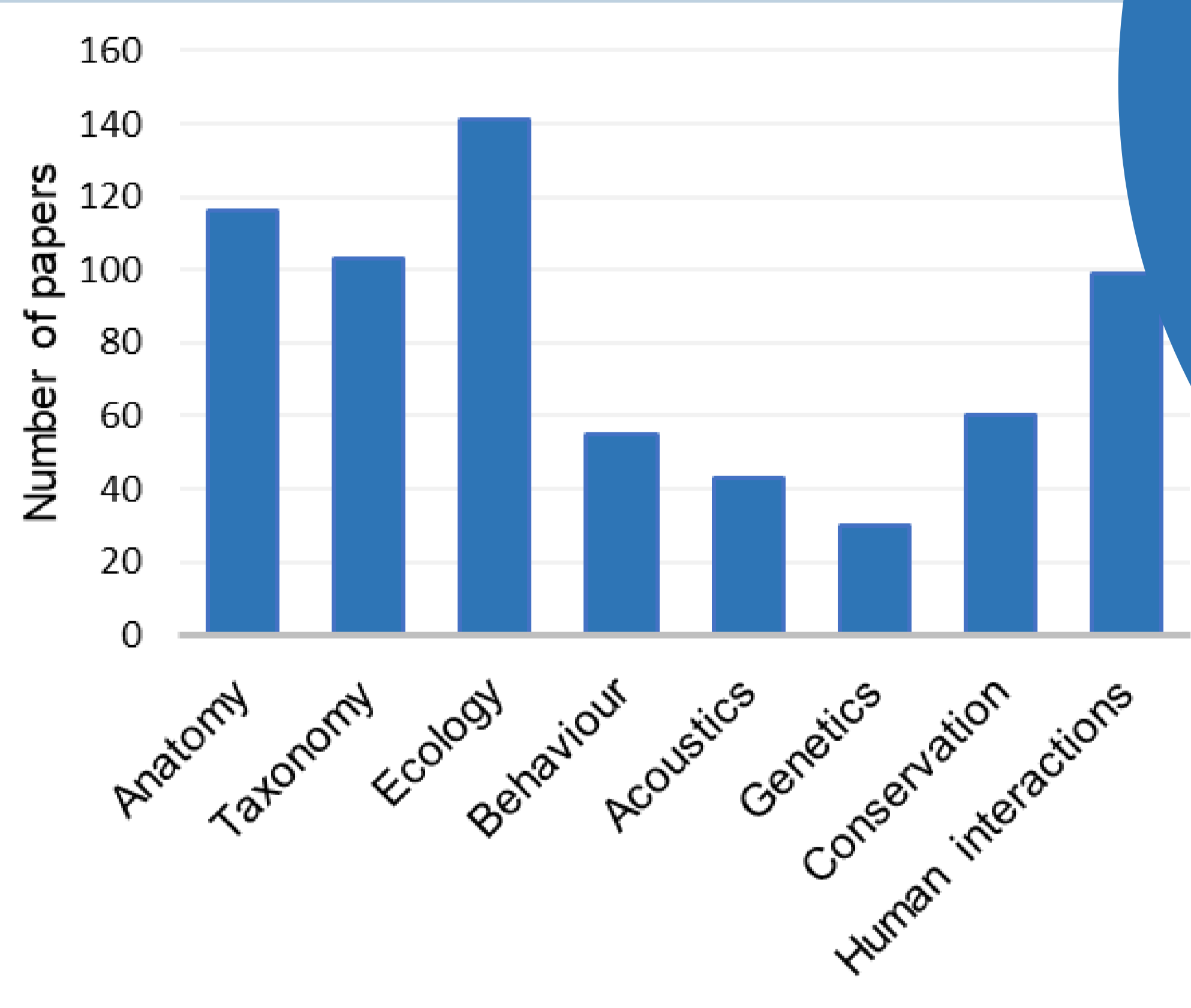
### NUMBER OF PAPERS PER REGION



### TEMPORAL EVOLUTION OF RESEARCH



### NUMBER OF PAPERS PER RESEARCH TOPIC

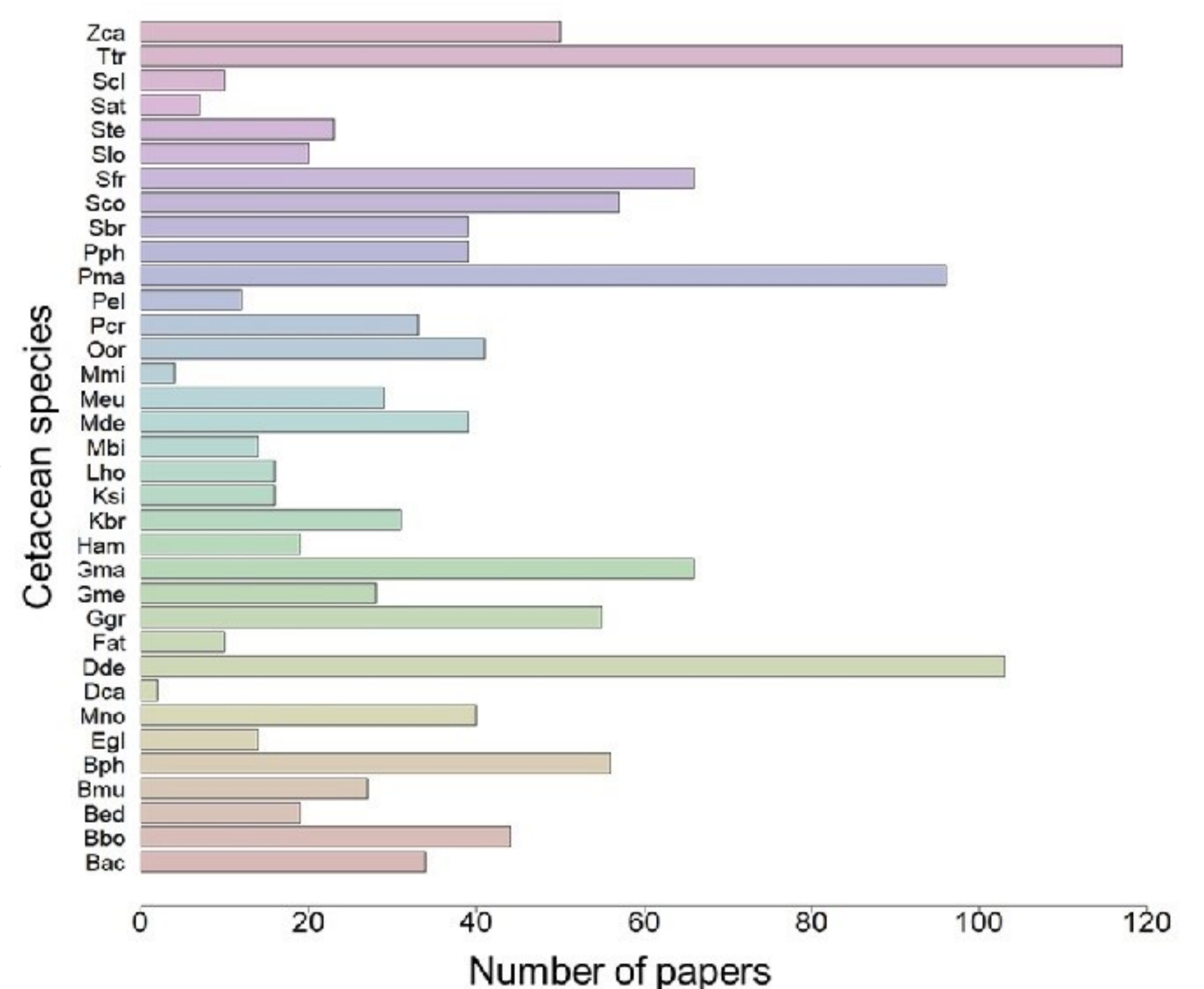


## MAIN RESULTS

- Little research output in North African and coastal regions.
- There was little research on genetics, acoustics, and behaviour.
- Most papers were focused on the Azores and Canary Islands, and mostly involved *Tursiops truncatus*, *Delphinus delphis*, and *Physeter macrocephalus*.
- Species considered Endangered or Near Threatened were the subjects of only 10% of the studies.

Fig. 1. A General Additive Model was fitted to the data ( $r^2: 0.897$ ;  $P < 0.001$ ). The vertical dashed line represents the year in which the evolution of published papers had a significant turning point (2005, identified via change-point analysis). Darker coloured countries represent higher number of published papers on cetaceans.

### RESEARCH ON CETACEAN SPECIES



## WHAT NEXT?

We suggest a greater research focus on beaked whales (Ziphiidae) in Macaronesia, as well as collaborative efforts between research teams in the region, by sharing data sets, and aiming to produce long-term research. Moreover, a Delphi method approach, based on questionnaires answered by experts, could be attempted to identify priority research for cetaceans in these areas.

**REFERENCES:** Brito C, Sousa A (2011) The environmental history of cetaceans in Portugal: ten centuries of whale and dolphin records. PLoS One 6(9): e23951. Correia AM, Gil Á, Valente R, Rosso M, Pierce GJ, Sousa-Pinto I (2019) Distribution and habitat modelling of common dolphins (*Delphinus delphis*) in the eastern North Atlantic. Journal of the Marine Biological Association of the United Kingdom 99: 1443–1457. IJsseldijk LL, Doeschate MTI, Davison NJ, Gröne A, Brownlow AC (2018) Crossing boundaries for cetacean conservation: setting research priorities to guide management of harbour porpoises. Marine Policy 95: 77–84. Kvile KØ, Taranto GH, Pitcher T, Morato T (2014) A global assessment of seamount ecosystems knowledge using an ecosystem evaluation framework. Biological Conservation 173: 108–120. **FUNDING:** We acknowledge funds provided by the Science and Technology Foundation (FCT) through strategic projects UIDB/04292/2020, UIDB/00329/2020, and UIDB/05634/2020. TAM received partial support through the project UIDB/00006/2020. RP is supported by an FCT grant (SFRH/BPD/108007/2015). BCM is supported by FCT through grant PD/BD/140845/2018. FA received financial support from projects M1420-09-5369-FSE-000002 and M1420-01-0145-FEDER-000001-OOM. **PUBLICATIONS:** This work has been published in Mammal Review, 2021, doi: 10.1111/mam.12238.