

Sentinels of the Ocean

Prepared as part of the LIFE PanPuffinus! Project under Action E1

Summary

Sentinels of the Ocean provides an updated overview of seabird populations using Portuguese waters, building on the *Atlas of Seabirds of Portugal* (2014). The publication brings together the latest information on seabird distribution, abundance, population trends, breeding productivity and environmental status, combining long-term monitoring data with recent advances in electronic tracking and other research methods.

The publication examines the role of Portuguese waters in the life cycles of seabirds and highlights the importance of these species as indicators of the health of marine ecosystems. It also assesses the main threats affecting seabirds, identifies remaining knowledge gaps and outlines conservation priorities, including those linked to climate change and the development of renewable energy in the marine environment.

The first part provides an overview of seabird ecology, movements, population status, threats and the methodologies used to assess them. The second part presents detailed information on **66 species**, covering their distribution, movements, abundance, population trends, ecology, habitat, threats and conservation measures. More than **160 distribution maps** and **81 environmental status charts** are included, covering mainland Portugal, the Azores and Madeira, and different stages of the annual cycle. The publication provides a comprehensive scientific reference for understanding the importance of Portugal's marine territory for seabirds and for supporting future monitoring, research and conservation efforts.

Reference:

Oliveira N, Nascimento T, Paiva VH, Alonso H, Costa M, Dias MP, Ramos JA, Lacerda I, de la Cruz A, Gouveia C, Campioni L, Almeida A, Pipa T, Pereira J & Andrade J (2026). *Sentinels of the Ocean - Distribution and environmental status of seabirds and coastal waders of Portugal*. Sociedade Portuguesa para o Estudo das Aves - SPEA BirdLife, CE3C, Estación Biológica de Doñana (EBD-CSIC), Lisbon.