

Using a volunteer-supported research vessel as a platform for baseline cetacean monitoring via standardised transect surveys across Ireland's Areas of Interest

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Celtic Mist is IWDG's 17 m volunteer-supported research vessel and has been used since 2023 as a standardised platform for baseline cetacean monitoring in Fair Seas Areas of Interest (AOIs), proposed as candidates for Marine Protected Areas. These AOIs cover just under 36% of Ireland's maritime area, yet many coastal sites remain poorly covered by dedicated transect surveys, highlighting the need for comparable baseline datasets to support MPA design and future monitoring.

Methods

Train

Volunteer and biologist training

Survey

Effort-led watches

Log

Environmental and sighting data

Map

Encounter rate / richness / density

Standardised survey workflow

- Line-transect visual surveys during suitable conditions
- Paired deck-level observers scanning 90  ahead
- Hourly observer rotations to reduce fatigue
- Continuous effort logging + environmental covariates in IFAW Logger
- Sightings georeferenced and coded by confidence and effort status
- Photo-ID, behaviour, static-gear buoys and floating litter recorded opportunistically
- Low-disturbance 17m sailing vessel as a platform with multi-year coverage

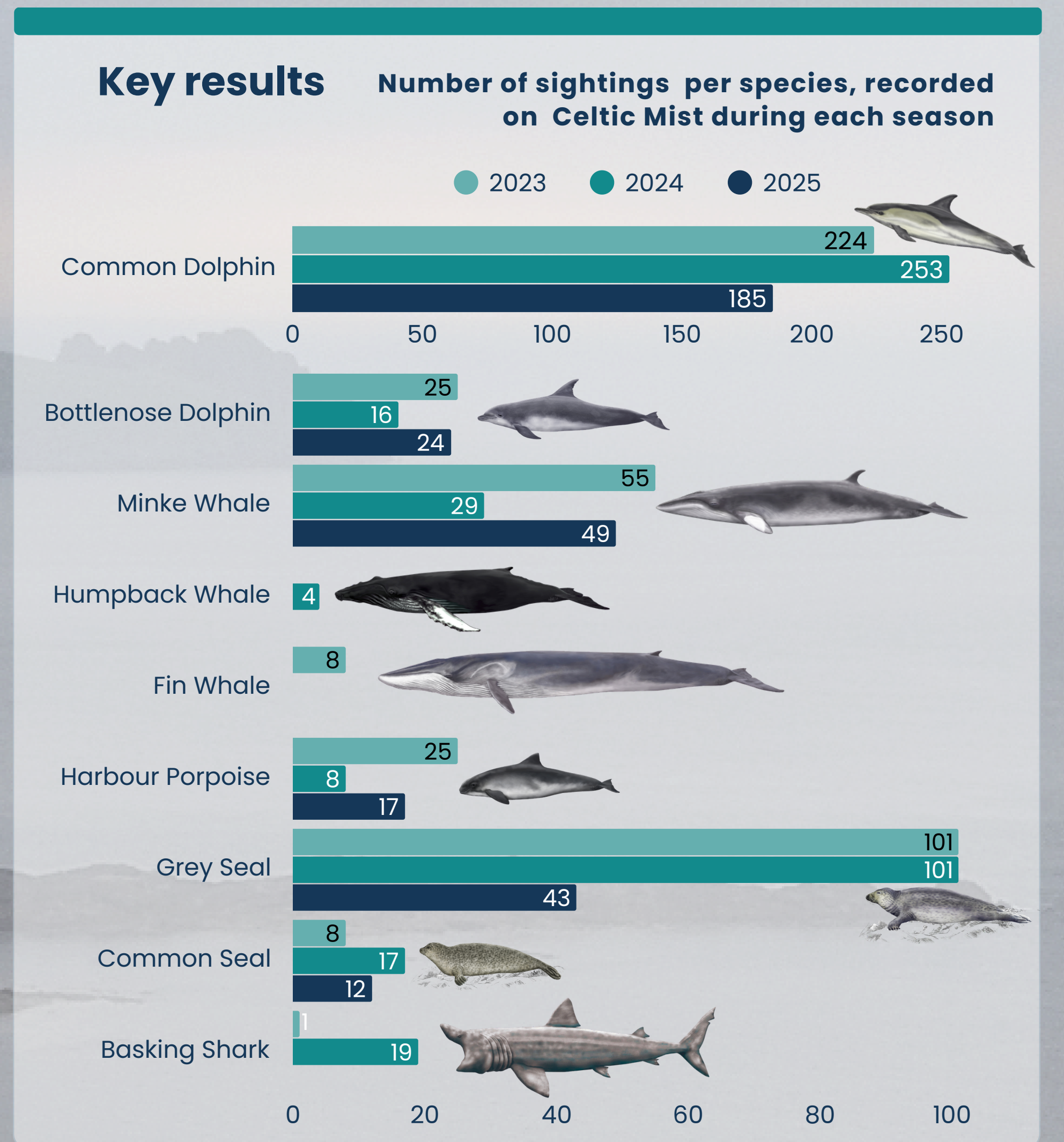
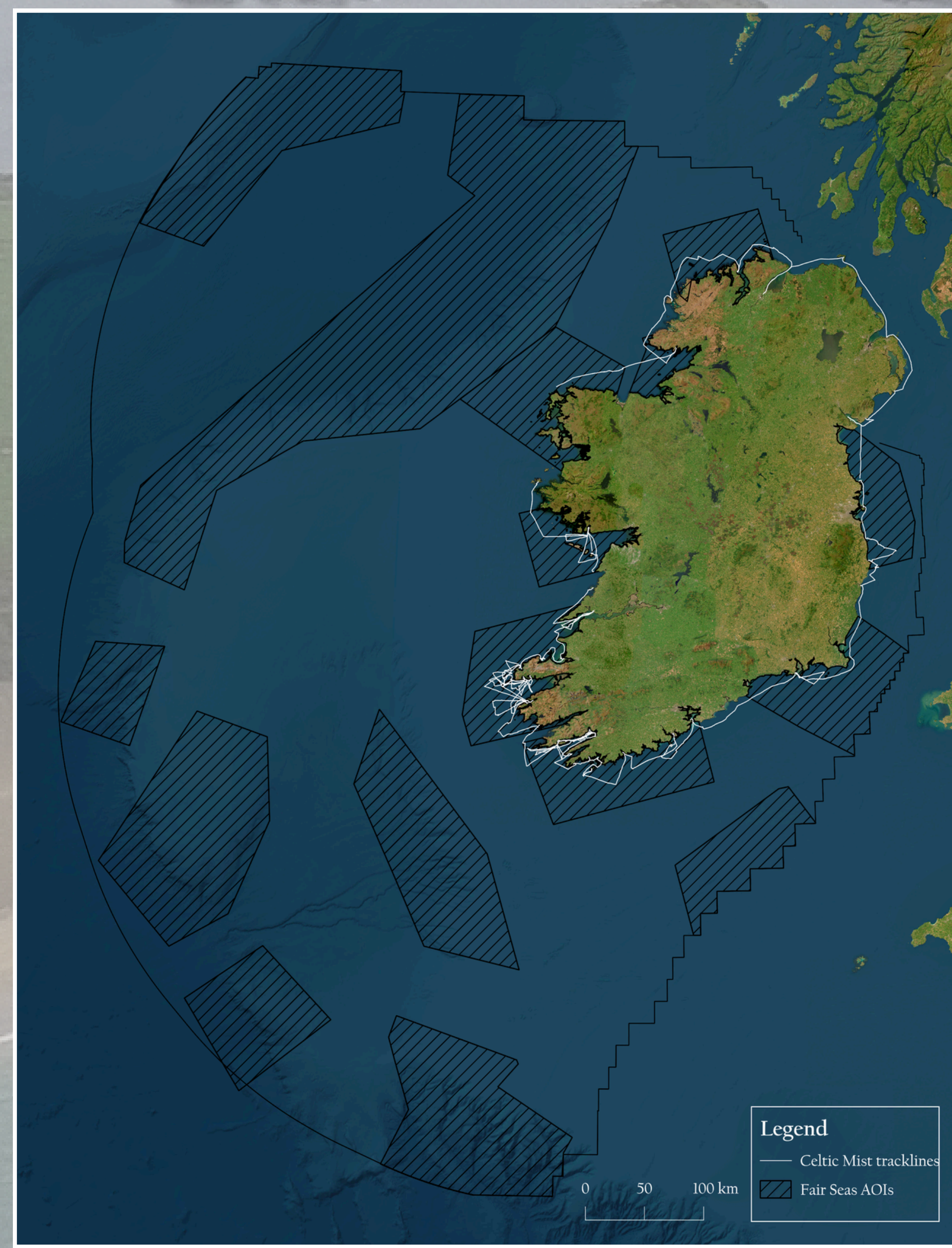
Study aim

The **Irish Whale and Dolphin Group** (IWDG) operates the 17m sailing vessel *Celtic Mist* as a member-supported research and education platform in Irish waters.

Since 2023, surveys have supported the **Fair Seas** campaign and its proposed 16 **Areas of Interest** (AOIs) for Marine Protected Area (MPA) designation. (see map below)

These AOIs cover ~36% of Ireland's maritime area. Many remain sparsely surveyed, requiring baseline monitoring for **effective MPA** design and long-term assessment.

The aim of this study is thus to evaluate whether a small, low-impact, **volunteer-supported vessel** can deliver consistent **national-scale baseline data** on cetacean occurrence, relative encounter rates, richness and density across Ireland's coastal AOIs.



2023-2025 Survey overview

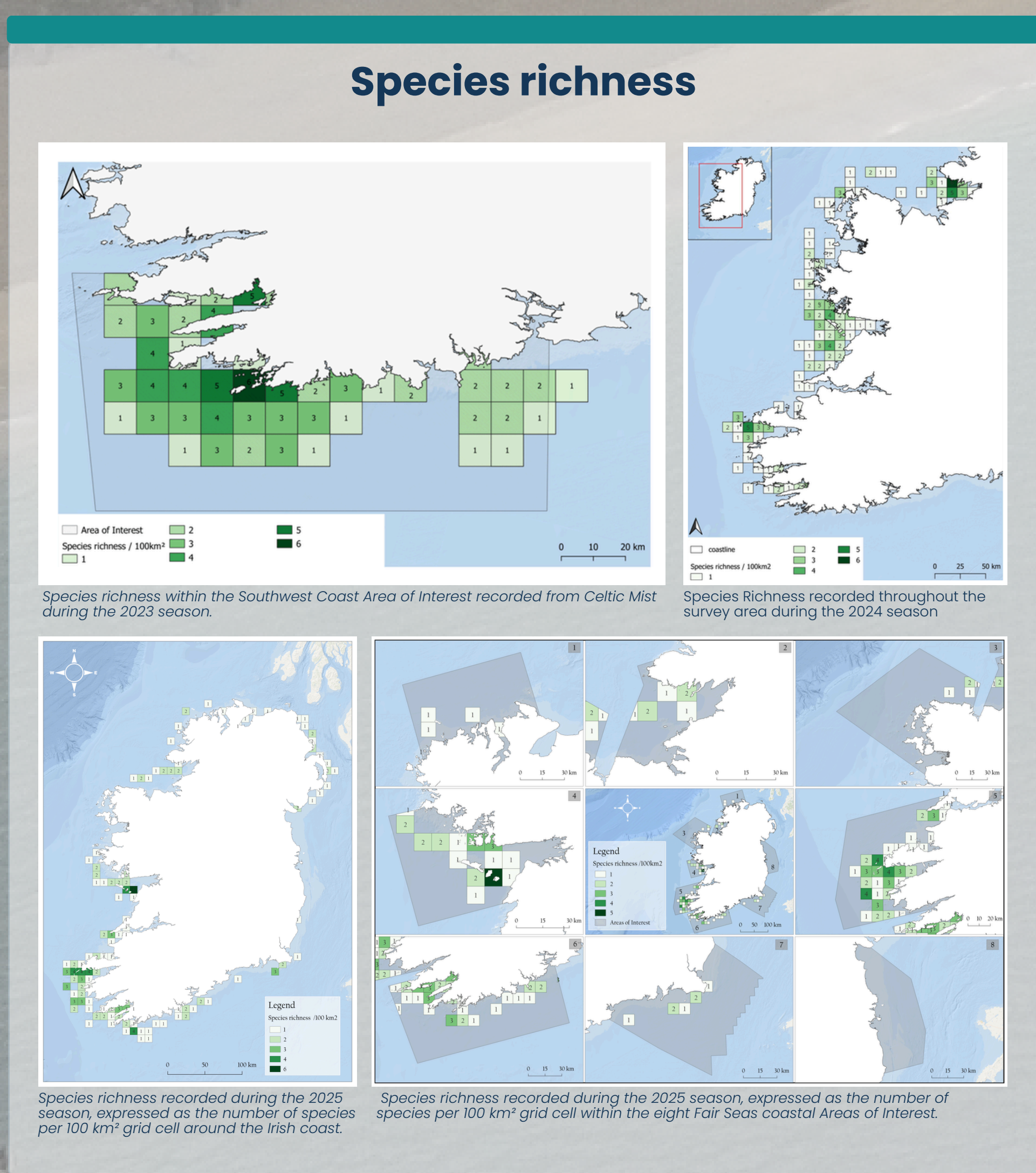
- > 10,120 km of tracklines
- ≥ 1,193 total sightings
- > 5,601 individuals recorded
- 13+ species identified

- Common dolphins dominated sightings across the multi-year dataset and the 2025 season.
- Southwest AOIs repeatedly emerged as important richness and density areas across years.
- All coastal AOIs surveyed in 2025 recorded cetacean and/or pinniped activity.
- Spatial outputs translate raw sightings into management-relevant baseline evidence.

Programme growth

Year	AOIs	km on-effort
2023	2 AOIs	2 333 km on-effort
2024	5 AOIs	2 537 km on-effort
2025	8 coastal AOIs	3 379 km track

- All coastal Fair Seas AOIs surveyed by 2025
- Evidence relevant to MPA design and monitoring
- Comparable effort-led observations across seasons
- Encounter rates, richness and density outputs



Policy relevance & objectives

The *Celtic Mist* survey programme helps address critical baseline evidence gaps across candidate **Marine Protected Areas** identified by **Fair Seas**.

By applying **standardised vessel-based surveys** across Ireland's **coastal AOIs**, the programme generates **comparable data** on cetacean and pinniped occurrence, relative encounter rates, species richness and spatial distribution.

These outputs provide management-relevant **evidence** to support MPA designation, future **status-and-trend monitoring**, and broader marine spatial planning.

The platform also captures contextual information on **human pressures**, including static gear and floating litter, while linking **citizen science**, volunteer training and conservation monitoring within a **repeatable national framework**.

Values of the platform

- Powered by trained volunteers contributing directly to marine mammal conservation
- Builds field skills in observation, species identification and effort logging
- Combines scientific monitoring with strong public engagement and outreach value
- Provides a low-disturbance, repeatable platform for broad coastal coverage
- Links people, evidence and protection within Ireland's emerging MPA network

A vessel of this class, operating with structured training and a clear protocol, can generate robust, comparable cetacean baseline datasets at national scale. The *Celtic Mist* approach combines low ecological footprint, repeatability and strong public engagement value, making it a practical framework for future AOI monitoring within Ireland's emerging MPA network, helping to support evidence-based designation, monitoring and adaptive marine conservation in Irish waters.

Acknowledgements:

IWDG members, volunteers, skippers, and biologists. This work is a collaboration between the Irish Whale and Dolphin Group and the Fair Seas campaign. Contact: research@iwdg.ie

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