

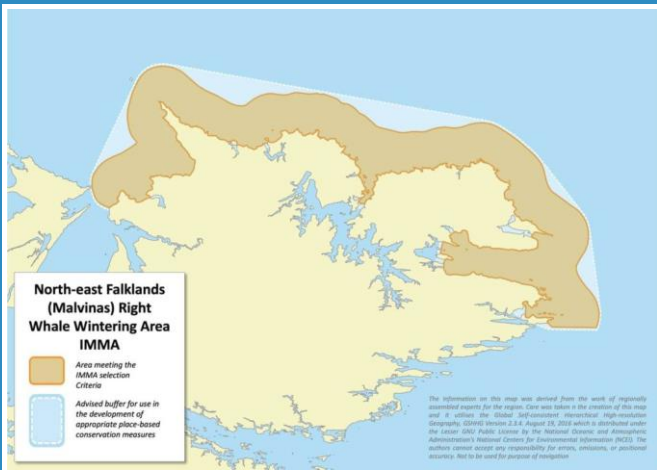
# North-East Falklands (Malvinas) Right Whale Wintering Area IMMA

\*Since 1965 the nomenclature used by the United Nations for statistical processing is Falkland Islands (Malvinas), which acknowledges the dispute that exists concerning the sovereignty of the Islands.

## Description:

The IMMA consists of nearshore neritic habitat located along the north and north-east coasts of East Falkland in the Falkland Islands (hereafter referred to as the 'Islands'), located at the eastern end of the Patagonian Shelf. Its boundaries extend from the waters around Cape Pembroke in the south-east, to the northern end of Falkland Sound in the west. Most of the site comprises exposed marine waters bordering coastline consisting of sand beaches and rocky cliffs. However, it also includes the large sea inlet of Berkeley Sound and the smaller inlet of Port William which is located adjacent to the port of Stanley Harbour. Those two areas include the heaviest shipping activity in the Islands. In contrast, the nearshore waters north of Volunteer Point and along the north coast of the Islands are relatively pristine and subject to little human activity. Water depths in the IMMA are shallow and do not exceed 70 m, except in the area off Cape Dolphin in the north-west where depths reach ~100 m. Inshore sea surface temperatures range from 2°C in winter to 14°C in summer (Otley et al., 2008).

The IMMA is proposed for southern right whales (*Eubalaena australis*), but is also used to an unknown extent by at least nine other marine mammal species, including Endangered sei whales (*Balaenoptera borealis*) during summer and autumn. The boundaries of the proposed site were determined by plotting the



## Area Size

1 663 km<sup>2</sup>

## Qualifying Species and Criteria

Southern right whale – *Eubalaena australis*  
Criterion B (2); C (1)

## Summary

This IMMA consists of coastal waters located along the north and north-east coasts of East Falkland in the Falkland Islands (Malvinas)\*. It extends to ~8 km from the coast, and primarily includes water depths of <70 m. The IMMA is a wintering destination for the south-west Atlantic population of southern right whales (*Eubalaena australis*), which aggregate seasonally in the area in regionally-important numbers between mid-May and early September. It comprises important reproductive habitat, including surface active mating groups. It is also used for socialising and rest, including by juveniles. The IMMA is a temporary migratory stop-off for some right whales that subsequently continue on to established South American calving areas. As such it has significant importance for reproductive activity of the species across the wider south-west Atlantic. The IMMA is also used by at least nine other marine mammal species, including endangered sei whales (*Balaenoptera borealis*) during summer and autumn.

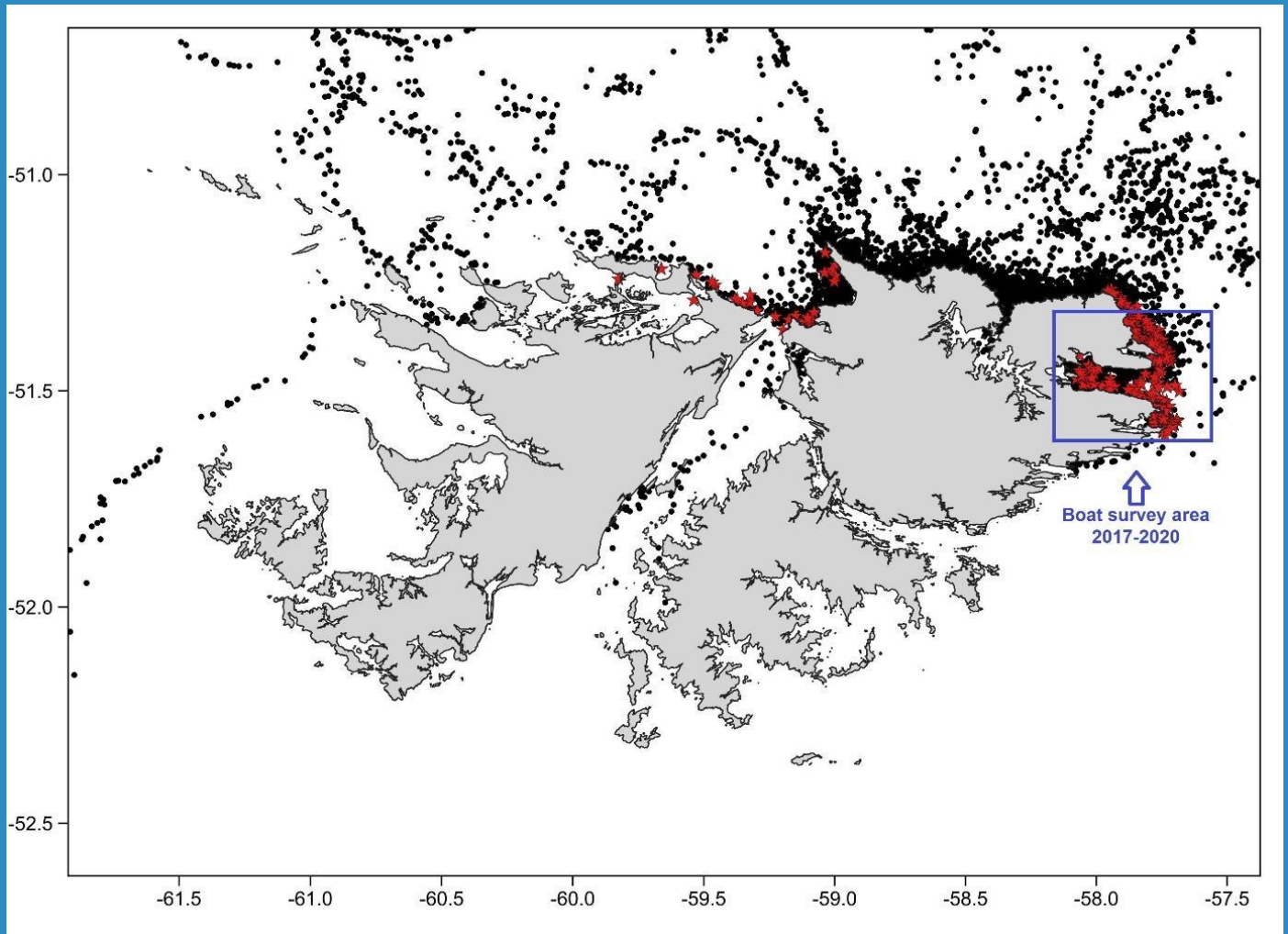


Figure 1: Location of southern right whale sightings during effort-related boat work 2017–2022 (red stars,  $n = 403$ ) and satellite tag locations in 2022 (black dots). The core study area for boat work between 2017 and 2021 is shown in the box, which contains the large inlet of Berkeley Sound. Effort extended slightly further north of the blue box in 2022 due to the improved capabilities of a new survey vessel.

spatial distribution of right whale sightings recorded during small boat surveys between 2017 and 2022 and by producing a heatmap of the telemetry positions of 10 right whales that were tagged in 2022.

The boundaries encompass the highest areas of use indicated by the heatmap and sightings data combined.

## Criterion B: Distribution and Abundance

### Sub-criterion B2: Aggregations

The IMMA supports a regionally important wintering aggregation of southern right whales (*Eubalaena australis*), which use the region as a mating, socialising and resting area (Weir & Stanworth, 2020;

Weir, 2022; Cerchio et al., 2022). Systematic research of baleen whales in the Islands only commenced in 2017, providing the first indication of the winter presence of right whale aggregations in nearshore areas (Weir, 2017). Since then, full winter seasons of coastal boat surveys to target the species have been carried out during 2019, 2020 and 2022 to assess its ecology and occurrence in the region (Weir & Stanworth, 2020; Weir, 2022).

Right whales have been present throughout the austral winter months of June, July and August in all three of those years, supporting the occurrence of persistent seasonal aggregations. Depending on the year, the aggregations are present between mid-May and early September, and whale numbers usually

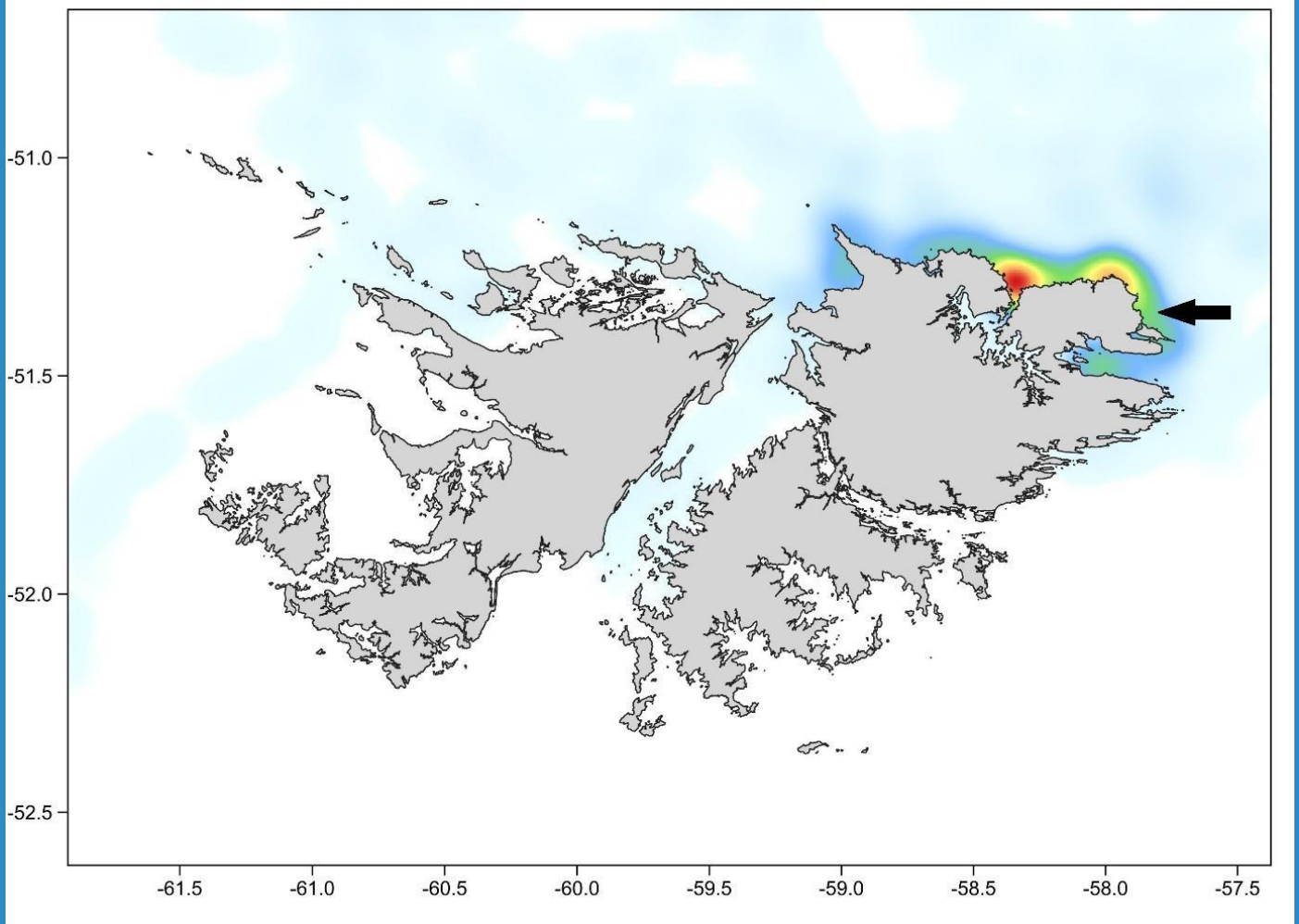


Figure 2: Heatmap of the locations of 10 southern right whales that were satellite-tagged in July 2022. The black arrow identifies the stretch of coast along which the tags were deployed. It is evident that the whales heavily used the area between Berkeley Sound and Foul Bay on the north-east coast of East Falkland, including heavy use of the entire north coast of East Falkland.

peak during July (Weir, 2022). However, both sightings and acoustic monitoring indicate that a regular occurrence within the IMMA can commence as early as March in some years (Weir, 2022; Cerchio et al., 2022), and that inter-annual variation probably relates to the foraging locations and prey availability in the months preceding the reproductive season.

The boundaries of the IMMA reflect the winter nearshore distribution of right whales and are based on: (1) results from small boat survey effort carried out between Cape Pembroke and MacBride Head on the north-east coast of East Falkland between 2019 and; (2) telemetry movements of 10 animals that were satellite-tagged in July 2022; and (3) opportunistic sightings from shore, boats and aircraft. Boat surveys

(and anecdotal records) support a very regular occurrence in Port William and around Cape Pembroke during some years (Weir & Stanworth 2020), a regular annual use of Berkeley Sound (also confirmed by acoustic monitoring: Cerchio et al., 2022), and a concentrated occurrence in the waters between Volunteer Point and MacBride Head (Weir, 2022; Falklands Conservation, unpublished data). Telemetry confirmed that the remote north coast of East Falkland is also heavily used by the species, with multiple individuals spending significant time in that area and confirming previous anecdotal reports of whale aggregations by aircraft pilots.

Genetic analysis of right whale samples collected in the IMMA during 2019 and 2020 has demonstrated

their connectivity with animals sampled at the Valdés Peninsula in Argentina (Jackson et al., 2022), which is the major calving area for the species in the south-west Atlantic. This indicates that southern right whales present in the IMMA in winter are part of the wider south-west Atlantic population that undertakes seasonal migrations between calving and feeding areas. Currently, the calving grounds are well-documented while the foraging areas remain relatively poorly described, and the Islands therefore potentially represent an important geographic link between some areas used for important life cycle activities at either end of the migration route.

Right whale numbers in the Islands peak earlier in the winter (July and August: Weir, 2021, 2022) than they do at the Valdés Peninsula (September and October: Rowntree et al., 2001), suggesting that the same animals can potentially move between the two areas within the same breeding season. Satellite telemetry carried out during July 2022 showed that 6 of 10 animals tagged in the IMMA subsequently continued on to the Valdés Peninsula after leaving the Islands (<https://falklandsconservation.com/southern-right-whale-tracking/>). This indicates that whales (likely including pregnant females preparing to calve) may use the IMMA as a temporary migratory stopover, while transiting across open ocean between foraging areas and the Valdés Peninsula. Depending on their age-sex class and reproductive cycles, animals may potentially stop to socialise and mate, before continuing their migration.

Photo-identification and satellite-tagging data indicate that some individual animals remain within the IMMA for (at least) two consecutive months during winter, which emphasises the importance of the area as a destination rather than solely transitory use (Weir, 2022; Falklands Conservation, unpublished data). Satellite-tracking data confirm that individuals move back and forth along the coast during their

time within the area. Inter-annual photo-identification recaptures confirm that some of the same individuals return to the site annually, indicating long-term site fidelity to the wintering area. Acoustic work in Berkeley Sound revealed a continuous daily presence of vocalising southern right whales between (at least) late May and early September (Cerchio et al., 2022), and it is considered highly likely that this continuous presence occurs across the entire IMMA.

The total number of whales using this area is currently unknown. Photo-identification effort during small boat work has catalogued around 300 individuals between 2017 and 2021 (Weir, 2022; Falklands Conservation, unpublished data). However, that effort has been very limited in spatial extent and its temporal frequency was strongly confined by weather conditions; consequently, the true number of animals using the areas is likely to be considerably higher. Estimating abundance across the IMMA will be the focus of targeted aerial survey work in 2023.

## **Criterion C: Key Life Cycle Activities**

### **Sub-Criterion C1: Reproductive Areas**

The underlying driver for the right whale wintering aggregations in the IMMA (see Criterion B2) appears to be social and reproductive behaviour. Feeding has not been conclusively documented within the IMMA during winter, and defecations are very rarely observed and only by animals engaged in surface-active behaviour and clearly not feeding (Weir, pers. obs.). The presence of surface-active groups is considered indicative of mating behaviour, and frequent observations have been recorded of mating amongst pairs and groups (Weir & Stanworth, 2019; Weir, 2022; Falklands Conservation, unpublished data). Additionally, two years of acoustic monitoring in Berkeley Sound recorded numerous calls and gunshot song; the latter is considered to be a form of



Figure 3: Southern right whale (*Eubalaena australis*) mating group in the IMMA during 2020.  
Photo credit: Caroline R. Weir / Falklands Conservation

male reproductive advertisement (Cerchio et al., 2022). No neonate calves have been recorded to date in the IMMA or adjacent waters, and it is considered to currently comprise a mating-only breeding area. However, the presence of juveniles suggests that right whale occurrence in the site encompasses more than solely mating behaviour for reproductive purposes, potentially including social behaviour and rest.

## Supporting Information

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