

**Template for Submission of Scientific Information
to Describe Areas Meeting Scientific Criteria for
Ecologically or Biologically Significant Marine Areas**

Title/Name of the area: North West Atlantic Seabird Hotspot

Presented by (*names, affiliations, title, contact details*)

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Abstract *(in less than 150 words)*

Tracking data from 20 species, representing 40 populations of North Atlantic breeders and southern hemisphere migrants, was used to quantify the mesoscale diversity and relative abundance of seabirds within the region. These data revealed a hitherto undescribed hotspot approximately 1,000,000 km² in extent in waters >3000 m deep between the Grand Banks and the Mid-Atlantic Ridge (MIR), south of the Charlie Gibbs Fracture Zone (CGFZ). This area was used by 17 species during one or more key life history stages. Despite considerable variability within individuals, populations and species, the hotspot persisted throughout the year, its location coinciding with the sub-Polar Frontal zone. The hotspot is also used by other wide-ranging megafauna, including Atlantic bluefin tuna (*Thunnus thynnus*) and Leatherback turtle.

Introduction

(To include: feature type(s) presented, geographic description, depth range, oceanography, general information data reported, availability of models)

The area is particularly important for the majority of migratory seabirds found in the Atlantic Ocean, being used by birds from North Atlantic breeding colonies for feeding during the breeding season, as a stopover site during migration by birds from both North and South Atlantic colonies and by non-breeding birds that have migrated here from colonies in the South Atlantic.

The area has been shown to be particularly important for Northern Fulmar (Edwards et al 2013), Cory's Shearwater from Azores and Canary Current populations (Catry et al 2011; Dias et al 2012), Sooty Shearwater from Falkland (Hedd et al 2012) and Gough Islands (Ronconi unpublished data) populations, Greater Shearwater (Ronconi et al 2010), Baroli's Shearwater (Neves et al 2012), Manx Shearwater (Guilford et al 2009), Fea's Petrel (Ramirez et al 2013), South Polar Skua (Kopp et al 2011), Long-tailed Jaeger (Sittler et al 2010), Black-legged Kittiwake from Spitsbergen, Barents Sea and Norwegian Sea populations (Frederiksen et al 2011), Arctic terns (Egevang et al 2010), and Thick-billed Murre (McFarlane Tranquilla et al 2013).

Recent evidence from the satellite tracking of North Atlantic baleen whales has shown this area to be a potential important migration pathway from Fin, Sei and Blue whales (Prieto et al., 2012, Silva et al., 2013). Furthermore this evidence may indicate that these species may use mid latitude areas within the proposed EBSA as rest areas whilst traveling between the Azores and high latitude summer feeding grounds (Silva et al., 2013).

The area's oceanography is analogous to the North Pacific transition zone chlorophyll front. It is influenced by all main ocean currents in the area including the Gulf Stream, Labrador Current and North Atlantic Current. It is also at the interface between the sub-polar and sub-tropical gyres.

Location

(Indicate the geographic location of the area/feature. This should include a location map. It should state if the area is within or outside national jurisdiction, or straddling both.)

Covering an area of approximately 1,000,000 km² in Areas Beyond National Jurisdiction the site is primarily over waters >3000 m deep, situated between the Grand Banks and the Mid-Atlantic Ridge, south of the Charlie Gibbs Fracture Zone.

Feature description of the proposed area

(This should include information about the characteristics of the feature to be proposed, e.g. in terms of physical description (water column feature, benthic feature, or both), biological communities, role in ecosystem function, and then refer to the data/information that is available to support the proposal and whether models are available in the absence of data. This needs to be supported where possible with maps, models, reference to analysis, or the level of research in the area)

This study collated tracks of species known or suspected to use the oceanic North Atlantic. Data on the movements of 960 individuals of 20 species from 40 populations were brought together for the first time to undertake the most comprehensive analysis of seabird tracking data ever conducted within the Atlantic. 75% of birds were tracked by GLS, 17% were tracked by GPS, and 8% were tracked by PTT devices.

The analysis identified core species/ population ranges using kernel and grid analysis which allowed the quantification of species richness in both time (quarterly) and space (50 km grid) and ultimately delineated diversity hotspots.

Using a combination of GPS and geolocation tracking data, a male fulmar, breeding on the Scottish coast, foraged over areas of persistent thermal fronts along the Charlie-Gibbs Fracture Zone of the Mid-Atlantic Ridge during the incubation period (Edwards et al 2013).

Feature condition and future outlook of the proposed area

(Description of the current condition of the area – is this static, declining, improving, what are the particular vulnerabilities? Any planned research/programmes/investigations?)

Longline fishing effort is relatively low in the area and concentrated during the winter months, but has increased dramatically in the east of the study area over the past 10 years.

Assessment of the area against CBD EBSA Criteria

(Discuss the area in relation to each of the CBD criteria and relate the best available science. Note that a proposed area for EBSA description may qualify on the basis of one or more of the criteria, and that the polygons of the EBSA need not be defined with exact precision. And modeling may be used to estimate the presence of EBSA attributes. Please note where there are significant information gaps)

CBD EBSA Criteria (Annex I to decision IX/20)	Description (Annex I to decision IX/20)	Ranking of criterion relevance (please mark one column with an X)			
		No information	Low	Medium	High
Uniqueness or rarity	Area contains either (i) unique (“the only one of its kind”), rare (occurs only in few locations) or endemic species, populations or communities, and/or (ii) unique, rare or distinct, habitats or ecosystems; and/or (iii) unique or unusual geomorphological or oceanographic features.			X	
<i>Explanation for ranking</i>					
The site is rare in that it is one of the few sites in the entire Atlantic Ocean to include such a broad range of migratory seabird species. The areas oceanography is analogous to the North Pacific transition zone chlorophyll front, a feature recognised as unique in the N pacific EBSA workshop.					
Special importance for life-history stages of species	Areas that are required for a population to survive and thrive.				X
<i>Explanation for ranking</i>					
The site is used year round by different species during different life-history stages, and is used during breeding, migration and non-breeding periods. The site is particularly important for one or more life-history stages of northern fulmars, Cory’s shearwaters (Azores and Canary Current populations), sooty shearwaters, great shearwaters, Baroli’s sheawaters, Manx shearwaters, Fea’s petrels, South polar skuas, Long-tailed jaegers, Black-legged kittiwakes (Spitsbergen, Barents Sea and Norwegian Sea populations), Arctic terns, and Thick-billed murrens.					

Area is used by migrating baleen whales (Blue, Fin and Sei whales) potentially as mid latitude foraging/rest stops between the Azores and northerly areas. The area is also used by other marine mega fauna including post-nesting Leatherback turtles and migrating Atlantic Bluefin Tuna.					
Importance for threatened, endangered or declining species and/or habitats	Area containing habitat for the survival and recovery of endangered, threatened, declining species or area with significant assemblages of such species.			X	
<i>Explanation for ranking</i>					
Sei Whale and Atlantic Bluefin Tuna are listed by IUCN as Endangered, Fea's Petrel and Leatherback Turtle are listed as Vulnerable, Sooty Shearwater is listed as Near Threatened					
Vulnerability, fragility, sensitivity, or slow recovery	Areas that contain a relatively high proportion of sensitive habitats, biotopes or species that are functionally fragile (highly susceptible to degradation or depletion by human activity or by natural events) or with slow recovery.				
<i>Explanation for ranking</i>					
Biological productivity	Area containing species, populations or communities with comparatively higher natural biological productivity.			X	
<i>Explanation for ranking</i>					
The areas oceanography is analogous to the North Pacific transition zone chlorophyll front. It's influenced by all main ocean currents in the area including the Gulf Stream, Labrador Current and North Atlantic Current. It's also at the interface between the sub-polar and sub-tropical gyres. These features together are likely to result in higher than normal biological productivity.					
Biological diversity	Area contains comparatively higher diversity of ecosystems, habitats, communities, or species, or has higher genetic diversity.			X	
<i>Explanation for ranking</i>					
The area is used by nearly all migratory seabirds found within the Atlantic Ocean during some time of the year. Cetaceans such as Blue, Fin and Sei whale migrate through this area.					
Naturalness	Area with a comparatively higher degree of naturalness as a result of the lack of or low level of human-induced disturbance or degradation.	X			
<i>Explanation for ranking</i>					
This was not assessed systematically, but being far from land, and generally deep, the area is presumably relatively natural.					

Sharing experiences and information applying other criteria (Optional)

Other Criteria	Description	Ranking of criterion relevance (please mark one column with an X)			
		Don't Know	Low	Medium	High
<i>Add relevant criteria</i>	BirdLife International Important bird Areas				X
<i>Explanation for ranking</i>					

References

(e.g. relevant documents and publications, including URL where available; relevant data sets, including where these are located; information pertaining to relevant audio/visual material, video, models, etc.)

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Maps and Figures

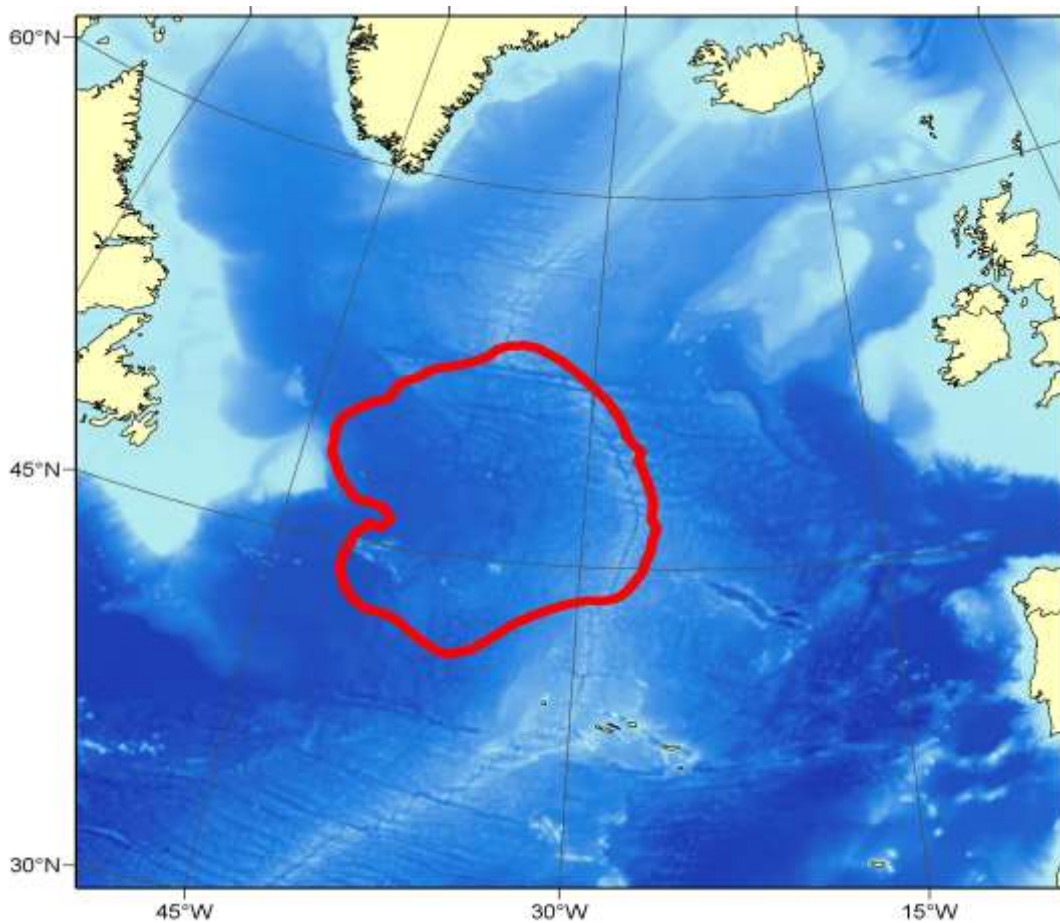


Figure 1: Location of the NW Atlantic seabird hotspot

- 960 individuals
- 20 species
- 40 populations
- 75% birds tracked by GLS
- 17% birds tracked by GPS
- 8% birds tracked by PTT

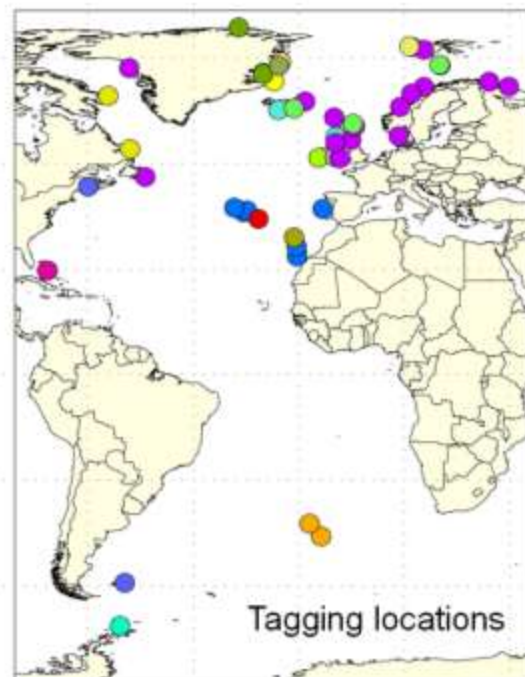


Figure 2: showing tagging locations of datasets including within the analysis, along with a summary of the number of species, individuals and data types collected.

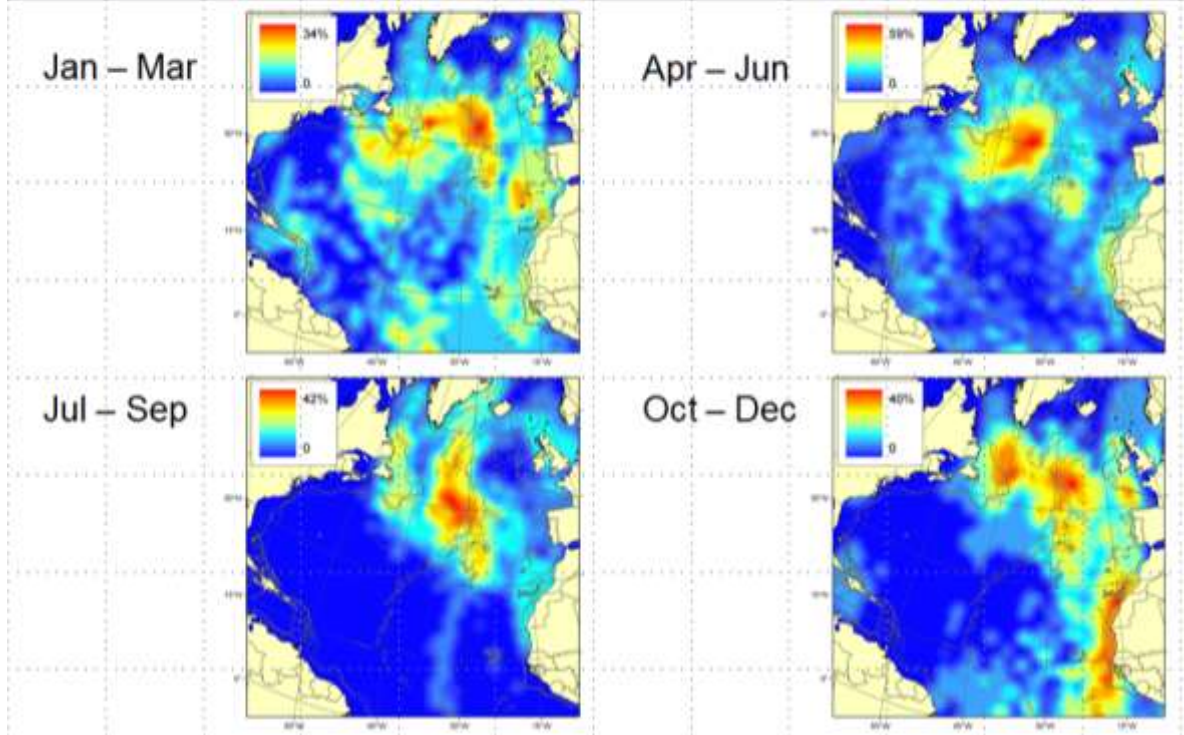


Figure 3: Seasonal species richness within the north atlantic

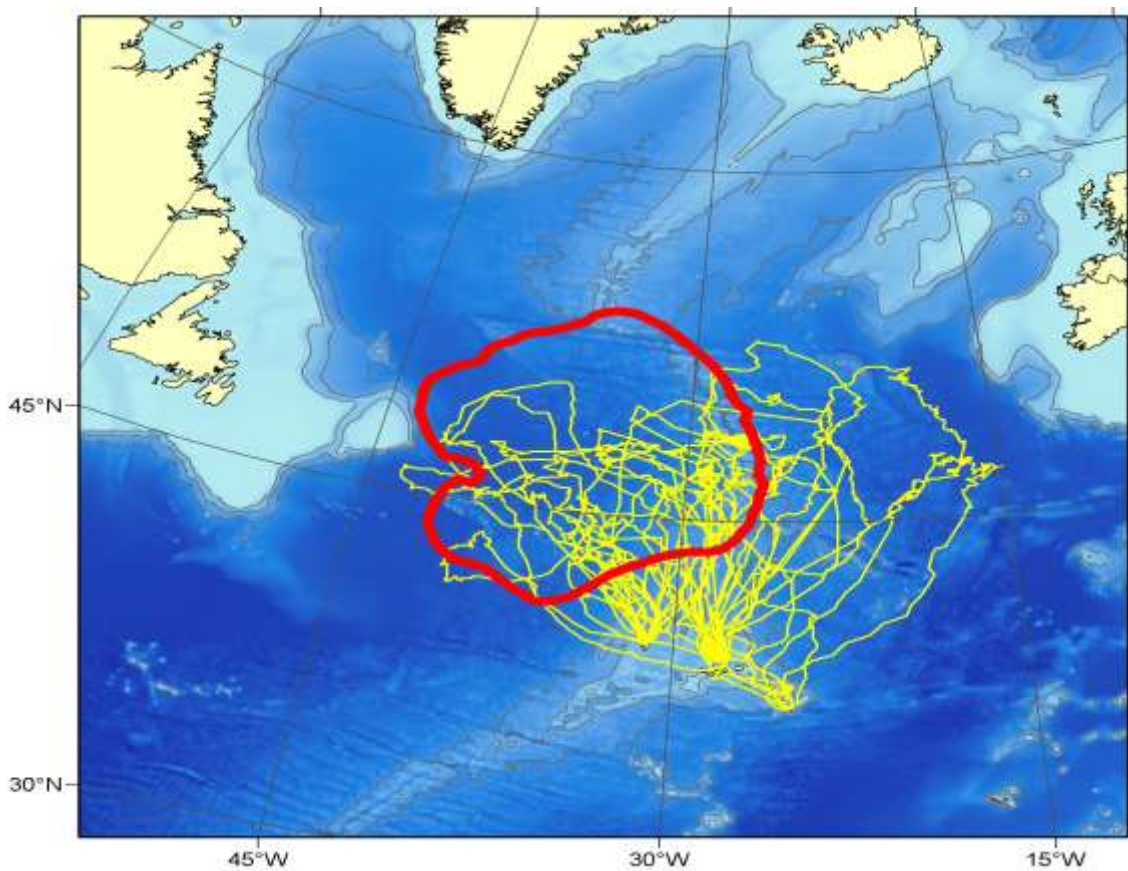
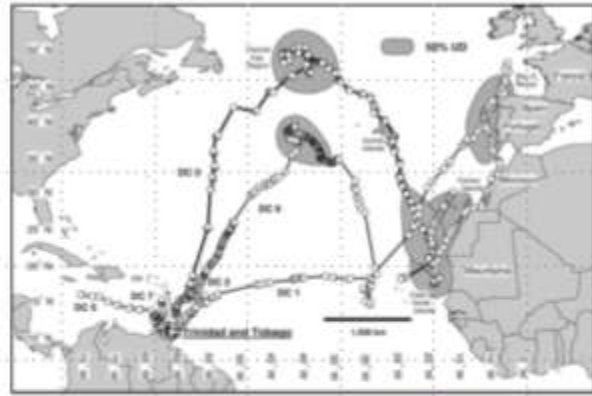


Figure 4: Showing use of the area by chick rearing Cory's shearwaters tracked (n = 21) from the Azores.

Post-nesting leatherback turtles (Eckert 2006)



Bluefin tuna, W to E migration (Wali et al. 2009)

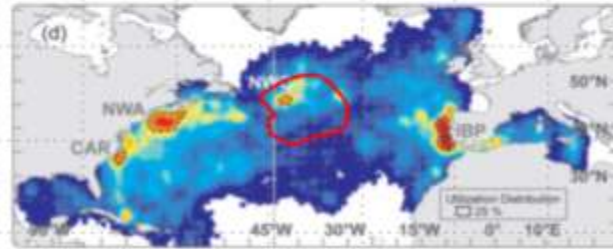
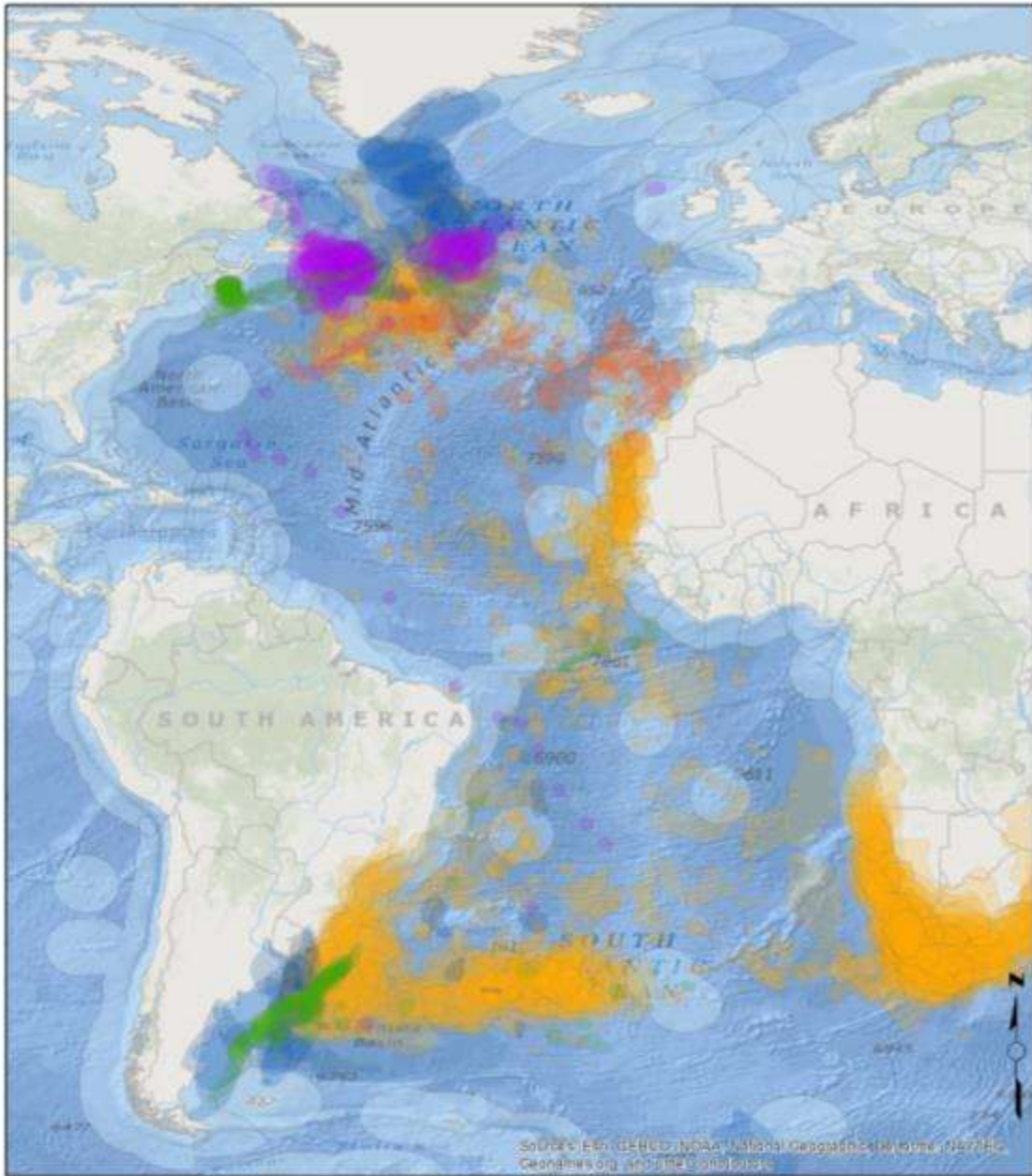


Figure 5: use of the area by other higher predators



Legend:

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sooty Shearwater - NB (Kidney Isl) | Cory's Shearwater - NB |
| Sooty Shearwater - NB (Gough Isl) | Cory's Shearwater - Pre-laying |
| Great Shearwater - NB | EEZ |

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Figure: Showing hotspots for four species of Atlantic shearwater, as defined by kernel analysis of tracking data.

Rights and permissions

(Indicate if there are any known issues with giving permission to share or publish these data and what any conditions of publication might be; provide contact details for a contact person for this issue)

Seabird tracking data has been generously provided by a large number of individuals and research institutes (see below for full list). Underlying data is housed at www.seabirdtracking.org and has been analysed by birdlife International. Future requests to use this data should be directed to seabirds@birdlife.org in the first instance.

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