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NEWSLETTER 159

June 2025

News

A call to report odd-servations

Sophie Bennet, BTO

Every year several hundred highly skilled surveyors and ringers head to seabird colonies to collect essential data on our globally important seabird populations. During the season these dedicated groups may monitor everything from plot counts of **Black-legged Kittiwakes** (*Rissa tridactyla*) to annual survival of **Common Guillemots** (*Uria aalge*). However, in addition to this, and due to their vast experience, they are likely to notice unexpected changes in colonies, e.g., large increases in marine litter at colonies, and/or changes in the birds themselves, e.g., very poor feather condition or large amounts of retained winter plumage. These odd observations may be shared amongst surveyors or ringers within a season, particularly when there are whispers that other folk may be observing the same thing elsewhere in the UK. However, commonly these often less quantitative observations aren't recorded - either anywhere (there's already lots of data to proof and submit...), or not in places that are easily accessible. For example, anecdotal observations may currently be recorded in blogs, but these can be difficult to find. The value of these observations is often not realised until we need to refer to them, e.g. for context of a particular year, trying to understand how widespread an observation is, or trying to understand effects of new threats on birds, etc.

With that, we wanted to encourage folk to report notable observations from their field sites at the end of the season to the Seabird Group newsletter, but also to publications like British Birds, and the Seabird Monitoring Programme newsletter, where appropriate. Reporting in these publications may facilitate getting in touch with others that have similar observations and may be incredibly useful for others or to refer back to in the future (as well as intriguing in the present).

To kick things off we've got one below from some fieldwork that our seabird tagging team saw last breeding season at the Whinnyfold cliffs in the Buchan Ness to Collieston Coast SPA in Aberdeenshire: From ~June onwards at Whinnyfold last year we noticed green colouration of the guano around Kittiwake nests, and on the vents of several birds that were caught. In many sub-colonies this discolouration extended to stain the circumference of nest cups.

This staining has not been observed at the Whinnyfold site across the > 40 years that the Grampian Ringing Group has been ringing Kittiwakes, and we are not aware of this observation being recorded in Kittiwakes elsewhere. The colour may come from high levels of bile in the guano; bile-like faeces can be induced by experimental starvation in seabirds. We have only come across a single record of green guano in wild seabird populations: in **Sooty Tern** (*Onychoprion fuscatus*) in the Seychelles (<https://wildbirdconservation.wordpress.com/2021/07/15/a-green-poo-puzzle>).

If this is the case in the Kittiwakes, then the staining may have been caused by starvation or another factor, e.g. dietary change or liver disease. If the discolouration is a reliable indicator of birds entering starvation, then it could be a useful sign for seabird fieldworkers to monitor in the future.

If you spot green staining on Kittiwake nests at colonies that you visit in 2025, do take a photo and send it on if you can (especially if you're at a colony where Kittiwake diets are also monitored). We'd be very keen to hear from you.

Contact the author using sophie.bennett@bto.org.



Photo: Ewan Weston, June 2024.

An early career researcher's first academic conference

Elanor Knight-Rolfe

Back in September 2024, I set off for Portugal with a bottle of SPF 50, an academic poster, and a vague idea of what to expect. I'd never been to a seabird conference - or an academic conference at all. I'd done some research on the region, and knew to expect heat, humidity, and hills - and on those, Coimbra truly delivered. It also delivered amazing views, gorgeous architecture, and some of the best food and drink (we tried as many places as possible, to be certain).

The conference itself was at the top of a hill, in the beautiful Universidade de Coimbra. As we arrived for the first day, we joined the stream of conference attendees and got talking to some colleagues from different universities. Although I only knew the two people I'd travelled with, I knew there were one or two people there that I'd spoken with for my project on Kittiwakes, and I was keen to meet them in person! Any concerns I had about introducing myself to strangers disappeared as soon as we gathered for the breakfast, as several people went out of their way to speak to me - perhaps I looked a bit lost. We got acquainted over coffee, juice and pastries, and talked a little about our projects, which gave me a great sense of the breadth and depth of the research projects represented by the attendees.

The conference schedule was packed full of interesting talks and presentations, with some that I immediately highlighted as essential listening for my project research - however, considering this was my first conference, I was determined to attend them all, and speak to anyone who would entertain my questions! The atmosphere was friendly and collaborative, with plenty of humour and so many opportunities to network with scientists working on adjacent research. I was told that the 'seabird lot' were very friendly and welcoming, and that's definitely what I found to be true. I came away from the conference with pages of notes and things to follow up on when I returned to England - and I came away from Coimbra with a new appreciation for the food, the culture, the scenery and the language (which I absolutely butchered in my attempts to learn key phrases). All in all, it was a fantastic first conference, and I couldn't have imagined how much fun I'd have, or how useful and inspiring it would be for me as an early career researcher. I'd put my name down for another one in a heartbeat!

The Call of the Loon seabird recording expedition

Roland Arnison

A quest to find and record the calls of all of Scotland's seabird species, travelling solo by sea kayak.

In early June 2025, Roland Arnison will launch his kayak on the island of Barra in Scotland's Western Isles and paddle southwards, armed with microphones, cameras, and camping kit, to continue the Call of the Loon expedition. He began this quest to find, sound-record, photograph, film and research Scottish seabirds in 2024 and spent most of that summer immersed in the fascinating, wild, wonderful world of seabirds, visiting seabird colonies on remote islands around the Hebrides.

The expedition has multiple aims, all centred on researching and raising awareness about seabirds, with a core objective of recording their calls at sufficiently high quality to share on research platforms. Roland is also carrying out his own field research in the form of simple transect and point surveys of seabirds (rarely done by sea kayak) along with observations of unusual sightings and notable behaviour. The expedition is named in reference to Roland's quest to record the beautiful, ethereal, hair-raising call of the Great Northern Diver: The Call of the Loon.



Roland in his kayak. Photo: Roland Arnison.

In 2024, Roland succeeded in capturing good sound recordings of 22 seabird species including the rare **Little Tern** (*Sternula albifrons*), the contented rumble of puffins, the fax-like chitter-click of **Storm Petrels** (*Hydrobates pelagicus*), the downright weird howls of the **Manx Shearwater** (*Puffinus puffinus*) – and a single, brief recording of a Great Northern Diver (*Gavia immer*) off the west coast of Mull. He also carried out 53 seabird surveys and interviewed several seabird researchers he met during his travels around the Hebrides.

This year Roland is hoping to record the remaining species on his target list, with the help of data from the Seabird Monitoring Programme and other seabird researchers and rangers, including the rarely seen **Leach's Storm Petrel** (*Hydrobates leucorhous*) and **Arctic Skua** (*Stercorarius parasiticus*). He will also continue his seabird field research as he paddles around the Outer Hebrides during June and July, and hopes to meet any other seabird researchers working in this region this summer. Any seabird researchers, experts or enthusiasts interested in meeting with Roland should contact him directly. Roland is also open to requests for practical research tasks or information-gathering that he may be able to carry out on this expedition, potentially making use of cameras and audio-recorders including a trail camera and remote audio-recorder supplied by NHBS.

More information about the Call of the Loon expedition can be found at:

<https://rolandarnison.co.uk/call-of-the-loon-expedition/> and via the expedition blogs:

<https://rolandarnisonadventures.wordpress.com/category/call-of-the-loon/>.

Roland's progress can also be followed on Facebook (@rolandarnison) and Instagram (@rolandarnisonadventures).

Roland is seeking financial support for the costs of this expedition: any support given through the Call of the Loon Crowdfunder <https://www.crowdfunder.co.uk/p/call-of-the-loon-expedition-2025> is appreciated, and any organisation interested in the benefits of sponsoring the expedition should contact Roland directly (roland@shearwater.me.uk).

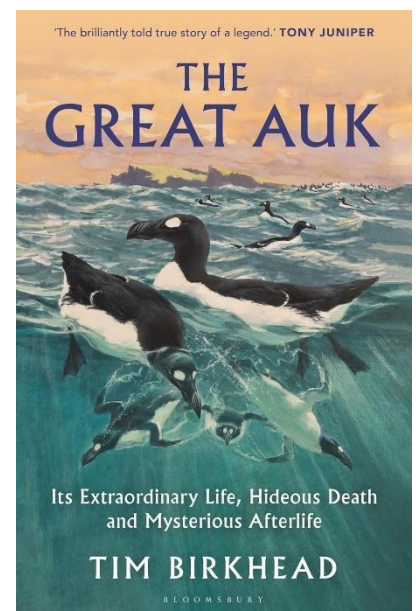
A long-term study of Common Guillemots on Skomer Island, Wales – auks on film

Tim Birkhead

I first went to Skomer in the summer of 1972 prior to starting my PhD the following year, and fell in love with both the birds and the island. I have been back almost every year since. My PhD focussed on the **Common Guillemot's** sophisticated social behaviour — an adaptation to its high-density breeding that, among other things, provided opportunities for plenty of promiscuity. The other aim was to understand why Guillemots, along with **Puffin** (*Fratercula arctica*) and **Razorbill** (*Alca torda*) numbers in the UK were in decline — a goal for which a three-year PhD was inadequate. The only solution was to continue, and that's what I have done year after year, and funded by public donations since 2014. By that date my collaborator Ben Hatchwell and I had a good idea of how the Guillemot population worked and thereafter we switched our main focus to rigorous, scientific annual monitoring. This has paid dividends by allowing us to assess not only the effect of climate change on Guillemot population dynamics, but also the consequences of the 2023 bird flu outbreak. In July and August 2023 some 20-30% of adult Guillemots on Skomer died as a result of bird flu. Subsequently we have been looking at the after-effects of that massive mortality. One consequence is 'compensatory recruitment', in which birds that would not normally enter the breeding population until they were older, find opportunities to start breeding. The phenomenon of compensatory recruitment has been known for a long time, so this result was not unexpected, but by being able to follow a large number of individually marked Guillemots on Skomer we were able to see in detail how young birds moved into the population and how successful (or more usually, unsuccessful) they were. One consequence of compensatory recruitment is that populations often return to pre-perturbation (in this case, bird-flu) levels much more rapidly than we might expect from the mortality. On the surface, this bounce-back of numbers may seem like a good thing, but the recruitment of younger-than-normal breeders into the population is equivalent to eating into your capital rather than living off the interest it generates, so it will be interesting to see how Skomer's Guillemot population fares in future years.

Bird flu also had a serious negative impact on other bird species, especially **Gannets** (*Morus bassanus*), **Black-headed Gulls** (*Chroicocephalus ridibundus*) and Bonxies (**Great Skua**) (*Stercorarius skua*), and is a brutal reminder of the fragility of bird populations. The world's seabirds declined by seventy percent between 1950 and 2010 and the risk of extinction — almost entirely as a result of human activity — looms ever larger. It was partly for this reason that I wrote *The Great Auk* (published in March this year), since the **Great Auk** (*Pinguinus impennis*) was the first species whose extinction in 1844 was identified as being due to human activities. The book is also a tale of skullduggery and the obsession some people have with Great Auk relics. Assuming you could find one, if you wanted to purchase a stuffed Great Auk, for example, you would not get much change out of £100,000.

My brother Mike, also a zoologist, is a wildlife filmmaker (<https://mikebirkhead.com/>) and had recently completed a film *My Tiger family with Valmik Thapar* (available on BBC iPlayer) employing an up-and-coming filmmaker Edo Dzafic. Mike suggested to Edo that he might make a short film about my 50+ years of studying Guillemots on Skomer and this is the result: <https://vimeo.com/1063680641/21c788edaa>



Geometric morphometrics or the human eye - which is better at sexing the Little Auk (*Alle alle*) by head shape?

Feliksa Zurawska

The **Little Auk** (*Alle alle*) is a small monogamous seabird breeding in the High Arctic. There is not apparent sexual dimorphism, only males are slightly bigger than females¹. The main difference in sizes can be found in measurements of the head and bill, but

¹ Jakubas, D. & Wojczulanis, K. (2007a). Predicting the Sex of Dovekies by Discriminant Analysis. *Waterbirds*, 30(1), 92–96. [https://doi.org/10.1675/1524-4695\(2007\)030\[0092:PTSODB\]2.0.CO;2](https://doi.org/10.1675/1524-4695(2007)030[0092:PTSODB]2.0.CO;2).

there is still a big overlap. It seemed interesting to me, and to look deeper I started to look for differences in the shape, as it is rarely considered but many ornithologists say they can see it. I assume that males have flatter heads than females. To test it I compared two approaches – geometric morphometrics and a survey made of people. It seemed interesting to me – can mathematical analysis show differences the human eye cannot see, or maybe the human eye can see differences that are elusory for maths?

Head shape variation in birds is usually studied on skulls, but I was interested in a method that does not require killing birds, can be easily applied in the field and is possible to study both on humans and with mathematical analysis. I analysed 65 (31 female, 34 male) pictures of Little Auk's head profile, taken during fieldwork in a breeding colony at Arikamenn Slope in Hornsund, SW Spitsbergen, using landmark-based geometric morphometrics. As the curve of the birds' heads were of interest, I placed three landmarks (fixed homologous points) and 12 semi-landmarks (non-homologous points) along the forehead (Figure 1). I performed a principal component analysis and plotted the result to visually represent the results (Figure 2).

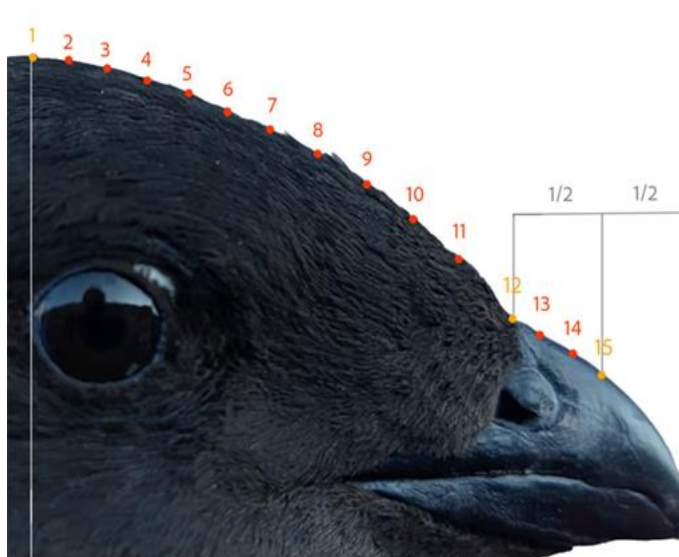


Figure 1: Placement of landmarks (yellow) and semi landmarks (red).

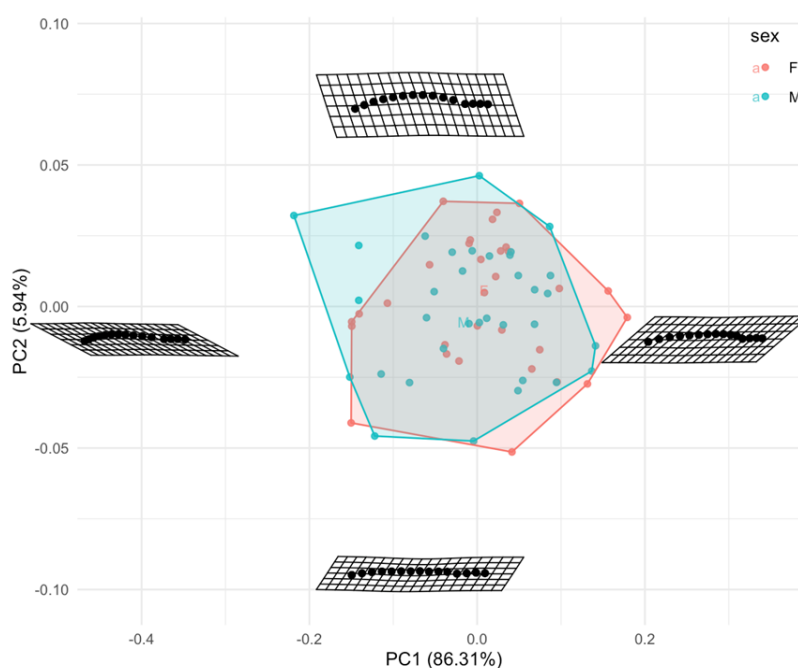


Figure 2: Graphical representation of PCA showing directions of changes in shape for PC1, PC2 on the grids. Sex is included.

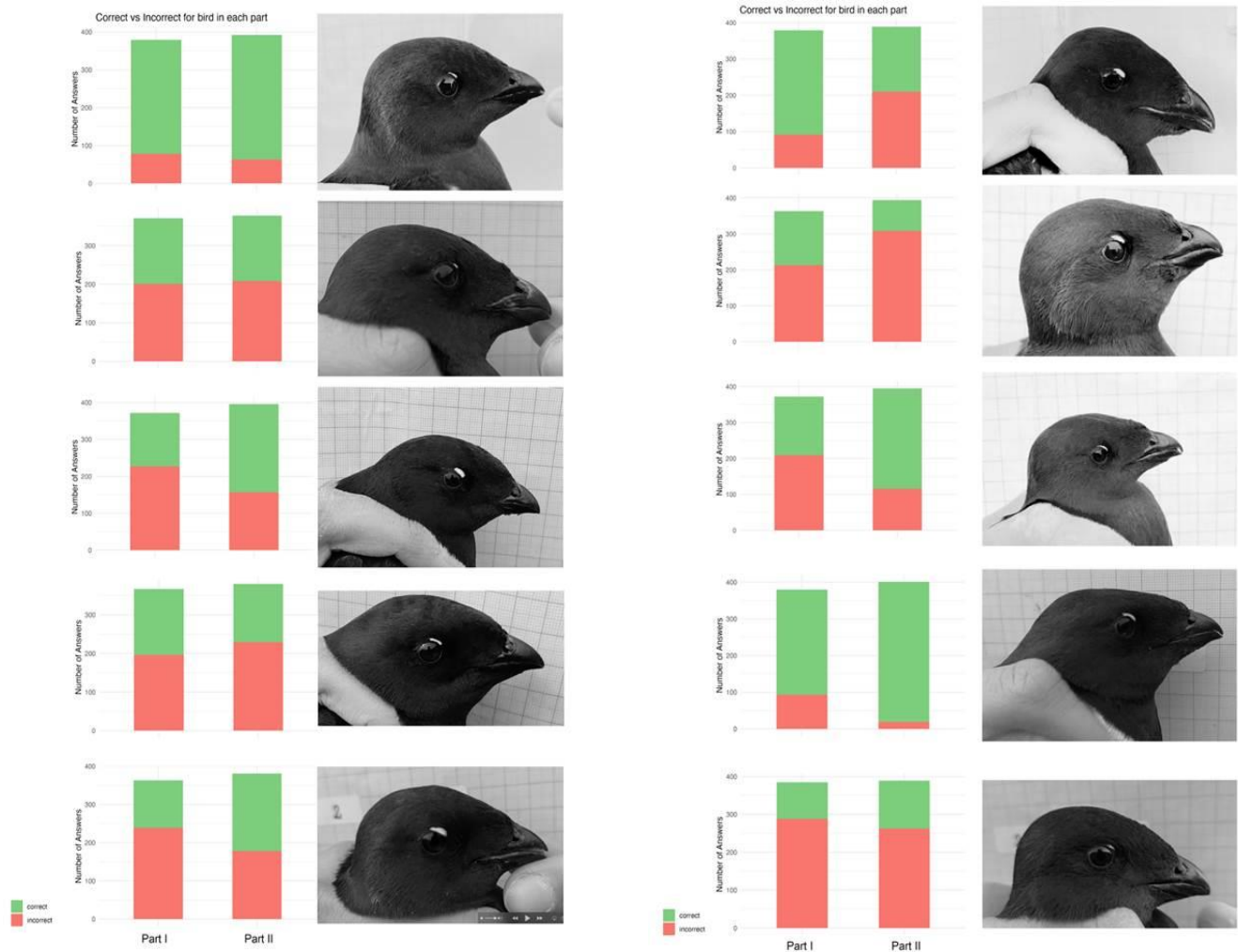


Figure 3 and 4: Correct and incorrect answers for females (left hand image) and males (right hand image) in both parts compared with photos from the survey.

To check people's ability to correctly sex the Little Auk, I created an online survey which contained 10 pictures of Little Auk's head profiles (5 females, 5 males) and was divided into two parts - the first in which the difference was not explained, and the second (that had the same pictures in a different order) where people were told that males are assumed to have flatter heads than females. I collected 404 responses in total.

The geometric morphometrics analysis did not indicate any significant differences in head shape between sexes. A similar result was obtained from the survey. People were more accurate in the second part where they had been told where to look for differences (53% versus 46% of correct responses). Females were sexed correctly in 46% while males in 55%. The proportions of correct answers for sexes were different – 54% for females and 46% for males. It may indicate that people are able to see differences in head shape between males and females but both values are near 50% - so not much different from what could be said by chance. Moreover, the responses between correct answers for males and females didn't vary much between parts. Thus, I can speculate that people naturally are looking for differences in the shape (it's more obvious when I compare answers for each bird) (Figures 3 and 4). Because of high accuracy in both parts for males with extremely flat heads and females with extremely round ones, this result might confirm that people tend to associate rounded shapes with females while squared ones with males².

As the geometric morphometrics analysis was performed on a much bigger sample, I was curious how the results could look when I took into account only pictures of birds from the survey. A plotted PCA showed a completely different image – males were clearly separated from females (Figure 5). I suppose that the reason is a very small sample size (N = 10).

² Stroessner, S. J., Benitez, J., Perez, M. A., Wyman, A. B., Carpinella, C. M. & Johnson, K. L. (2020). What's in a shape? Evidence of gender category associations with basic forms. *Journal of Experimental Social Psychology*, 87(November 2019), 103915. <https://doi.org/10.1016/j.jesp.2019.103915>.

To sum up, Little Auks don't like to reveal their sex. Neither to humans nor their complicated analysis. This work is a part of my Bachelor thesis at University of Gdańsk, supervised by Katarzyna Wojczulanis-Jakubas.

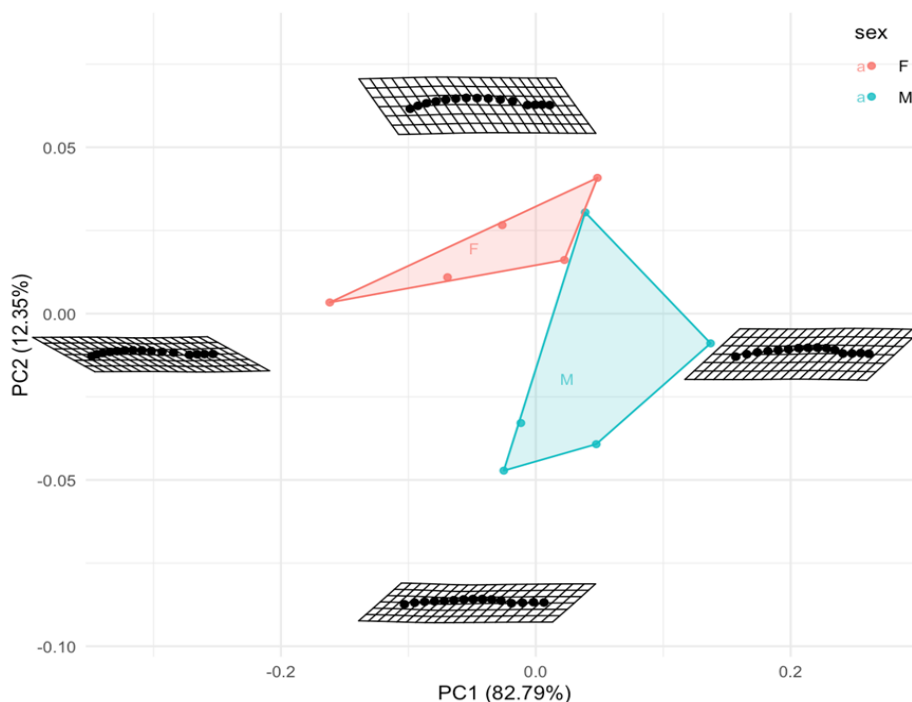


Figure 5: Graphical representation of PCA showing directions of changes in shape for PC1, PC2 on the grids from the survey sample. Sex is included.

Research Grant Report

Seabird mortality in the Outer Forth

Pauline Thompson, with support from BlueWild Boats Ltd.

2023 was a bad year for seabirds in the Outer Forth. There was a large outbreak of avian flu in the **Kittiwakes** in the summer, both in Dunbar Harbour and on the Isle of May^{3,4}, which followed a bad year for avian flu in the Gannets in 2022⁵. A probable starvation event in the auk population happened in August⁶.

³ BTO WEBS. (2024). Core count data from the Winterfield to Dunbar section of coast.

⁴ NatureScot. (2023) Avian flu causes another challenging summer for seabirds. <https://www.nature.scot/avian-flu-causes-another-challenging-summer-seabirds> (accessed 27/09/24).

⁵ Lane, J. *et al.* (2023) High pathogenicity avian influenza (H5N1) in Northern Gannets: Global spread, clinical signs, and demographic consequences. IBIS International Journal of Avian Science (in press) (<https://doi.org/10.1111/ibi.13275>).

⁶ Herald. (2023) Mystery of the dead Scottish seabirds. Is it bird flu? 8th September 2023 <https://www.heraldscotland.com/news/23777579.mystery-dead-scottish-seabirds-bird-flu/> (accessed 27/09/2024).

There was a similar “big auk wreck” in 2021^{7,8,9}. Finally, the autumn storms led to a catastrophic mass mortality of the **Shag** (*Gulosus aristotelis*) population¹⁰. Mortalities could be caused by food shortages, disease storms or toxins. A marine heatwave in 2023 could have been a factor that exacerbated a food shortage. This event may have reduced convection, caused large blooms of Noctiluca algae, and limited plankton movement and availability in the North Sea; possibly reducing the fish stocks that auks rely on later in the year.

Better monitoring of seabird mortality is clearly important. Most seabirds will die at sea and carcasses will decay and sink. The simplest monitoring method is to count corpses on the shore, but this requires a good understanding of the currents and a shoreline depositional model¹¹. Validation of shore counts with observations from the sea could be useful for future studies.

Project Objectives

Our two primary objectives in this work were to:

- 1) Raise public awareness of seabird mortality events, and
- 2) See if mortality could be monitored effectively from a small boat that regularly covers this area.

Methodology

BlueWild Boats operates nature tours to the Bass Rock and the Isle of May for most of the summer season and provides contractor transport to the Bass in the winter season. The author works on the boat regularly. The initial intention was to monitor a transect of the coast between Dunbar and the Bass Rock both from the boat and from the shore in a similar time frame.

Results

The guidelines for participants, and mortality data for this study have been compiled in the following archive. This includes route plans for all shore and boat surveys carried out between December 2023 and September 2024. <https://drive.google.com/drive/folders/1-SFbqG9KYmDYIYS-dzPYeIgmPHFCVlxd?usp=sharing>.

Figure 1 shows a summary of all the data compiled on a map during the study period. In total 25 shore-based routes and 48 boat trips were monitored. Additionally, three carcass reports contributed data where the route was not recorded. A total of 63 bird carcasses were identified. Photographs show the map locations where they were found. Breakdown by date and a table of data is available in the above archive.

Outcomes

Of the two project objectives, only the first was achieved successfully. The second was less successful but we hope to continue to collect data in future trips.

Objective 1

The project enabled the BlueWild crew to discuss seabird mortality science in more depth on their tours with passengers. Most tours involve a landing on the National Nature Reserve of Isle of May and a sail around the world-



Figure 1. Routes of all transects surveyed in the project.

⁷ BirdGuides. (2022) Initial analysis of autumn 2021 auk wreck published. <https://www.birdguides.com/news/initial-analysis-of-autumn-2021-auk-wreck-published/> (accessed 27/09/2024).

⁸ SEAPOPOP. (2022) Auk wreck last autumn struck mainly young common guillemots. <https://seapop.no/en/2022/02/unge-lomvier-rammet-av-omfattende-massedod-hosten-2021/> (accessed 27/09/2024).

⁹ Herald. (2021) Guillemots. Mystery of the 1000 dead Scottish seabirds <https://www.heraldscotland.com/opinion/19614862.guillemots-mystery-1000-dead-scottish-seabirds/> (accessed 27/09/2024).

¹⁰ Guardian, 2023. ‘It was desolation’: why did 700 shags disappear from an island overnight? <https://www.theguardian.com/environment/2023/nov/23/conservation-why-600-european-shags-disappeared-isle-of-may-scotland-aoe> (accessed 27/09/2024).

¹¹ Amend, M. et al. (2020) Avian injury quantification using the Shoreline Deposition Model and model sensitivities. Environmental Monitoring and Assessment 191 article number 812 (<https://doi.org/10.1007/s10661-019-7922-1>).

renowned Bass Rock. Both islands are famed for their seabird populations and contribute greatly to our understanding of seabirds from the many decades of research undertaken. It is important that visitors have the opportunity to appreciate the research impact and how it fits with the bigger picture of our fragile ecosystems. Local passengers could then also participate by contributing to the shore-based mortality observations.

Objective 2

The monitoring results, unfortunately, are inconclusive so far. Although bird carcasses were spotted from the boat early in the season, the weather conditions made boat trips impossible when the majority of carcasses were spotted on the shore. When the spring weather improved very few corpses were observed either from the boat or the shore. In the late summer, just as the birds began to fledge, more carcasses were observed. Unfortunately, technical faults prevented further boat surveys and thus temporarily stopped the project. When conditions permit, studies are planned to resume.

Reporting of results

All bird carcasses were reported on the BTO's BirdTrack app and to DEFRA. Feedback from DEFRA said the dead Kittiwakes that were reported in Dunbar Harbour in August 2024 did not show any evidence of bird flu. We did not manage to contact the Nature Scotland Epicollect project to contribute data but could do so in retrospect. Please contact us if you would like us to submit this data.

Funding

This project received initial funding from The Seabird Group to facilitate dedicated surveys out of season. BlueWild provided use of their boats both for dedicated surveys and to enable observations during their normal tours through the summer season. Any future studies will be supported by BlueWild Boats using the methodologies developed during this project.

Identification and counting of seabirds on Agadir Bay (Moroccan Atlantic coast)

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²Department of Life and Earth Sciences, CREMEF Casablanca-Settat.

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⁴GREPOM/BirdLife Morocco, Oum Hani IV Residence, Building 22, Apartment 3, Avenue Ouali Al Had Sidi Mohamed, 11160 Salé, Morocco.

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Introduction

Seabirds (marine birds, in this case including coastal waterbirds) are substantial components at various levels of the food web and serve as herbivores of littoral vegetation and predators of macroinvertebrates, fish, other birds, carcasses and fisheries.

These species spend a significant part of their lives at sea, and many undertake extensive migrations between breeding and non-breeding areas. About 90 million birds, including seabirds, annually use the East Atlantic Flyway as a migration route when passing from their breeding areas (e.g., United States, Canada, Greenland, Iceland, Siberia and northern Europe) to wintering areas in western Europe and on to Africa. Morocco is privileged to be located at the centre of this world's major flyways. These birds depend on wetlands and marine areas as vital stopover sites during their migration, to rebuild their energy reserves^{12, 13}.

Morocco has committed to developing strategies and tools for management and conservation, as well as for the sustainable, reasonable, and equitable use of marine resources, including seabirds, by signing the United Nations Convention for the Protection

¹² Camphuysen C. J. and Van der Meer J. (2005) Wintering seabirds in West Africa: foraging hotspots off Western Sahara and Mauritania driven by upwelling and fisheries, *African Journal of Marine Science*, 27:2, 427-437, DOI: 10.2989/18142320509504101.

¹³ Gremillet D., Peron C., Provost P. & Lescroel A. (2015). Adult and juvenile European seabirds at risk from marine plundering off West Africa, *Biological Conservation*, 182, 143-147, <https://doi.org/10.1016/j.biocon.2014.12.001>.

of the High Seas. These tools include Marine Protected Areas and Environmental Impact Assessments. Waterbird populations in terrestrial wetlands and on the Atlantic and Mediterranean coasts of Morocco are monitored and counted annually, notably through winter censuses^{14,15}. However, there is a great lack of information on strictly marine bird populations, due to the absence of regular monitoring, activities and coordinated works to identify and collect data.

A deeper biological knowledge of the function of avian community diversity and structure in conservation decision-making is required, particularly in coastal environments, given the importance of birds for conservation planning and environmental evaluations. A database on seabird populations throughout Morocco's coast is necessary for these kinds of management and conservation initiatives.

The Souss Massa region, particularly the estuaries of the Souss and Massa rivers, designated as a RAMSAR site, represents an area of significant ornithological interest. This is due to the presence of the world's largest wild population of Northern Bald Ibis (*Geronticus eremita*), numerous migratory waterbirds, and around 30 species of resident terrestrial birds that breed in the area.

Because of the site's interest in waterfowl migration, we believe that the census expansion to include migratory seabirds travelling through or wintering off the coast of Agadir is very important. We believe it is very important to develop and build a database on the diversity and abundance of marine bird species in Morocco. In addition, surveys of the number and distribution of seabirds is critical for identifying critical maritime habitat (feeding hotspots), monitoring population changes, and understanding seabird feeding ecology; thus, providing a solid scientific basis for conservation projects.

The primary objectives of this study are to identify and enumerate seabird species along the Moroccan Atlantic coast, with a particular focus on the Agadir Bay. Additionally, the study aims to enhance understanding of migratory and wintering seabird populations in the region. This knowledge will contribute to the development of broader geographic census and monitoring programs, ultimately supporting conservation efforts for these seabirds in Morocco.

Methodology

Study area

Located on the Atlantic coast of Morocco, 35 km south of Cap Ghir (30°25'30" N and 9°38'30" W), the Bay of Agadir represents a coastal zone sheltered to the north by Cap Ghir and largely exposed to the southwest. This bay is part of the Souss Massa region, situated in the geographical centre of Morocco, covering an area of approximately 53,789 km², which constitutes 8% of the national territory. Morphologically, the bay marks a transition from a rocky coastline in the north to a vast sandy expanse in the south. This coastal zone is characterized by highly active hydro-sedimentary dynamics, which have been significantly disrupted by various port and tourism-related developments. Coastal structures (ports, breakwaters, groynes) combined with the aggressive wave action have altered the hydrodynamic regime of this area, shaping the evolution of the coastal domain. The bay is predominantly influenced by wave directions from W, WNW, NW, and NNW, which dominate in both frequency and intensity.

The climate of the Souss plain ranges from arid to semi-arid, transitioning to a humid type with cold winters in the high peaks of the Western High Atlas, and milder winters in the plains. The proximity of the ocean and the influence of the Canary Current moderate the climate in this region, while the Anti-Atlas Mountain Range acts as a barrier against southern winds¹⁶. Within the Agadir watershed, four rivers flow into the Bay of Agadir: the Oued Souss, Oued Lahouar, Oued Tanaout, and Oued Tildi. Among these, the Oued Souss (south of Agadir) is the only river with a significant flow rate of 16.3 m³/s, contributing nearly all the freshwater inflow into the bay, ranging from 500 million m³ to as much as 1 billion m³ during exceptionally rainy years. This river discharges into the ocean 6 km south of the port. Its estuary, characterized by mudflats, dunes, bushes, and a few ponds, supports a wide variety of waders, gulls such as **Audouin's Gull** (*Ichthyaetus audouinii*) and **Slender-billed Gull** (*Chroicocephalus genei*), and terns. The area is also known for its dunes, bushes, and ponds, which are home to the Marbled Teal (*Marmaronetta angustirostris*).

¹⁴ Qninba A., Ouassou A., Radi M., El Agbani M., Boumaaza M. & Amzian M. (2017). Recensement Hivernal d'Oiseaux d'Eau au Maroc 2006-2010. Travaux de l'institut scientifique, série de zoologie n°54.

¹⁵ Ouassou A., Dakki M., El Agbani M. & Qninba A. (2017). Recensement Hivernal d'Oiseaux d'Eau au Maroc 2011-2015. Travaux de l'institut scientifique, série de zoologie n°55.

¹⁶ Aouiche I., Daoudi L., Anthony E.J., Sedrati M., Ziane E., Harti A. & Dussouillez P. (2015). Anthropogenic effects on shoreface and shoreline changes: Input from a multi-method analysis, Agadir Bay, Morocco. Geomorphology 254, 16-31, doi:10.1016/j.geomorph.2015.11.013.

Further south, the estuary of the Oued Massa, along with its adjacent habitats (dunes, freshwater and brackish marshes, coastal waters, sandy beaches and rocky shores), is encompassed within the Souss Massa National Park. This park is notable for hosting the last remaining wild population of the Northern Bald Ibis (*Geronticus eremita*), alongside other species such as Greater Flamingos (*Phoenicopterus roseus*), Eurasian Spoonbills (*Platalea leucorodia*), **Lesser Black-backed Gulls** (*Larus fuscus*), Audouin's Gulls, Eurasian Curlews (*Numenius arquata*), plovers, and Sanderlings (*Calidris alba*).

Survey method

The survey methodology consists of systematic counts of seabirds along a line transect of 11 km (Figure 1) from land using a motor vessel (Figure 2) with a speed of 10 - 20 km p/h^{17,18}. All birds seen in a 360° scan around the ship are recorded every 10 minutes (or linear distance) and between two successive stops (seven stops in total), in accordance with the Pacific Ocean Biological Survey Program method^{19,20,21}.

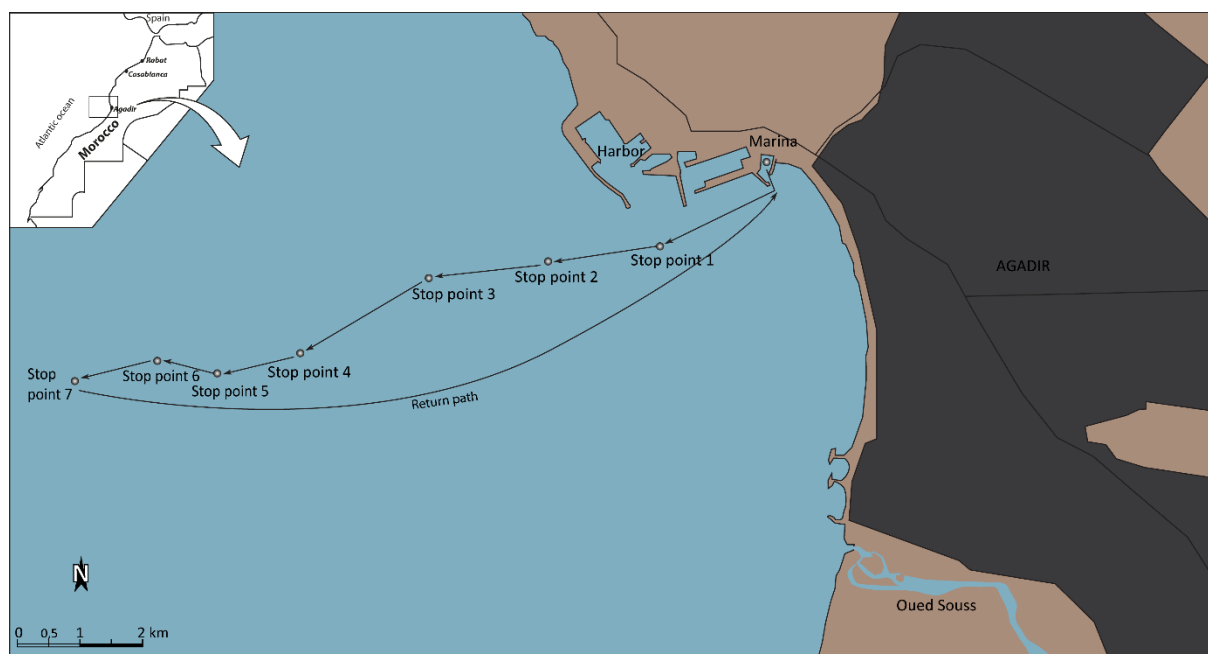


Figure 1: The transect line used to observe and count seabirds in Agadir Bay, and the stopping points along the transect.

Considering the mobility of the birds and their occurrence, we planned the observations and counts for during the wintering (January 2024) and migration (April 2023) periods for these birds on the Moroccan Atlantic coasts. However, due to significant administrative and logistical constraints (e.g., the lack of authorization for a boat to conduct this type of mission), we were compelled to change the initially planned study site (the Oualidia coast) and limit our fieldwork to a single mission in May 2024, coinciding with the end of the migration period along Morocco's Atlantic coasts.

All interventions by survey members were carried out with minimum disturbance, discomfort and stress to the birds being monitored. In the same way, the boat was chosen according to the level of disturbance and nuisance that the motor may cause to the seabirds.

¹⁷ Thomas L., Buckland S. T., Burnham K. P., Anderson D. R., Jeffrey L., Borchers D. L., Strindberg S., Elshaarawi A. H. & Piegorsch W. W. (2002). Distance sampling. *Environmetrics*.

¹⁸ HELCOM, 2021. Guidelines for monitoring seabirds at sea, 1-46 pages.

¹⁹ Gould, P. J. 1974. Introduction. Pp. 1-5 in *Pelagic studies of seabirds in the central and eastern Pacific Ocean* (W. B. King, Ed.). Smithsonian Contrib. Zool. No. 158

²⁰ Tasker M. L., Jones P. H., Dixon T. & Blake B.F. (1984). Counting Seabirds at Sea from Ships: A Review of Methods Employed and a Suggestion for a Standardized Approach, *The Auk*, Volume 101 (3), 567–577, <https://doi.org/10.1093/auk/101.3.567>.

²¹ Walsh P.M., Halley D.J., Harris M.P., Del Nevo A., Sim I.M.W. & Tasker M.L. (1995). Seabird monitoring handbook for Britain and Ireland: A compilation of methods for survey and monitoring of breeding seabirds. JNCC / RSPB / ITE / Seabird Group, Peterborough.



Figure 2: Photos of the boat used for the mission, as well as the methodology for observing and counting birds.

Results

A total of 12 seabird species were identified, all classified as having a conservation status of "Least Concern" (LC) (Figure 3). The total number of individuals recorded was 296, distributed across eight families and four orders. The population was dominated by the family Laridae (257 individuals), followed by Hydrobatidae (10 individuals) and Sulidae (8 individuals).

Order	Family	Common name	Scientific name	IUCN Red List category
PROCELLARIIFORMES	Hydrobatidae (3.4%)	European Storm-petrel	<i>Hydrobates pelagicus</i>	LC
	Procellariidae (1%)	Scopoli's Shearwater	<i>Calonectris diomedea</i>	LC
PELECANIFORMES	Ardeidae (0.7%)	Grey Heron	<i>Ardea cinerea</i>	LC
		Little Egret	<i>Egretta garzetta</i>	LC
SULIFORMES	Sulidae (2.7%)	Northern Gannet	<i>Morus bassanus</i>	LC
	Phalacrocoracidae (1.7%)	Great Cormorant	<i>Phalacrocorax carbo</i>	LC
CHARADRIIFORMES	Scolopacidae	Common Sandpiper	<i>Actitis hypoleucos</i>	LC
	Laridae (90.2%)	Lesser Black-backed Gull	<i>Larus fuscus</i>	LC
		Yellow-legged Gull	<i>Larus michahellis</i>	LC
		Common Tern	<i>Sterna hirundo</i>	LC
		Sandwich Tern	<i>Thalasseus sandvicensis</i>	LC
	Stercorariidae (0.3%)	Arctic Jaeger	<i>Stercorarius parasiticus</i>	LC

Figure 3: List of coastal and pelagic bird species identified in Agadir Bay, categorised by order and family. Percentage is included to indicate the proportion of sightings within families.

In terms of abundance, the Laridae family dominates the avian community of Agadir Bay, with the Lesser Black-backed Gull being particularly well represented. The spatial distribution of families reveals distinct patterns (Figure 4). Bird numbers peak in P-1 and 3-4 transects but drop sharply in 4-5 to 6-7 transects, where species richness reaches its highest values. High bird numbers likely reflect dominance by few species. The increase in species richness further from the coast suggests greater food resource availability, likely influenced by the presence of fishing boats and a reduction in interspecific competition as habitats become more diverse. Thus, gulls (Laridae), petrels (Hydrobatidae), and gannets are present along the entire transect. In contrast **Arctic Skua** and **Scopoli's Shearwater** (*Calonectris diomedea*) are primarily observed in the outermost areas of the bay. Cormorants (Phalacrocoracidae) are concentrated in coastal zones, especially on rocky outcrops and artificial blocks along the port's breakwater.

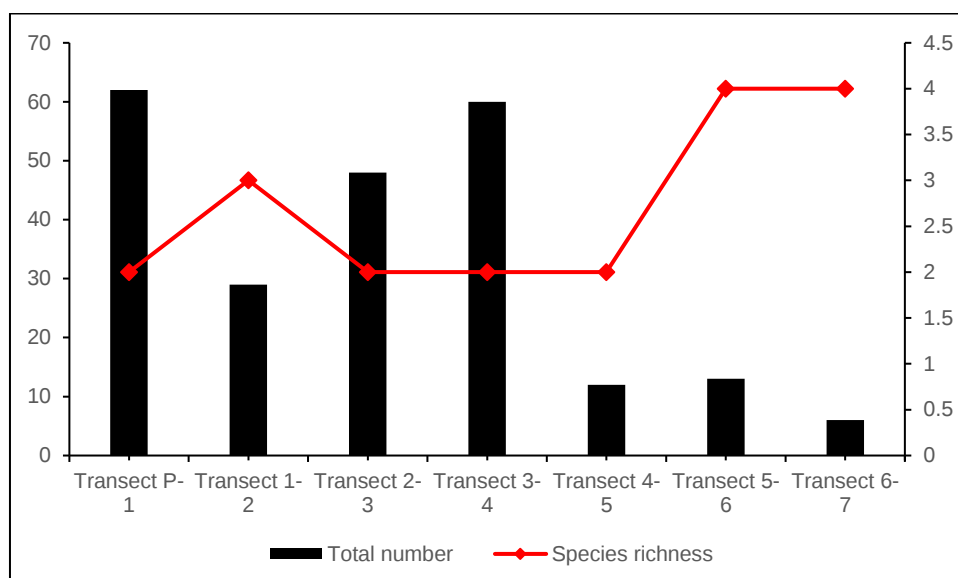


Figure 4: Spatial distribution of the total number of birds and species richness along the studied transect line.

Conclusion

The results of this mission remain valuable despite the short duration of the field exploration. They have enabled the confirmation of the presence and abundance of certain species. More frequent missions conducted over wintering and migration periods would provide more conclusive findings, and the investigation of strictly pelagic species in other Atlantic sites could further enhance these preliminary results and help in better understanding the ecological needs of these seabirds. Nevertheless, the findings of this study emphasize the importance of establishing a regular seabird monitoring program along the Moroccan coasts. Such a program would help identify key marine areas for these birds to support their protection.

Training Grant Report

Learning new ornithology skills in India

Shivira Shukla

In December 2024, I got the opportunity to undertake a field training course titled 'Basic course in Field Ornithology and Bird Migration studies,' organised by the Bombay Natural History Society, one of the oldest NGOs in India conducting avian research. A unique opportunity to learn from experts, the course was held at the Bird Migration Study Centre at Point Calimere, which is a Ramsar Site of international importance at the southeastern tip of India.

This field course gave me an insight into the history of migratory bird research in India using case studies, followed by practical training in identification and survey techniques from experts, which focused on shorebird and seabird identification and monitoring, bird ringing, and mist netting. However, the most exciting part of this course was learning to identify the migratory bird species that use the region as a stopover site in their winter migration across the Central Asian Flyway. I undertook training in the identification of large mixed flocks of plovers, sandpipers, godwits, gulls and terns across a diverse range of habitats like dry evergreen forests, mangroves, wetlands, open coasts, and salt pans!



Photo: Nitin Kumar Raghav

During this course, I visited six different field sites inside the Point Calimere Wildlife Sanctuary to apply my training in real-time and practice my skills, and spotted an incredible 59 migratory waterbird species. Stormy weather placed large mixed wader flocks at a close proximity and I was able to closely observe the behaviour of these birds. I watched Painted Storks (*Mycteria leucocephala*) wade through the shallow mudflats, sweeping their long bills and searching for food, and flocks of plovers scurrying across with quick steps, constantly pecking along the quiet shoreline. Terns hovering above the water, repeatedly diving and emerging with small fish clasped in their beaks made for the most memorable sightings during these visits! The highlight of my time in the field was gaining the skills to identify and observe seven different species of terns that are winter visitors in the region - **Little Tern**, **Gull-billed Tern** (*Gelochelidon nilotica*), **Caspian Tern** (*Hydroprogne caspia*), **Whiskered Tern** (*Chlidonias hybrida*), **Common Tern** (*Sterna hirundo*), **Lesser Crested Tern** (*Thalasseus bengalensis*), and **Greater Crested Tern** (*Thalasseus bergii*). These wintering birds can be difficult to identify, as their non-breeding plumage does not have any distinct identification patterns. I learnt how to use their physical features and behaviour cues to determine the species.

But that wasn't all! Another objective of the course was to acquire training on bird trapping and handling techniques, and there was an instructive session on using mist nets and noose traps that are commonly used to capture birds for ringing. Even though the workshop was held in the wake of an unanticipated cyclone and the middle of the winter monsoon, the drizzle from the rain clouds eventually subsided, and a Paradise Flycatcher, recovered from one of the mist-nets, was used to demonstrate bird handling and ringing etiquette and techniques.

As a result of the training acquired through this course, I am equipped to confidently identify the major seabird groups of the Indian Ocean region, and implement the appropriate survey techniques to monitor their populations. I intend to utilise the skills I developed and the training I received to develop and conduct seabird research, and I am extremely thankful to The Seabird Group for awarding me their Training Grant to undertake this opportunity.



Photo: Nitin Kumar Raghav



Photo: Shivira Shukla

Revisiting Siolaigh, Monarch Isles, to formally survey European Storm Petrel

Noelia Dominguez, Shiants Auk Ringing Group

As part of the MarPAMM (Marine Protected Area Management and Monitoring) seabird census carried out in June 2021 in the Western Isles; a brief visit to Siolaigh, in the Monach Isles SPA (North Uist), provided the first potential evidence of breeding **European Storm Petrels** (hereafter 'Storm Petrels') on this island. A playback using a Storm Petrel call was used in a few locations selected at random, and two responses from two different individuals were recorded indicating Apparently Occupied Nests (AON, defined as a nest identified on known behavioural clues rather than by checking the nest contents). Following this discovery, it was paramount to fully assess the size of this breeding colony, particularly given that Storm Petrels are amber-listed under the BoCC5²².

In 2022 and 2023 the expedition had to be cancelled, due to the outbreak of Highly Pathogenic Avian Influenza (HPAI) in seabirds, and inclement weather, respectively. Finally in 2024, the expedition took place from the 14th July to the 17th July, with an experienced team of six people (Ian Buxton, Jim Lennon, Karen McDiarmid, Katharine Keogan, Noelia D. Alvarez and Rosie Hall), all members of the Shiants Seabird Research Group (SSRG). Our main aims were: (1) to confirm whether Storm Petrels breed on Siolaigh; and (2) to estimate the size of the breeding colony using diurnal playback surveys.

Methods

Data collection was undertaken on Siolaigh (57°31'34"N, 7°41'35"W), the most western island of the Monach Isles, North Uist, UK. On arrival, mapping of suitable Storm Petrel habitats across the island was completed. These included beach boulders, grassy slopes with rock piles or slabs, and scree, all above the intertidal zone. Old buildings and walls were also checked for gaps that could be potentially suitable for breeding, although the stone wall around the lighthouse was filled with mortar, so this area was excluded. Weather conditions were optimal with very light winds, no rain, and clear skies; so no limitations were experienced during the surveys.

Storm Petrels are nocturnal seabirds, so diurnal playback surveys were carried out to establish burrow occupancy. Surveys were undertaken in suitable habitat between 8:00 and 20:00 on the 15th and 16th July. This period was selected as between end-June to mid-July is considered to be the peak for nest attendance in Scotland (i.e. incubation or guarding of up to seven day old chicks), when there is a higher probability of encountering an adult in the nest (Ratcliffe *et al.*, 1998; Deakin *et al.*, 2021). Using a portable sound player, a recording of a male purr call was played at 75dB for 10 seconds. This was followed by 20 seconds of silence where the surveyor recorded a response (usually an alarm call). Surveys were carried out in parallel transects 5m apart within suitable habitat. The tape was played at 1m intervals along each transect, recording responses within 0.5 m either side and 1m in front (1m x 1m quadrats, following standard methodology^{23,24} see Bolton *et al.*, 2010 and Deakin *et al.*, 2021). Responses outside the 1m² quadrat up to 4m were recorded, but not intended for use in analysis. The lengths of all the transects were combined to calculate the total habitat surveyed. If a survey point within a transect was not suitable (i.e. a patch of wet grass in the middle of the transect), this was noted and subtracted from the total surveyed habitat to avoid overestimation. The start and the end of the transects were recorded with a handheld GPS device.

²² Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D. & Win I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern 5 in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114: 723 - 747.

²³ Bolton, M., Brown, J. G., Moncrieff, H., Ratcliffe, N. & Okill, J. D. (2010). Playback re-survey and demographic modelling indicate a substantial increase in breeding European Storm-petrels *Hydrobates pelagicus* at the largest UK colony, Mousa, Shetland. *Seabird* 23: 14 - 24.

²⁴ Deakin, Z., Hansen, E. S., Luxmoore, R., Thomas, R. J., Wood, M. J., Padgett, O., Medeiros, R., Aitchison, R., Ausden, M., Barnard, R., Booth, V., Hanse, B. R., Hanse, E. A., Hey, J., Hilmarsson, J. O., Hoyer, P., Kirby, W., Luxmoore, A., McDevitt, A., Meulemans, F. M., Moore, P., Sanderson, F., Sigursteinsson, M., Taylor, P. R., Thompson, P., Trotman, D., Wallisch, K., Watson, D. & Bolton, M. (2021). Decline of Leach's Storm Petrels *Hydrobates leucorhous* at the largest colonies in the northeast Atlantic. *Seabird* 33: 74 - 106.

In 'blind' playback surveys where it is unknown whether the site is occupied by breeding Storm Petrels, it is important to calculate the response rate for that specific site/ colony as these are generally low and variable (Ratcliffe *et al.*, 1998). Response rates are obtained by repeating surveys of a few transects a number of times; these are called 'calibration surveys'. However, we were unable to perform calibration surveys due to the low level of response.

At each survey point, the type of habitat was recorded as 'grass' (habitat dominated by short grasses), 'rock' (areas of boulders, rocks or slab piles), 'mixed' (habitat with short grasses and > 50% presence of rocks), 'scree' (areas of pebbles and gravel) and 'walls' (stone walls and old buildings that had gaps).

Passive mist netting (without playback sound) using four 18m mist nets erected on the west side of the island (Figure 1), was also carried out on the nights of 15th and 16th July from 23:00 until 3:00, although on the 16th July, the session was slightly shorter due to rain. All birds caught were fitted with a BTO metal ring, age was recorded and the following biometrics taken: wing length and presence of brood patch. Passive mist netting was undertaken to capture potential breeding individuals that may not have been recorded during diurnal playback due to low response rates, or as they were not in attendance.

Results

A single response from a Storm Petrel was recorded on the 16th July at approximately 13:30 (Figure 1), just outside the quadrat, at 2-2.5 m from the survey transect. Later in the day, the area was inspected and with help of an endoscope the nest was found under a large boulder. The nest had an egg and an adult in attendance (Figure 2). The total area of potentially suitable breeding habitat marked was 7,074 m² and the habitat surveyed was 900 m² (a total of 900 quadrats). The most common habitat was mixed (grass and rock) contributing 62%, followed by rock with 21%, walls with 6%, scree with 5% and grass with 5%.



Figure 1. Siolaigh Island showing the areas of potential suitable habitat for breeding Storm Petrels and within these, the playback survey transects undertaken by the team. The single response and nest of a Storm Petrel found on the isle is marked with an orange star and in yellow the location of the mist nests (map data © Google Satellite, produced in QGIS).

During the passive mist netting a total of 23 Storm Petrels were captured, 20 of those had brood patches; and three **Leach's Storm Petrels**, one with a brood patch. Most of the individuals flew into the mist nets from the western side of the island, coming directly

from the sea. One of the Storm Petrels caught was a recapture ringed four days before in An Inis, Highlands, 228 km from Siolaigh. A bird ringed in Siolaigh was trapped three days later in Mangarstadh, Western Isles, 82 km away. Although Storm Petrels travel long distances searching for food, these recaptures are likely a result of playing lures.

Discussion

Our findings confirm that Storm Petrels breed on Siolaigh, as we had a response during the playback surveys and the active nest was later found. The absence of responses overall made it impossible to estimate the size of the breeding colony. However, the capture of 23 individuals using passive mist netting, with most of these having brood patches, suggests perhaps that more individuals may have been breeding on the island than were detected by the playback surveys. An explanation of why we did not record more birds during the playback surveys could be that the peak time for nest attendance was earlier in 2024, and adults may have been at sea during the day, finding food to bring to the young. Selecting the right period to carry out playback surveys can be challenging as breeding timing is highly variable in Storm Petrels, both between different colonies and across years²⁵. Future expeditions should consider staying longer to be able to capture the peak timing of nest attendance with greater confidence, although this may be ambitious given the remoteness of the island. Furthermore, 2024 was generally a poor year for most breeding seabirds in the UK which could have further affected our results²⁶. We surveyed the key areas within the potential suitable habitat which seems to be relatively extensive (7,074 m²), but it is possible that some is suboptimal, so this figure should be interpreted with caution.

A surprising finding was the capture of three Leach's Storm Petrels during passive mist netting, with one individual having a brood patch, which may indicate they breed on the island. St. Kilda is approximately 60 km NW of Siolaigh, so this could be plausible or perhaps birds may belong to one of St. Kilda's colonies, as birds are known to travel long distances in search of food.



Figure 2. Storm Petrel in the nest with an egg, the same individual that responded to the playback during the surveys. Picture taken with an endoscope.



Figure 3. The team with Siolaigh in the background. From left to right: Karen McDiarmid, Ian Buxton, Katharine Keogan, Jim Lennon, Noelia D. Alvarez and Rosie Hall.

Acknowledgements

We would like to thank enormously both the Scottish Ornithological Society (SOC) and The Seabird Group for providing funding and rolling over the grants for two consecutive years due to unforeseen issues that forced the expedition to be cancelled in 2022 and 2023. Furthermore, Biosecurity for Life supported our boat charter costs, which additionally enabled us to check the bait boxes we helped deploy in 2021. Fortunately, only evidence of the residence of small mammals (likely Wood Mouse (*Apodemus sylvaticus*)) was noted. We are grateful to Alister Clunas and Carole Davies for their contribution in conceptualising the surveys and helping to organise the trips; and Mark Bolton and Stuart Bearhop for their advice on the methodology. Also, we

thank NatureScot and North Uist Estate for their respective permissions. Finally, our special appreciation to Sea Harris boat charter and boatmen that made the crossing possible and smooth, always providing plenty of gingerbread to keep us happy.

²⁵ Ratcliffe, N., Vaughan, D., Whyte, C. & Shepherd, M. (1998). Development of playback census methods for Storm Petrels *Hydrobates pelagicus*. *Bird Study* 45: 302 - 312.

²⁶ NatureScot. 2024. Noss NNR Annual Report. Accessed on 5th January 2024: <https://www.nature.scot/doc/noss-nnr-annual-reports>.

Seabirder Spotlight aims to illuminate the variety of career paths and roles available to aspiring seabirders. Contributors are asked a range of standard questions about their careers, for example on what their current job involves, what aspects they love about their work and what skills have been important to cultivate on their journey. In particular, we hope that the contributions from members of the seabird community will inspire and motivate people in their early careers to work with seabirds.

Dr Peter Carr, Healthy Islands, Healthy Reefs Programme Manager (HIHR PM) - Chagos Conservation Trust (CCT)

The path that took me to the job as the HIHR Programme Manager is a strange one and, as I look back over my career, I cannot help but feel my whole life was leading to this role. For “judicial” reasons, I joined the Royal Marine Commandos at the age of 16. I spent the following 33 years learning logistics, planning operations, working outdoors and keeping extremely fit. I finished my military career with two years on Diego Garcia in the Chagos Archipelago, in a rank and role that allowed me to visit every island in the central Indian Ocean. It also gave me the opportunity to gather a host of data on the breeding seabirds on all islands and, lead voluntarily, three reforestation projects on Diego Garcia. I thought this final job in the military was the pinnacle of my working career.

However, after I finished in the military, I stayed in the Chagos working as the Environmental Director for the contractor that supports the military on Diego Garcia. In this role, amongst other departments, I headed Pest Control and Grounds Maintenance. This gave me much experience of rat and cat control. During this period, I managed the first successful eradication of rats from a small island in the north of the archipelago, eradicated feral chickens from Diego Garcia, completed a MRes with Warwick University, and wrote a book about the birds of Chagos. After three years, a change of management meant my full-time presence in Chagos had come to an end and, again, I thought I had reached the pinnacle of my working career.



On returning to the UK I was offered a PhD with Exeter University/ ZSL, sponsored by the Bertarelli Programme in Marine Science, that meant returning to the Chagos for fieldwork studying the breeding seabirds. Whilst not a pinnacle of my working career, the opportunity of studying seabirds in the place I love for four years was incredible. It also meant working with some truly inspiring supervisors and wonderful fellow students.

In my role as HIHR PM for CCT I am responsible for driving the Trust’s ambition to “rewild” the environmentally degraded islands of the Chagos. There are two major components of rewilding in the Chagos; the first and most important is eradicating invasive alien predators. In the case of the Chagos this means Black Rats (*Rattus rattus*) from some 39 of the 57 islands, and Feral Cats (*Felis catus*) from one where they are still present. The second is managing the abandoned, monospecific coconut (*Cocos nucifera*) plantations to habitat more attractive to biodiversity – especially seabirds. The job is undoubtedly the most satisfying I have ever had. It is a natural continuation of my MRes which looked at the nesting platform preference (tree species) of **Red-footed Booby** (*Sula sula*), followed by a PhD that looked at how breeding seabirds use a very large (>100,000 km²) Marine Protected Area. My study area for both was the Chagos.

The job is also the most frustrating I have ever had. The Chagos is a challenging arena to operate in. It is truly remote in the central Indian Ocean and as a result presents logistic constraints that require big budgets to overcome. As every conservationist and researcher will know, long-term funding is difficult to secure, and short-term funding opportunities are hard fought for. But, this is not the greatest challenge of operating in the Chagos. There are a unique set of circumstances around the area that make planning a conservation intervention (or scientific research) a complicated endeavour requiring patience, diplomacy, tenacity and

most important, flexibility. There are no “civilians” living permanently in the Chagos and, due to the military facility on the main island of Diego Garcia, permits are required for all visitors.

Now, looking back over my life I feel that a pathway was mapped for me somehow. I have been a fanatical birder and voluntarily contributed to conservation projects all my life, even as a wayward teenager. The military service gave me the discipline (I needed!) and skills in logistics and planning. Five years working in the Chagos left me in the position of being an “expert” on the islands, the seabirds and the ecological problems they faced and, I had acquired the skill set to address the major problems. I realise now I have reached the pinnacle of my working career.

The only advice I can give to those starting out, as I reach the end of my working career, is: work hard and diligently, do not promise anything you cannot deliver, make the most of opportunities as they arrive, learn from your mentors and most of all, enjoy what you are doing (if not, change it).

I would like to sincerely thank the late Professor Charles Sheppard and Professor Heather Koldewey for the mentoring, opportunities and friendship they have given me. I would not have reached the pinnacle of my working career without them.

Seabird Paper Roundup

Jacqui Glencross, ECR Representative

Seabird Paper Roundup is a section included to help Early Career Researchers promote any recent seabird papers they have produced. We hope this can help highlight some of the amazing work that is being undertaken across our community, whilst highlighting work to those of you who may not be aware of it yet.

ECR PAPERS

Greco F., Ravenswater H. M., Ruiz-Raya F., D'Avino C., Newell M. A., Hewitt J., Taylor E., Benninghaus E., Daunt F., Goodman G., Steel D., Park J., Philip E., Thomas S. S., Slomka M. J., Falchieri M., Reid S. M., James J., Banyard A. C., Burthe S. J. and Cunningham E. J. A. (2025). Asymptomatic infection and antibody prevalence to co-occurring avian influenza viruses vary substantially between sympatric seabird species following H5N1 outbreaks. *Scientific Reports*, **15**(1):1435.

Following devastating outbreaks of highly pathogenic avian influenza virus (AIV) in European seabird species, we assessed for evidence of current infection and previous exposure to AIVs in five sympatric seabird species breeding on the Isle of May National Nature Reserve, Scotland. We found species varied significantly in both the levels of prevalence and previous exposure to a range of avian influenza viruses, including H5 subtypes that can be a major cause of mortality and low pathogenicity subtypes commonly found in gulls. With some cases demonstrating exposure to more than one subtype, we flag the potential for viral reassortment and the emergence of novel viral characteristics.

Sobrino-Monteliu, M., Navarro, A., Rodríguez, B., Tejera, G., Herrera, A. and Rodríguez, A. (2025). Seabird biomonitoring indicates similar plastic pollution throughout the Canary Current. *Marine Pollution Bulletin*, **211**: 117424.

Plastic ingestion by Cory's Shearwaters serves as an effective biomonitoring tool for plastic pollution across the Canary Current. Despite differences in foraging areas and trophic niches, fledglings from three colonies exhibited consistently high plastic loads, primarily threadlike fragments likely linked to fishing, indicating widespread plastic pollution in the study area.

de Jersey, A. M., Bond, A. L. and Lavers, J. L. (2025). Strength in numbers: Combining small pockets of opportunistic sampling for Australian seabird plastic ingestion. *Marine Pollution Bulletin*, **214**: 117757.

This study compiles standardised plastic ingestion data from seven understudied and under-reported seabird species in Australia. By aggregating small, previously unpublished datasets, we provide updated baselines and identify species-specific patterns of plastic exposure, offering critical insights for seabird conservation and future monitoring.

de Jersey, A. M., Lavers, J. L., Bond, A. L., Wilson, R., Zosky, G. R. and Rivers-Auty, J. (2025). Seabirds in crisis: Plastic ingestion induces proteomic signatures of multiorgan failure and neurodegeneration. *Science Advances*, **11**: eads0834.

Using a data-driven proteomic approach, we identified systemic physiological changes in seabird chicks with high levels of plastic ingestion, including markers of organ dysfunction and early neurodegeneration. These effects occurred without changes in birds that looked visually healthy, suggesting that proteomics can provide additional insights into sublethal impacts of plastic exposure.

Legard, M. J., Lescure, L. and Davoren, G. K. (2025). Individual consistency in foraging behaviour is influenced by prey availability in a breeding seabird. *Marine Biology*, **172**: 82.

This study investigated consistency in the foraging trip characteristics of chick-rearing Razorbills (*Alca torda*) under varying prey availability, and whether these characteristics or fledging success were related to animal personality. Foraging locations of chick-rearing razorbills were only spatially consistent under high prey availability, while other foraging trip characteristics (i.e., effort, number of dives, average dive depth) were not consistent within individuals regardless of prey availability. Additionally, personality was not related to foraging trip characteristics or fledging success.

Coste, J., Votier, S. C., Dunn, R. E., Freeman, R., Nicoll, M. A., Carr, P., Wood, H. and Trevaill, A. M. (2025). Homing navigation is optimized to diurnal constraints in a tropical seabird, the Red-footed Booby. *Animal Behaviour*, **222**: 123116.

This study reveals that Red-footed boobies in the Chagos Archipelago adjust their homing flights based on the time of day, using solar and visual cues to ensure efficient, timely returns to their colonies before dusk. It appears that their navigation becomes faster, straighter, and more direct as the evening twilight approaches, highlighting a time-optimized homing strategy in visually sparse tropical environments.

Seabird Group News

Training Grant recipients

The Seabird Group would like to congratulate the three successful applicants for the seabird training grant for this season. We introduce them below and are looking forward to hearing how they got on later in the year!

Jacinta Munyiva will be participating in seabird research in Mombasa, Kenya.





Natasha Murphy will be going to Copeland Bird Observatory in Northern Ireland.

And Holly Purdy will be assisting with research with SCAN in north Wales and northern England.



Seabird Pride 2025

June 21st marks Seabird Pride Day! Whether you're in the field surrounded by seabirds, or writing up data in the office, make sure to show your support for diversity, equality and acceptance of the LGBTQ+ community within our industry. The Seabird Group support this every year with Seabird Pride, including a range of specially-designed artwork in our clothes shop. This year's winning design was by Maggie Watson (@terngirl.bsky.social) and you can order your item here: <https://seabirdgroup.teemill.com/>. Wear your new shirt with Pride!





Website: www.seabirdgroup.org.uk
 Facebook: www.facebook.com/pages/TheSeabirdGroup/
 Bluesky: <https://bsky.app/profile/theseabirdgroup.bsky.social>
 TikTok: <https://www.tiktok.com/@theseabirdgroup>

Registered charity No. 260907

The Seabird Group promotes and helps co-ordinate the study and conservation of seabirds. Members also receive the journal *Seabird*. The Group organises regular conferences and provides small grants towards research.

CURRENT SEABIRD GROUP COMMITTEE

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The Newsletter is published three times a year. The Editor welcomes articles from both members and non-members on issues relating to seabird research and conservation. We aim to provide a forum for readers' views so that those provided in the Newsletter are not necessarily those of the Editor or Seabird Group.

Submissions for the newsletter should be emailed to the newsletter editor: newsletter@seabirdgroup.org.uk. We recommend a maximum of 1500 words and ask that photographs and figures are sent as separate files and with full credits, where appropriate. **Deadlines are: 15th January (February edition); 15th May (June edition); and, 15th September (October edition).** Every effort is made to check the content of the material that we publish. It is not, however, always possible to check thoroughly every piece of information back to its original source as well as keeping news timely. If you have any concerns about any of the information or contacts provided, please contact the Newsletter Editor.

Current membership rates

Ordinary	£30
Concession	£15
Institution	£50
Individual Life:	£350
Institution Life	£500