NEWSLETTER 144

June 2020

Contents

Editorial

Katherine Booth Jones, Seabird Group Newsletter Editor

Welcome to the June edition of the Seabird Group Newsletter. So much has changed in the world since the February edition, and I hope you are keeping well in these strange times. With the Covid-19 pandemic sweeping the globe, I am sure we have all seen our plans for the spring/summer disrupted, including for many of us, our seabird surveys and fieldwork. The Assistant Newsletter Editor Viv Booth and I have decided to use the break in outdoor activities here in the UK as an opportunity to look further afield, to the UK Overseas Territories, alongside news from the UK. The UKOTs hold an astonishing diversity of wildlife and support huge and unique populations of seabirds from the Antarctic to the tropics. In this edition of the Seabird Group Newsletter, we therefore feature seabird research from a spectacular diversity of locations around the world.

The scope and quality of the work going on in far-flung locations is fantastic and I hope this newsletter inspires you as it has me to stay engaged with seabird research and monitoring even during difficult times, and look forward to getting out there again when the time is right.

Thanks to all our contributors for generating such interesting articles for the Seabird Group Newsletter once again.

News

Help save the Scottish Seabird Centre

Susan Davies, Chief Executive

The Scottish Seabird Centre has existed since 2000 and is one of Scotland's top ten visitor attractions. But, the Centre is so much more than that. We are first and foremost a conservation and education Charity that exists to inspire and motivate people about Scotland's marine environment. We do this by providing authoritative, scientific evidence in a fun, interactive and engaging way within our recently refurbished Discovery Experience, Learning Hub and through our outreach programmes. Our goal is to raise awareness about Scotland's marine environment, its internationally important seabird colonies and to support conservation action.

The future of our Charity is, however, at risk from the financial impact of COVID19. We've had limited success in securing Government funding to help and are therefore appealing to our members and the public for support. There are different ways in which people can help us just now – donate to our Urgent Public Appeal or promote our appeal through your networks to

expand its reach. Alternatively, if you have some free-time time and could help us produce digital educational resources or content for our new website that would also be welcomed. Just contact **info@seabird.org.**

In the future, please support us by visiting, by highlighting the resources we have and by including us in research and science communication projects.

LIMITED EDITION PUFFIN PRINTS

Ruth Holley, **Creature Candy**

In addition to the Public Appeal, you can also support the Scottish Seabird Centre by purchasing a limited edition Puffin print from Shipston-on-Stour-based small business, **Creature Candy**. The team at Creature Candy are launching a crowdfunding campaign on 8th June to sell prints to raise funds for Scottish Seabird Centre. Each print will sell for £15, with £5 from each print going directly to the Scottish Seabird Centre. We would be grateful if you could help raise awareness of the campaign and also make a pledge to donate.

You can view the link to the crowdfunding campaign here.

ETSY PRINTS CHARITY FUNDRASIER

To support the Scottish Seabird Centre in this critical time, **Danni Thompson** is selling original greetings cards and mounted prints of Scottish seabirds, featuring intimate portraits and iconic scenes such as the Bass Rock and the Isle of May. 25% of profits from this range will be donated to the Centre. With the environment at heart, all cards, envelopes and slips are made from high-quality recycled paper and the packaging is compostable.

etsy.com/shop/DanniThompsonPhotos

New Seabird Monitoring Programme database launched

Ilka Win, Seabird Ecologist, JNCC

Since 1986, the 25 seabird species that breed at colonies in Britain and Ireland have been monitored annually by the Seabird Monitoring Programme (SMP) to enable their conservation status to be assessed. This work is co-ordinated by JNCC, in partnership with 18 other organisations and is only possible through the dedicated work of approximately 500 surveyors, many of whom are volunteers.

On 30th April 2020, the SMP launched a new seabird colony database that provides a user-friendly environment to view and input breeding seabird data (Figure 1). It features a map browser, which includes Ordnance Survey and satellite layers, which allows users to search for colonies of interest and to download their associated data. Data can now be entered more efficiently using drop-down menus and the quality of inputted data is improved through the use of validation functions. In addition, colonies and sites can be allocated to registered users and the database provides the SMP with an overview of counting progress and data input.

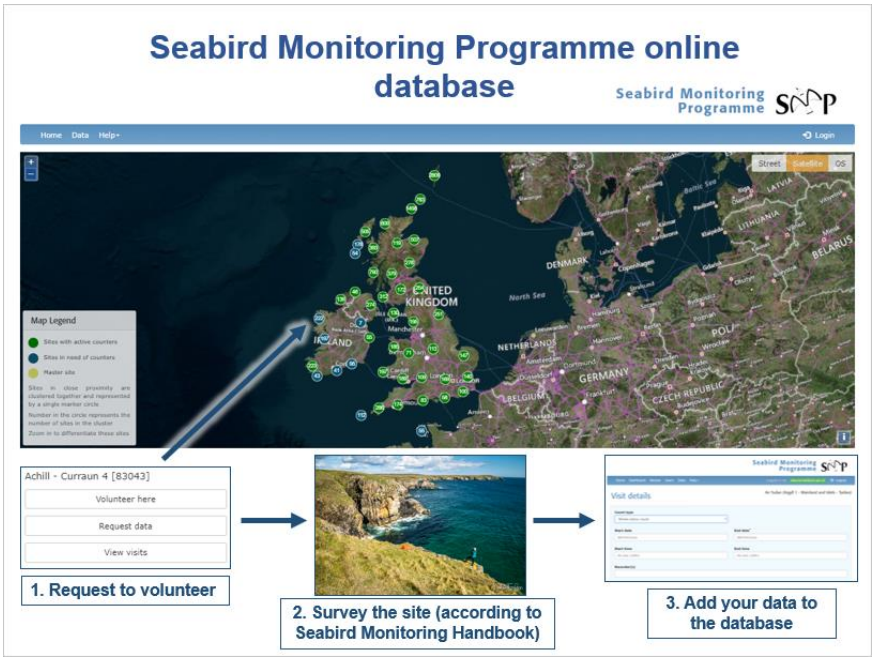


Figure 1: SMP database homepage.

Data are freely available to view or download and comprise whole-colony

counts going back to the 1960s and breeding success records since 1986. In addition to data collected annually for the SMP, the database also includes census data, namely: The Seabird Colony Register census (1985-1988), Urban Gull censuses (1976 and 1993-1995), Seabird 2000 (1998-2002) and Seabirds Count (2015 to present).

The SMP database contains 85,000 colony counts and 18,500 productivity records (chicks fledged per pair). On average, surveyors contribute 1,900 records in total each year and these enable JNCC to deliver annual abundance and productivity trends such as those shown in Figures 2 and 3 (below).

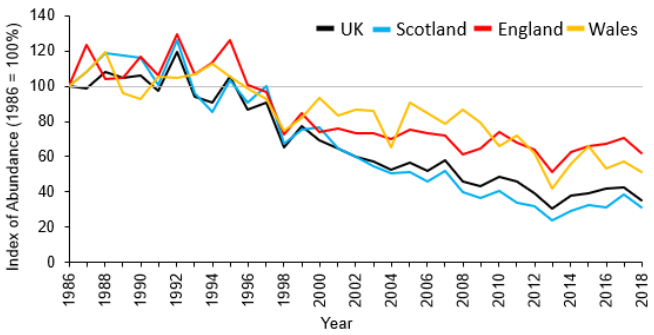


Figure 2: Trend in the UK, Scotland, England and Wales abundance index of Black-legged Kittiwake 1986–2018. Based on SMP data.

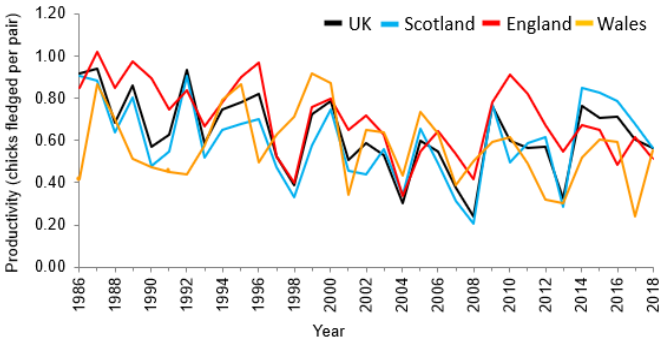


Figure 3: Trend in UK, Scotland, England and Wales productivity (number of chicks fledged per pair) of Black-legged Kittiwake 1986–2018. Based on SMP data; view the methods of analysis.

A comprehensive source of information on the latest trends in breeding seabird numbers and productivity, along with information on phenology, diet, survival rates and interpretive text on the likely causes of change, can be found in Seabird Population Trends and Causes of Change: 1986–2018 for Britain and Ireland.

Seabirds Count: 2020 Update

Daisy Burnell, Seabirds Count Project Coordinator, JNCC

At the time of writing this update (13/05/2020) the UK was still under various levels of lockdown. The situation could well have changed by the time this update has been printed. Any updated guidance on how the census survey coverage is progressing can be found on the census webpage.

The COVID-19 pandemic, and government measures implemented to limit its impact on public health, meant that all RSPB and JNCC breeding seabird surveys had to be cancelled this year. From 13th May, easing of some restrictions in England meant that volunteer survey work could now be completed, as long as advice from government was adhered to. For all other UK geographic regions, all survey work still remained suspended.

The Seabirds Count steering group met (virtually) shortly after the restrictions were announced to discuss postponement of the final survey year of the census to 2021. Although not ideal, an assessment of the impact a delay to final surveys would have on results was shown not be significant. This was of great relief, as the effort of hundreds of census volunteers and years of hard work will not be lost.

There is a silver lining to this pause in survey activity, as we now have more time than expected to complete preparations for the final analysis of census data. Data chasing and sourcing of data from other recording schemes has already begun. New site information, sent in since the end of the last breeding season, is being collated and will be uploaded to the database. Data validation and selection processes are being set up and will be ready to run once the full census dataset is collected. We have also begun to investigate census publication options and to discuss timescales. So, although we would rather be out of the (home) office counting our wonderful seabirds, we are in no way sat idle!

If your survey plans were scuppered, fear not! You can still help to progress the census, as well as contribute to the long-term data set collected for the Seabird Monitoring Programme (SMP). Now is the perfect time to enter breeding seabird data that may still be hiding in field notebooks onto our brand new online database (see previous article). Although we are keen to have data from 2015 onwards for the purpose of the census, older data are also valuable as it can, for example, help improve the

precision of long term SMP trends. We are also in need of nil returns, so if you know of a site that used to hold breeding seabirds but doesn't anymore, or have visited such a site for the census but haven't managed to enter the data yet, please enter this as a 0 count for each species that was previously present.

As always if you have queries please drop an email to **SeabirdsCountCoordinator@jncc.gov.uk**

The 6th World Seabird Twitter Conference #WSTC6

Anthony Wetherhill, WSTC6 Organising Committee

From 4th – 6th May over 180 seabirders from 27 countries presented their seabird research at the **World Seabird Twitter Conference**, now into its 6th year and going from strength to strength. At the end of the conference the tracked statistics showed that 1,822 people contributed to the conference with over 9000 tweets, and there was a potential audience of 3.8 million! That's almost three times the reach of last year's conference, and represents a huge science communication achievement.

This year there were three excellent plenaries: **Tom Hart (@penguin_watch)** showed the use of digital imaging to monitor remote penguin colonies; **Jennifer Provencher (@jenni_pro)** took us on a journey to the Arctic, where new fisheries pose old problems; and **Mercedes Santos (@mechasantos)** laid out a proposal for a new MPA for the Western Antarctic Peninsula.

Old favourites like the Tracking and Distribution session made a return, and every year the graphics showing the incredible journeys seabirds make get more and more impressive. New this year was a special Light Pollution session, which generated an exchange of ideas from different parts of the world. A dedicated Art and Communication session also made its debut, showcasing the storytelling and artistic skills of seabird researchers and confronting issues such as plastic pollution and eco-grief.

The organisers are grateful to the Seabird Group for sponsoring the Early Career Researcher Prize, the winner of which will be announced as soon as judging is completed.

All the presentations are searchable using the conference hashtag #WSTC6 and the session hashtags (found on this tweet: tinyurl.com/ycardr7x). Each session will be available in a curated document produced by Wakelet: look out for them on the @seabirders Twitter account.

The 7th World Seabird Twitter Conference is already being planned for next year. Anyone interested in helping to run one of the best online conferences is more than welcome and can contact us at **wstc.seabirds@gmail.com**. And if you have some seabird work you'd like to share please do consider presenting next year.

Puffarazzi Project

Connie Tremlett, RSPB

Contact: Connie.Tremlett@rspb.org.uk, 07710079490

Whilst there is evidence suggesting that failing food resources play a key role in driving seabird declines, there are few long-term datasets examining seabird diet, and those that do exist generally focus on one colony. The Puffarazzi project asks for people to submit photos of **Atlantic Puffins** (*Fratercula artica*) carrying prey in their bills, which are then analysed to quantify Puffin diet across multiple colonies throughout the UK. We are currently asking for historical submissions, from any year, to retroactively build a long-term dataset of temporal changes in Puffin diet, which we will link to environmental variables (e.g. sea surface temperature), fisheries data, and Puffin colony status. The longer the diet dataset that we can build, the more valuable it will be, and we are particularly keen to span the same period as the four puffin censuses if possible (50 years!). We've had an amazing response, but most of the photos that have been submitted so far were taken in the last decade, and we need your help! If you

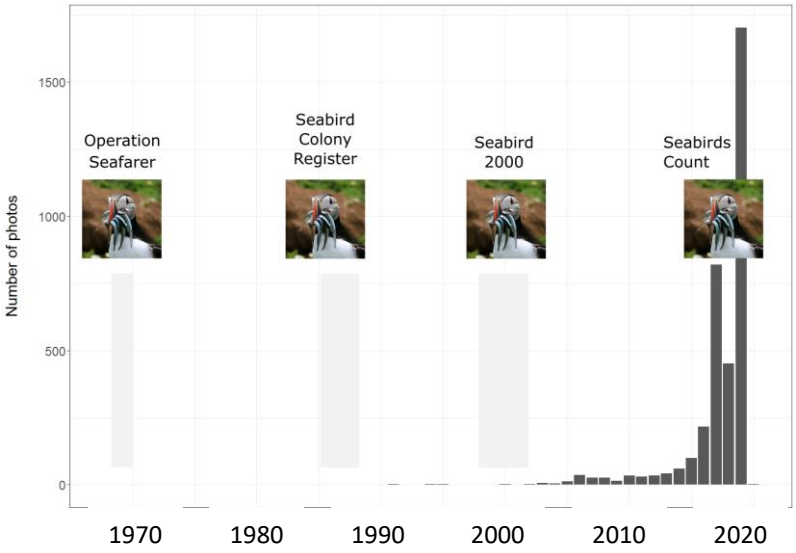
have any photos of puffins carrying prey in their bills, and you know where and when they were taken (year will suffice) please submit them to the Puffarazzi! There are several ways to do this:

1. Digital copies should be uploaded to the project website.

2. Hard copies of photographs can be scanned or photographed, and uploaded to the website in the same way.

3. There are gadgets for digitising slides, but alternatively try projecting them onto a wall and photographing them! You can then upload the photographs to the website.

Or if you have photos you can't submit in any of these ways, please get in touch with Connie Tremlett (the project manager this year) to discuss other options, such as sending the photos in the post to be scanned by RSPB staff and returned.



The number of photos in each year that have been submitted to the Puffarazzi, with the periods of each of the four major puffin censuses showing in grey. We need more old photos to match up our diet data with the census data!

Seabird stories from the UK Overseas Territories

The Bermuda Petrel – an incredible conservation story

Maria Dias, Letizia Campioni and Monica C. Silva

The **Bermuda Petrel** or **Cahow** (*Pterodroma cahow*) an endemic to the Bermuda archipelago, is one of those iconic species that any seabird researcher aims to see one day. As all gadfly petrels (genus *Pterodroma*), they are superb flying machines, perfectly designed to cover vast areas of the ocean and able to compete in travel distances with any albatross of the southern seas. As most gadfly petrels, its population has been decimated, mostly for human consumption after the colonization of the island, and by predation by invasive species. However, they have something almost unique – an incredible story of recovery from near extinction. In fact, they were considered extinct for more than 300 years.

A DARK PAST

As many other species of petrels, the Bermuda Petrel was once much more abundant than today. When the first Spanish sailors arrived to Bermuda in 1505, they found a population of probably hundreds of thousands. A century later, the species was considered extinct. A combination of intensive hunting by visiting sailors and predation by invasive species explains its disappearance. These threats and critical habitat loss in the main island drove the few survivals to a tiny, isolated rock, just offshore, named Inner Pear. The future of the species seemed probably hopeless for the naturalists Robert Cushman Murphy and Louis Mowbray, who rediscovered the species in 1951, along with the young student David Wingate. Only 18 pairs were left.

AN EPIC RECOVERY

David Wingate dedicated his life to save the Cahows from their imminent extinction. As the first conservation officer in Bermuda, he established a long-term recovery programme for the species. Hundreds of artificial nests (small, cement bunkers, resistant to waves and hurricanes) were built on several islets in Castle Harbour, on the eastern side of the archipelago. Wingate also started the ecological restoration of Nonsuch Island, the sturdiest of these islets. This initiative would play, years later, a fundamental role in the efforts to save the species.

Horn Rock in Castel Harbour Nature Reserve, the largest sub-colony of Cahows with ca. 50 nests. Photo: Nonsuch Expeditions

By the turn of the 21st Century, the species had already recovered to around 70 pairs. A new threat was literally looming on the horizon – the increasing frequency of big storms and hurricanes in the North Atlantic, resulting from a changing climate. In 2003, 10 Cahow nests were lost due to "Fabien", the worst hurricane in more than 50 years to hit Bermuda. The severity of Fabien, with wind gusts of up to 250 km/h, submerged 3 islets, and two others partially collapsed. The few remaining nesting sites of the species looked condemned to disappear.

David Wingate retired in 2000 and Jeremy Madeiros took over as conservation officer. Jeremy made the bold decision to start a translocation programme to re-introduce the Cahows on Nonsuch Island, which was by then fully covered with native vegetation. Between 2004 and 2008 102 chicks were translocated and fledged successfully from Nonsuch.

In 2009 there was good news: the first pair from the translocated birds occupied a nest on Nonsuch. With this new colony starting on the largest and highest of the islets, the future of this species is a little more certain. Almost 70 years after the re-discovery of the species, there were 131 pairs of Cahows breeding in several Castle Harbour Islands in 2019, which fledged 73 chicks due to the extraordinary life-time dedication of David Wingate and Jeremy Madeiros.

A BIT OF ECOLOGY

Until the development of miniaturized loggers, very little was known of the at-sea movements of highly pelagic, small seabirds. The first studies using geolocators in Cahows (2009/10), revealed that they use almost the entire North Atlantic as their foraging ground. More recently, a project was started to study their movements and at-sea ecology at a finer scale, using GPS technology. Preliminary results reveal that in a single trip they are able to travel to feeding areas more than 3,000 km away and covering a distance of more than 9,000 km. The study is also looking to the possible reasons for egg failures, by studying the exposure for the species to environmental contaminants such as POPs (Persistent organic pollutants) and trace elements. Equally important, the project is raising public awareness particularly through educational activities in schools.

Cahow fieldwork. Photo: Maria Dias

THE CONSERVATION STORY IS STILL ONGOING

The story of the extraordinary recovery of the Bermuda petrels is a source of inspiration and optimism. Around 42% of seabirds worldwide are threatened or near-threatened with extinction, and half of the species are experiencing significant declines. Climate change and invasive alien species are two of the top threats.

We know yet very little of potential threats occurring on the foraging areas of small pelagic species such as the Cahows. Marine protection of wide range species is challenging, as site-based conservation measures might not be enough. They are the classical example of species that need an ecosystem approach to protect their foraging areas, often located well beyond national jurisdictions. Negotiations are still going on how to achieve this goal. Large Marine Protected Areas (MPA), which are able to encompass the natural dynamism of oceanographic features, might be part of the solution. The North Atlantic Current and Evlanov Seamount MPA proposed by BirdLife International to OSPAR (Convention for the Protection of the Marine Environment of the North-East Atlantic) is a good example. This area is known to hold up to 5 million migratory seabirds from the North and South Atlantic, which travel here to forage on the abundant mesopelagic resources. If accepted, this will be the first MPA in the world specifically created to conserve the habitats of foraging seabirds during their non-breeding season. Cahows are one of the 21 species known to use the area, and action taken to preserve them can secure the future of others.

Frigatebirds lend a helping hand to regional-scale conservation in the Caribbean UK Overseas Territories

Dr Rhiannon Austin, University of Liverpool

R.E.Austin@liverpool.ac.uk, @RhiAustin

We are now a year into our most recent project in the Caribbean, which focuses on movement behaviour and conservation management of tropical seabirds in the region. Just prior to the outbreak of COVID-19, I travelled to Anguilla with my project co-lead Jon Green from the University of Liverpool, to host a workshop involving representatives from our large network of partner organisations in the Caribbean. The Caribbean is home to five of the UK Overseas Territories (UKOTs), including Anguilla, the British Virgin Islands, the Turks & Caicos Islands, the Cayman Islands and Montserrat. Management and conservation practitioners from the five UKOTs, as well as Bermuda and BirdsCaribbean (one of the largest conservation organisations in the Caribbean) all currently collaborate in this regional-scale Darwin Plus funded project.

The Darwin Plus grant scheme, for those unfamiliar with it, is a UK Government initiative to fund projects that help to protect biodiversity and the natural environment in the 14 UKOTs. Our team at the University of Liverpool have been awarded a number of these grants to work with Caribbean partners on seabird conservation science. Our most recent project developed following research in individual territories, which started with Dr Louise Soanes' work on seabirds in Anguilla and the BVIs, and continued with an ongoing project that I started in the Cayman Islands in 2016. We continue to learn much about tropical seabird behaviour and ecology through these projects, the outputs of which are now being directly fed into conservation plans and management strategies under National Legislation in the respective territories.

The field team during tagging work in the Magnificent Frigatebird colony on Little Cayman. Photos: Federico De Pascalis, 2017.

On the Cayman Islands, our team work closely with the Government's Department of Environment, and together with partners at the University of Exeter's ESI (Steve Votier), National Trust of the Cayman Islands and Deakin University, we have now been studying at-sea movements of multiple species for five years. Our research on **Red-footed** and **Brown Boobies** (*Sula sula* and *S. leucogaster*) is providing information about how these species partition resources in space and time in this tropical system, the dynamic cues that these birds use at sea to locate prey, and the importance of social versus lone foraging tactics in these populations. Our ongoing work on **Magnificent Frigatebirds** (*Fregata magnificens*) has revealed the tendency of this species to forage both in highly coastal environments as well as those offshore, and sex-based differences in their foraging tactics likely linked to unequal division of parental care (see our open access article here). In 2018, we began tracking birds with video cameras, and are gaining new insights into interspecies interactions at sea. We now have a successful long-term study site and collaboration with this UKOT (this year would have been our 5th field season), and are excited about the long-term datasets that we are slowly building. I am busily writing up a number of studies focused on niche partitioning, cue use, sociality, and at-sea vocal behaviour in this tropical environment, and some of these exciting aspects will form the focus of further work that will be undertaken over the coming years.

Protecting highly mobile marine vertebrates has its challenges, regardless of which ocean basin you work in. Management of this group is particularly difficult in regions such as the Caribbean that contain archipelagos composed of many closely situated, populated islands under jurisdiction of different nations, and with a range of socioeconomic pressures. Here, cooperative management is particular important, yet the marine and coastal environments of the Caribbean UKOTs benefit from varying

levels of protection and conservation action. Our current Darwin Plus grant therefore developed in response to the outputs of territory-specific projects, and an associated recognition of the need to increase efforts at regional-scale transboundary working.

The main focus of the project is to use seabirds as indicators to identify marine biodiversity hotspots across the region. We know from previous work in the Cayman Islands that Magnificent Frigatebirds range widely, and show a tendency to use and link onshore, coastal and offshore marine areas of multiple nations. We therefore aim to use this unique trait to help identify ecologically important areas in marine and coastal environments that may be relevant to a range of large mobile fauna. To achieve this goal, we are tracking and combining data from multiple frigatebird populations across the Caribbean. These data are then being used to train predictive region-wide habitat models, both within foraging areas at sea and roosting areas on land. This will allow us to pinpoint hotspots that are used by multiple populations, which is information that can be fed into conservation planning. The project ultimately hopes to bring those working in the partner UKOTs together to discuss ways to extend networks, which will help to protect biodiversity in this region.

In the project's second year, partner organisations will begin to implement activities, such as seabird colony surveys and feasibility studies for future priority work, to help address the training, data and management gaps that were identified during our recent workshop this spring. At the end of the project, outputs will be combined and presented at a large final workshop focused on 'Biological and Stakeholder Connectivity', which we will host during the next BirdsCaribbean conference in 2021. Our team aim to extend this meeting to those working in non-UK states and territories in the Caribbean interested in marine and coastal conservation issues. We hope overall that this project and its outputs will help to build long-lasting working relationships amongst Caribbean nations that have common biodiversity goals.

Magnificent Frigatebirds. Photo: Rhiannon Austin

Through our partnership with BirdsCaribbean, I also now act as one of the co-chairs of their Caribbean Seabird Working Group, which has many similar goals to our UK Seabird Group. We are in the process of trying to renew this group, both to strengthen the network of those working on seabirds in this region, and build capacity for information sharing. As part of this, we have recently asked interested parties to fill out our seabird survey (see https://bit.ly/seabird-survey). Therefore, if you have an interest in Caribbean seabird populations then we would love to hear from you!

The power of long-term research to facilitate conservation action for marine wildlife

Jonathan Handley, BirdLife International

Our oceans are in trouble. Globally, poor fishing practices are directly damaging to marine wildlife, and overfishing can deplete food resources for marine wildlife such as seabirds and seals. However, research by the BirdLife International Marine Programme, in association with scientists from the British Antarctic Survey (BAS) and Royal Society for the Protection of Birds (RSPB), shows that under current climate conditions sustainable fisheries can exist alongside conservation mechanisms for seabirds and seals in a well-managed Marine Protected Area. The research shows that when robust mechanisms are put in place by those managing marine environments, such as appropriate spatial and temporal limitations to fisheries, these facilitate the conservation of seabirds and seals while allowing commercial fishing to occur in a regulated manner.

Wandering Albatross, South Georgia. Photo: John Dickens

These encouraging results come out of a Marine Protected Area (MPA) covering South Georgia and the South Sandwich Islands (SGSSI), a UK Overseas Territory in sub-Antarctic. This vast protected area is about five times the size of the UK, and extends the full 200 nautical miles to the borders of the islands' exclusive economic zone. Planning how to manage such a large expanse is a daunting task. Our project set out to pinpoint some of the most important spots to protect, in order to guide the governance of the region.

BirdLife International has been leading on the identification of critical areas for birds and their associated biodiversity through its Important Bird and Biodiversity Area (IBAs) programme. These IBA sites are the majority subset of Key Biodiversity Areas (KBAs), sites critical to the persistence of all species. The new research applied the recently adopted global KBA standards and guidelines to seabird and seal satellite tracking data for the first time. This allowed us to highlight specific sites that are crucial for the survival of these species.

DECADES OF RESEARCH AND SATELLITE TECHNOLOGY GATHER IMPORTANT DATA

Collecting the information for this study was no mean feat. Researchers from across the globe assembled over 30 years of hard-earned data on 14 species of seabirds and seals breeding across the sub-Antarctic islands. These islands are located in a part of the Southern Ocean known as the 'Furious Fifties' due to the strong westerly winds. Though extreme for humans, this environment is a haven for wildlife – the islands are home to millions of seals, penguins, albatrosses, petrels and other marine wildlife, which rely on the rich local food resources of krill and fish. Researchers from BAS and other international teams have been braving the elements for several decades to determine just how many animals live on the islands and where they breed. They also deploy tracking devices to discover where they forage for food at sea. Armed with knowledge of these critical sites, the team could assess how well the islands' MPA was meeting its primary objective of conserving nature. Excitingly, the results of the study showed that through robust planning, both in space and time, the MPA protects important feeding sites at sea – at the appropriate times of year – which are critical for the breeding albatrosses, penguins, large petrels and seals.

Dr Susie Grant, a Marine Biogeographer at the British Antarctic Survey who was not directly involved in the study, said: "The results of this study show that the design of the MPA is working well in protecting the key foraging areas of seabirds and seals around South Georgia and the South Sandwich Islands, by minimising fishery overlap. This is great news for conservation in this region, and should be useful for informing the design of similar MPAs elsewhere."

The identification of KBAs also supported the five-yearly evaluation of the SGSSI's MPA, and provided valuable guidance on future research and monitoring efforts. This led to some key conservation wins for some of the marine species in the study.

King penguins, South Georgia. Photo: John Dickens

KEY CONSERVATION DECISIONS MADE AS A RESULT OF THE PROJECT

A key landmark for seabirds and seals was a two-month extension to the closure of krill fisheries throughout the entire MPA – meaning that for several months over the critical breeding period, animals have a near-zero chance of competing directly for food with krill fishing vessels. In addition, several permanent no-fishing zones were expanded, offering additional protection for species that forage around the islands year-round. In 2019, the international scientific community released a major global report highlighting how people are connected to nature, and how we rely on it. While 2020 was hailed as the 'super year for nature', the new challenge of COVID-19 highlights how we must strive to live in a world where people can coexist in harmony with the natural world. A key to achieving this is knowing where and how to act, and KBAs make a critical contribution. For example, another key finding of our research is that protection within MPAs may not be enough to reverse ongoing population declines. Many species are still threatened by illegal, unreported and unregulated fisheries outside the MPAs, and their populations continue to decline.

Ultimately, it is clear that protecting wide-ranging marine species will require a multi-faceted approach to conservation. The BirdLife Partnership has been protecting seabirds under this model for over a decade now. Through a united and global vision, the KBA framework can arm decision-makers with the necessary information and tools to bring about critical change.

Read the full scientific paper here. For more details on how we identify critical sites for marine species, view our interactive ESRI Story Map here.

Contribute to conservation opportunities for seabirds. Safely store your data. Collaborate with other researchers and conservationist by submitting your tracking data to the online repository: http://www.seabirdtracking.org/

This research was funded by the Pew Bertarelli Ocean Legacy Project of the Pew Charitable Trusts and Bertarelli Foundation, with key support coming from the RSPB and BAS.

Tracking Brown Boobies and Ascension Frigatebirds

Beth Clark & Tess Handby, University of Exeter

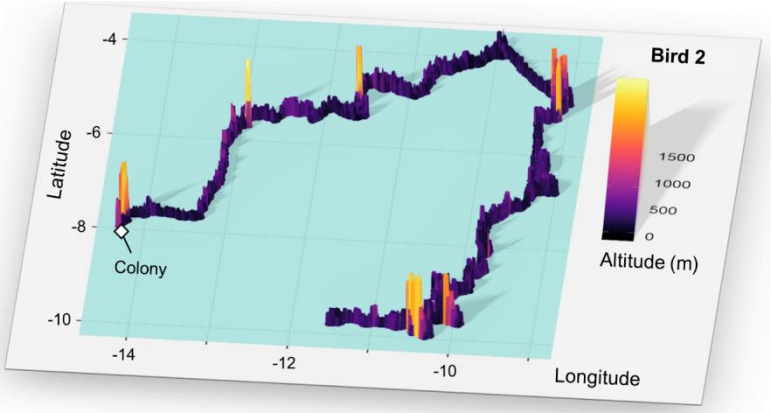
Ascension's seabirds were isolated on cliffs, stacks and Boatswain Bird Island, but since a successful feral cat eradication in 2002-2006, seabirds have slowly returned to the mainland. There were at least 93 nesting **Brown Boobies** on the area known as Letterbox in September-October 2018 and an amazing 66 **Ascension Frigatebird** (*Fregata aquila*) colonies, 22 of which were new for the 2018-2019. During our PhDs at the University of Exeter, Tess and I (Beth) were lucky enough to visit Ascension Island for five weeks to study the foraging behaviour of brown boobies and Ascension Frigatebirds. This experience was a bit different to our normal fieldwork; for me, tracking gannets in the UK and Iceland, and for Tess, working on Brent geese in Ireland and Iceland.

Female Brown Booby. Photo Beth Clark

Our study is the first to track Brown Boobies on Ascension and the first to use altitude loggers to investigate Ascension Frigatebird behaviour. This complemented previous GPS-tracking of **Masked Boobies** (*Sula dactylatra*), **Sooty Terns** (*Onychoprion fuscatus*) and frigatebirds, feeding into a wider dataset that is used to inform the designation and management of a large-scale marine protected area in Ascension's water. Protecting seabirds both on land and at sea is vital, particularly for the Ascension Frigatebird as it is listed as globally vulnerable and exists nowhere else.

To collect our data, we first slowly approached the nest and captured the birds, either with a hand net for the boobies or by hand for the frigatebirds (their wings were too long for the net). We then weighed and measured the birds before attaching the loggers to the central tail feathers. To recover the data, we recaptured the bird after a foraging trip. For some species, including frigatebirds, this can leave one bird on the nest for over a week awaiting their partner's return. Parents must protect the egg/chick from the high heat and UV exposure and defend the nest from potential predators such as frigatebirds, land crabs and invasive rodents.

For the Brown Boobies, the GPS tags recorded the bird's location every minute for two to five days. We retrieved data from 17 tags, totalling 76 foraging trips. This provided valuable evidence of the marine area used by the Brown Boobies. At other colonies around the world, the brown booby is a coastal feeder, relying on shallow diving to catch fish and squid. This data filled a gap in known seabirds' use of the waters close the island, and increased the number of species that could be used to provide evidence for the importance of this region for marine wildlife.



Female Ascension frigatebird GPS + altitude track.

Ascension's seabirds compete for scarce food resources in the surrounding ocean. Both booby species and frigatebirds eat the same food; flying fish and squid. However, the tracking data shows that they travel very different distances in search of food, separating by species. We now know that the Brown Boobies are travelling the shortest distance from the colony (up to 143 km). Given these shorter trips lasting only up to 12.6 hours, our data also shows that both the parents return to the nest every

evening, until the following dawn. On the other hand, frigatebirds travel the furthest, with one of our Letterbox birds reaching a distance of 677 km from the island during a 4,319 km trip lasting 11 days.

For the frigatebirds, our GPS tags recorded locations every five minutes for up to 12 days, while the altitude loggers recorded air pressure every second. Our aim was to see if including altitude improved our ability to located foraging behaviour, as this is difficult in frigatebirds because foraging and thermalling look similar in 2D. As other frigatebirds do, ours used thermals to reach high altitudes, here up to 1658-1871m. But they spent most of their time closer to the sea with a mean of 178m. Adding altitude to behavioural models helped us describe foraging. In 2D, trips were 60% "foraging" (40% travel). But in 3D, "foraging" was split into 45% mid-altitude + 12% low altitude (3% thermalling + 40% travel). This was a great result, but we didn't have altimeters for most tracks. The GPS loggers recorded altitude but were error-prone. So, we tested whether this error mattered for birds covering such a large range of altitudes. When we swapped barometric for GPS altitude in the models, 74-98% of the classifications matched meaning that GPS altitude is good enough. Consequently, we can use old data and tag males/small females that could not safely carry both loggers.

This project was carried out as part of the Darwin Initiative-funded Ascension Island Ocean Sanctuary Project (DPLUS063). Sam Weber of the University of Exeter led the project from the UK. We received invaluable support from Department of Conservation and Fisheries, particularly from Eliza Leat and Sophie Tuppen, as well as Andy Richardson, Jolene Sim, Natasha Williams, Megan Benjamin, Diane Baum and Matthew Stritch.

Mouse eradication on Gough Island postponed to 2021

RSPB Gough Island Restoration Team

Gough Island, part of the UK Overseas Territory of Tristan da Cunha in the South Atlantic Ocean is one of the most remote places in the world with a constant human presence. Since 1956 the South African National Antarctic Programme has been operating a weather station on the island, and the 5-10 staff members are the only humans on the island. Gough Island is also home to more than eight million birds from at least 24 different species and has been described as one of the most important seabird nesting sites in the world.

The Critically Endangered **Tristan Albatross** (*Diomedea dabbenena*) and **Atlantic Petrel** (*Pterodroma incerta*) breed almost exclusively on the island, alongside other highly threatened species such as the **Atlantic Yellow-nosed Albatross** (*Thalassarche chlororhynchos*), **MacGillivray's Prion** (*Pachyptila macgillivrayi*), and **Gough Bunting** (*Rowettia goughensis*). There have been population collapses for some of Gough's formerly abundant burrowing petrels, but the magnitude of declines is extremely difficult to quantify on this rugged island. The main threat: **House Mice** (*Mus musculus*), most likely to have been accidentally introduced to Gough Island by sailors during the 19th Century.

It is estimated that around two million eggs and chicks are lost to predation by these invasive, non-native rodents on Gough Island every year. Less than a third of Tristan Albatross chicks are surviving to fledge, while for smaller petrels the predation is almost complete: in the last four years only a single MacGillivray's Prion fledgling was recorded out of 50 nests monitored each year. For many other burrowing petrels the death toll may be similar, but cannot be quantified. In 2019, mice were also discovered to be attacking and killing adult albatrosses, despite a full-sized albatross being up to 300 times its weight. For long-lived species like the albatrosses an increase in adult mortality could be catastrophic.

The RSPB and Tristan da Cunha have developed an ambitious programme to save the Tristan Albatross and other highly threatened species on Gough Island, by eradicating mice in partnership with the UK Government, the South African Department of Environment, Forestry

Top: MacGillivray's Prions. Bottom: Gough Bunting. Photos: Steffen Oppel

and Fisheries, BirdLife South Africa, BirdLife International, Island Conservation, and the Royal Zoological Society of Scotland.

This is amongst the most ambitious island restorations ever attempted in the world. The plan is based on best practice methods developed in New Zealand to restore island ecosystems damaged by invasive non-native species. During a 12 week operational window rodenticide bait in the form of cereal bait pellets will be spread across the island by helicopters equipped with specially modified buckets, flown by pilots highly experienced in this work. The team includes world-leading island restoration experts who have delivered similar successful projects, including on South Georgia, and Macquarie Island. The logistics are complex, largely because of the island's remoteness. Gough Island is right in the middle of the South Atlantic Ocean, 1,550 miles (2,800 km) from the nearest city, Cape Town.

To protect other species which may accidentally consume the poison bait, Gough Buntings and **Gough Moorhens** (*Gallinula comeri*) will be taken into captivity prior to the baiting and looked after by a highly skilled aviculture team with veterinary guidance from the Royal Zoological Society of Scotland.

The baiting was scheduled to take place in the 2020 austral winter. It will probably come as no surprise that the incredibly difficult but essential decision had to be made in March 2020 to postpone the Gough Island Restoration Programme. Given the rapidly evolving COVID-19 pandemic at that time and the increasing travel restrictions, it had become logistically impossible for the specialist team to travel to South Africa and onto Gough during the pandemic.

The team behind the work are understandably hugely disappointed after the massive effort and hard work. However, the commitment from the project partners remains, and the mission to restore Gough to the seabird paradise it once was, continues. Defra Minister for Biosecurity Lord Gardiner said: "this ambitious RSPB project plays a big role in saving the critically endangered Tristan Albatross and Gough Bunting on the island. The Government will continue to invest and work with partners to support local communities and defend the unique biodiversity of the overseas territories. We look forward to the valuable work of this programme resuming as soon as it is safe to do so."

The team have already made great inroads on the initial project set up on Gough Island. This progress will be a huge benefit for the restoration when it goes ahead – hopefully in 2021. All donations received will go towards the project and preparing for the return.

While the disappointed conservation team sit marooned in various locations around the world planning how to proceed in 2021, the seabirds defied all travel restrictions and continued to roam around the oceans: in April a fishing boat operating off Amsterdam Island in the Indian Ocean reported a young **Southern Giant Petrel** (*Macronectes giganteus*) with a metal ring. The fishermen shared photos of the bird with French researchers, who contacted the team on Gough. The young Southern Giant Petrel had been ringed as a fledgling on Gough in January – and had travelled >7,000 km across the southern oceans within three months of learning to fly.

Paper Review

Marine hotspots of activity inform protection of a threatened community of pelagic species in a large oceanic jurisdiction

Requena, S., Oppel, S., Bond, A.L., Hall, J., Cleeland, J., Crawford, R.J.M., Davies, D., Dilley, B.J., Glass, T., Makhado, A., Ratcliffe, N., Reid, T.A., Ronconi, R.A., Schofield, A., Steinfurth, A., Wege, M., Bester, M. and Ryan, P.G. (2020), *Animal Conservation.* doi:10.1111/acv.12572

The UK Overseas Territory of Tristan da Cunha is among the most important areas for pelagic predators in the South Atlantic, including several endemic and globally threatened seabirds and pinnipeds not currently adequately represented in marine protected areas. The Tristan da Cunha Government is in the process of establishing a marine protection regime for its entire Exclusive Economic Zone (EEZ). In this paper, the authors create a multi-species metric to inform spatial planning of protection measures within the Tristan da Cunha EEZ. Tracking data from nine seabird species and one marine mammal were utilised to provide a seasonal analysis of the proportion of time spent in each cell of a 10x10km grid across the >750,000km^2 area. All the tracked species spent at least 10% of their time-at-sea within the EEZ, with significant seasonal and species variation, up to 100% of the time for **Northern Rockhopper Penguins** (*Eudyptes moseleyi*) during brood-guard. Several of the multi-species activity hotspots identified were spatially constant across all seasons, with 9.3% of the EEZ important in more than one season and a total 24.8% of EEZ important for at least one season. Hotspots were located primarily around breeding islands and seamounts.

This analysis provides the scientific justification for the Tristan Government's long-standing community-led closure of the 50 nautical mile buffer around the islands to all commercial non-lobster fishing. Conflicts with other fisheries and shipping traffic are also identified, with potential solutions including temporal and spatial closures, adoption of all available mitigation measures to minimise bycatch, and a shipping traffic separation scheme.

Viv Booth

Events

15th International Seabird Group Conference

Due to the postponement of the World Seabird Conference (WSC3) in Tasmania to October 2021, the Seabird Group have taken the decision to delay the **15th International Seabird Group Conference**, due to be held in Cork, until Autumn 2022. We recognise that this might be disappointing news but we want to support the World Seabird Union under what are very challenging times.

We are working with the local organisers in Cork and will let our members know the dates of the next conference via our newsletter.

Design a Seabird Group T-Shirt

Danni Thompson, Seabird Group Membership Secretary

We are pleased to announce the launch of our **official clothing store**. Featuring a range of items adorned with our logo and unique seabird designs, there's something to suit everyone. A customise option for each product means you can purchase exactly what you're looking for.

All our products are made from 100% certified organic cotton and printed in the UK in a renewable energy powered factory. Our products and packaging produced by Teemill are made from natural materials, not plastics. To keep our environmental impact even smaller, every product is designed to be sent back to Teemill when it is worn out to be turned into a new product. This means our products can be returned and remade again and again and again.

All proceeds from our products support the Seabird Group, helping to fund seabird research.

https://seabirdgroup.teemill.com/

To celebrate the launch of our store we are holding a Design a T-shirt **competition,** details of which can be found in the poster attached with this newsletter.

Website: **www.seabirdgroup.org.uk**

Facebook: **www.facebook.com/pages/TheSeabirdGroup/**

Twitter: **www.twitter.com/TheSeabirdGroup (@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

Current retirement dates (at AGM) are shown in brackets:

Chair	Liz Humphreys (2023)	chair@seabirdgroup.org.uk
Secretary	Annette Fayet (2023)	secretary@seabirdgroup.org.uk
Treasurer	Ian Cleasby (2022)	ian.cleasby@rspb.org.uk
Membership Secretary	Danni Thompson (2022)	membership@seabirdgroup.org.uk
Seabird Editor	Viola Ross-Smith (2020)	journal@seabirdgroup.org.uk
Newsletter Editor	Katherine Booth Jones (2022)	newsletter@seabirdgroup.org.uk
Website Officer	Jeff Stratford (2016-)	jeff.stratford@pms.ac.uk

Ordinary Members:

Assistant Newsletter Editor	Vivienne Booth (2020)	Vivienne.Booth@rspb.org.uk
Early Career	Beth Clark (2019)	b.l.clark@exeter.ac.uk
Seabird Census	Will Miles (2023)	willtsmiles@hotmail.com
Social Media	Saskia Wischnewski (2022)	saskia.wischnewski@rspb.org.uk
Assistant Membership Secretary	Zoe Deakin (2022)	DeakinZ@cardiff.ac.uk

Current membership rates	
Standing Order	£20
Concession	£15
Institution	£35
International:	£21
Life	£300

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.