



## Contents

News	1
Roseate Terns in NE Atlantic	2
Protect a penguin	3
Cormorant mortality in Wales	4
Paper reviews	5
Seabird Group grants	5
3 <sup>rd</sup> World Seabird Twitter Conference	6
Biosecurity on the Scillies	6
Bass Rock aerial photos	8

# NEWSLETTER 135

June 2017

## News

### The horrifying extent of global plastic pollution

**Henderson Island**, located in the eastern South Pacific, has been found to have the highest density of anthropogenic debris recorded anywhere in the world. Scientists from the University of Tasmania and the Royal Society for the Protection of Birds estimated that more than 37 million pieces of plastic lay on the island! This amounts to 17.6 tonnes, but only 1.98 seconds' worth of the annual global production of plastic. Much of the debris was buried and out of sight, and thus the true amount of plastic debris is underestimated. Furthermore, thousands of new items were washing up on the island's shores every day. Crabs have found themselves new homes in items such as cosmetic jars and even a doll's head. Old plastic can be sharp, brittle and toxic and likely offers no benefit to crabs. The horrifying scale of the plastic pollution on one of the most remote islands in the world is indicative of the extent and urgency of the problem. As said by Jennifer Lavers, one of the authors of the study, "Let's not wait for more science. Let's not debate it. The rate of plastic in our oceans is absolutely phenomenal, and we need to do something now." The results of the study were published earlier this year in the [Proceedings of the National Academy of Sciences of the USA](#).

#### Sources:

The Guardian.

Lavers JL & Bond A. 2017. Exceptional and rapid accumulation of anthropogenic debris on one of the world's most remote and pristine islands. *Proceedings of the National Academy of Sciences of the USA* 114:6052-55.

### Dates for your diary – the next International Seabird Group Conference!

The **14th International Seabird Group Conference** is to be hosted by the Seabird Ecology Group (SEGUL) at the University of Liverpool, UK over 3-6 September 2018. The conference promises an exciting showcase of the latest seabird research, located within the heart of the city of Liverpool, famous for its maritime history and cultural diversity. Registration will open in September of this year and a website will be launched soon. Please keep your eye on our website - <http://seabirdgroup.org.uk/> - for further information. We will also publicise information, as it becomes available, via our [Facebook](#) and [Twitter](#) accounts. For those of you on Twitter, you can follow the hashtag #seabirds18.

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## Join the Puffarazzi!

The RSPB has launched 'Project Puffin', for which they are asking members of the public to share photos of Puffins with food in their bills, taken at colonies in the UK between early June and late July 2017. The objective is to learn more about what Puffins eat. On their website, the RSPB provide details of locations of potential colonies to visit, guidelines for taking photographs while avoiding disturbance to Puffins, and instructions on how to submit your photos. See their [website](#) for further details.

## Status of Roseate Terns in the North-east Atlantic



Roseate Terns on the nestbox terrace at Coquet Island. Photo: Paul Morrison

### Adam Seward, RSPB

**Roseate Terns** in the North-east Atlantic are currently restricted to just three main colonies in the waters of Britain and Ireland: **Rockabill** (Dublin Bay), **Lady's Island Lake** (County Wexford) and **Coquet Island** (Northumberland). Smaller numbers breed in a handful of other British and Irish tern colonies, and in Northern France. Using the extensive dataset of ringing, ring resighting, colony counts and monitoring of breeding success collected at the main sites, an analysis has revealed the population processes driving the numbers of Roseate Tern within the metapopulation. The integrated population model pulls together all available sources of data, providing better estimates of annual survival and movement between colonies than would be possible with just a single data type alone. The analysis reveals that the smallest main colony, Coquet Island, has been dependent on immigration for population growth. Recent increases in survival of birds fledged on the island show that the colony may be becoming less reliant on birds from elsewhere to maintain the breeding population. The largest colony by far is Rockabill, with an estimated 1556 pairs in 2016: over 80% of the pairs in the metapopulation. Clearly, Rockabill is of huge importance for the status of Roseate Tern as a breeding bird in the North-east Atlantic. Rockabill has been an important source of immigrants for both Coquet Island and Lady's Island Lake. The analysis suggests that, had there been no movement of birds between the different colonies, the population of Rockabill – and the metapopulation as a whole – would have been even greater than it is now. There are, however, signs that density dependence may be kicking in at Rockabill. Despite the potential sink effect of smaller colonies, the potential for a catastrophic event to wipe out a whole colony of these densely-breeding birds suggests that it would be wise to encourage Roseate Terns to continue breeding at several sites, which could act as refuges in the future.

**Vivienne Booth, RSPB/Seabird Group**

In March, BirdLife launched their '**Protect a Penguin**' campaign (<http://penguin.birdlife.org>) dedicating the recent issue of 'BirdLife: The Magazine' to all things Sphenisciform.

The public popularity of penguins, evident in children's animations, chocolate biscuits, the logo of a long-established publishing house, and many other products besides, has not been sufficient to protect these charismatic species. Ten of the 18 extant species worldwide are classified as 'Vulnerable' or 'Endangered' on the IUCN Red List. Threatened at their breeding grounds by predation, introduced species, habitat degradation and disease, while at sea declining fish stocks, by-catch by fisheries, oil spills, and climate change-related increases in the frequency and intensity of storms, all cause problems for penguins. Several penguin species have a very limited range, making them particularly vulnerable to stochastic events and localised threats.

However, there are some grounds for hope: the recent **Ross Sea Marine Protected Area** designation (October 2016) should benefit Emperor Penguins and Adélie Penguins, and there is ongoing work by BirdLife and British Antarctic Survey to identify important areas of the Weddell and Scotia Seas. In addition, there are species-specific projects to improve understanding of penguin ecology, and identify and implement protection measures around the world.



The Northern Rockhopper has suffered huge population declines in recent years, resulting in it being classified as 'Endangered' on the IUCN Red List. Photo: Andy Schofield.

Take the **Northern Rockhopper**: 85% of the world population breeds on the Tristan group of islands in the South Atlantic. The population has declined by more than 90% since the 19<sup>th</sup> century, and it is classified as 'Endangered'. The islands were settled in the 1800's, and historically the islanders collected penguin feathers for stuffing pillows, mattresses and making ornaments. But when the birds were threatened by an oil spill from the MS Oliva (which ran aground on Nightingale Island in 2011), the islanders sprang into action to save as many as possible. This quick response and sustained action (it was around three months from the wreck to the last oiled bird being released), supported by international rescue teams which arrived some days later, saved approximately 10% of the oiled birds. Now, there is a Darwin-funded partnership project between RSPB, the Tristan Conservation Department, British Antarctic Survey, the Royal Zoological Society of Scotland and the South African Department of Environmental Affairs. **Project Pinnamin** (the local name for the penguins) is investigating the marine ecology, breeding

biology and population dynamics of the species through a variety of tracking and monitoring methods, as well as developing an understanding of their marine habitat preferences to identify 'Important Bird Areas'.

Declines of the African Penguin have been even more extreme, with 99% of the population lost since the 1900's: another 'Endangered' species. Egg-collecting and habitat-damaging guano-harvesting between 1900 and the 1960s were further compounded by the industrial sardine fishery (which was so unsustainable that it led to a fishery collapse within 20 years) taking the penguins' preferred prey. The fishery then switched to anchovy, the other food source available to the penguins, causing the remaining fish stocks to shift to an area outside the penguins' 40 km foraging radius. An innovative project led by BirdLife South Africa is attempting to re-establish a colony nearer to the food supply by excluding predators, providing nest boxes, moving newly-fledged chicks to the new site, and using decoys and calls to attract individuals.

Yellow-eyed Penguins, Erect-crested Penguins and Galapagos Penguins are also all 'Threatened' species. The latter has a world population of just 1,200 birds, 95% of which breed on just two islands. Despite its adaptations to the tropics, this species is especially vulnerable to the El Niño-Southern Oscillation, and during phases of warmer water the resulting food shortage has led to repeated population crashes (in 1982-83, 77% of the Galapagos Penguin population was lost) from which the penguins' population recovers slowly. An increasing frequency of warm water events will leave little recovery time and could easily result in extinction of the species.

The threats facing penguins are many and varied, and thus the solutions must also be varied, operating at local, national and international scales. Protecting the penguins will require public support, political will, and the hard work of numerous dedicated individuals around the world. Let's hope this campaign inspires many more people to help protect penguins.

## Bad weather and Cormorant mortality in Wales

### Steve Sutcliffe, Pembrokeshire Ringing Group

Four members of the **Pembrokeshire Ringing Group** visited [St. Margaret's Island](#) (located in Carmarthen Bay in South Wales) on 13 June 2017 to carry out the annual ringing of **Cormorant** chicks and successfully ringed 87 chicks. However, they found a scene of devastation too, with at least 60 large nestlings found dead on the nests following bad weather during the previous week. They were all large, with 20-35% covering of feathers and the rest of the body covered in down. They would have been too big to be brooded by parents, so in the torrential downpours experienced in the preceding 10 days, they would have got completely sodden and, with the strong winds, succumbed to the cold. Many nests contained one or two dead chicks draped over the nest cup. It is possible that the parents also struggled to find food for their chicks in the bad sea conditions, but in over 50 years of studies on the island this sort of mortality has never been seen before.

It is worth noting that on nearby Thorne Island the Cormorants were around two to three weeks earlier than the St Margaret's colony and were seen incubating in the second week of March and, on 12 June, all but three or four chicks had already fledged whereas on St Margaret's most were still a couple of weeks away from fledging. There were also some very small chicks and one nest with eggs – presumably all re-lays.

Anecdotal observations on both Thorne Island and St Margaret's Island suggested that the numbers of **Herring Gull** chicks seem to be quite small, so

maybe the weather has created a problem for the gulls too. A visit to Caldey Island (adjoining St. Margaret's) in the middle of June will tell us if this is the case and the Skokholm warden is planning to look at their colonies.

To find out more about the activities of Pembrokeshire Ringing Group, check out their [blog](#).



One of many dead Cormorant chicks found on St. Margaret's Island in south Wales, following bad weather in June 2017. Photo: Anne Sutcliffe.

### Yoda K *et al.* 2017. Preparation for flight: pre-fledging exercise time is correlated with growth and fledging age in burrow-nesting seabirds. *Journal of Avian Biology*. DOI: [10.1111/jav.01186](https://doi.org/10.1111/jav.01186)

While it is well understood that chicks of many species of burrow-nesting seabirds emerge from their burrows and exercise their wings in the days or even weeks before fledging, we actually know very little about the frequency, purpose or significance of this behaviour. This is most likely because these chick excursions largely occur at night, making them not so convenient to study. The authors of this study used infrared video cameras to film the excursions of chicks of the **Streaked Shearwater** *Calonectris leucomelas* from their burrows on Awashima Island in Japan. They found that chicks that undertook longer excursions from the nest exhibited more rapid increases in wing length and higher body mass at fledging and they fledged earlier. However, the study could not determine the direction of any causal relationship, i.e. if faster growth promotes exercise or conversely whether exercise promotes growth. Having longer wings and higher body mass has been linked to increased survival probability of fledgling birds, so exercise may promote survival in this way. Earlier fledging may also lead to individuals embarking on migration earlier, which may be advantageous as food availability decreases in the waters around the breeding colony. Separately, acceleration-temperature-depth loggers were attached to chicks to quantify the excursion time (determined by a change in temperature between the burrow and outside) and time spent exercising wing muscles, i.e. flapping, from the acceleration data. Close to fledging, chicks flapped their wings at similar rates to adults, suggesting they had developed the necessary locomotory ability for flight.

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### Buxton RT *et al.* 2017. Visitor noise at a nesting colony alters the behaviour of a coastal seabird. *Marine Ecology Progress Series* 570:233-246. DOI: [10.3354/meps12073](https://doi.org/10.3354/meps12073)

Seabird colonies often attract large numbers of visitors and it is thus not surprising that they have been a focus for assessing the effects of human disturbance on, e.g. behaviour, habitat use, and breeding success. Although visitor management strategies at national parks and nature reserves aim to reduce or eliminate human disturbance to wildlife, this tends to focus on reducing visual disturbance and direct effects associated with trampling (e.g. using fences and hides). However, noise often persists at high levels and little is understood of its consequences for wildlife. The authors of this study assessed how visitor noise affects the behaviour and abundance of **Brandt's Cormorants** *Phalacrocorax penicillatus* on **Alcatraz Island**. The island, located in **San Francisco Bay**, is an important nesting site for the cormorants, and due to its history of once being home to some of America's most notorious criminals in the federal penitentiary that operated there, Alcatraz is one of California's most visited attractions. Using paired acoustic and video recorders, the study correlated visitor noise with behaviour in three consecutive years. In one year, when the colony was located close to a heavily visited building, disturbance-related behaviours (i.e. wing fluttering and flying) increased as visitor noise levels increased, though there was no effect on cormorant abundance. The effects were exacerbated in the presence of gulls at colonies, with evidence of both higher disturbance and lower cormorant abundance. However, in the two years when the colony was located far from visited buildings, no relationship between noise and behaviour was observed. Whether the disturbance caused by visitor noise translates into population-level effects, for example by affecting breeding success or likelihood of prospecting birds to recruit to the island, is unknown, but an important focus for future research.

## The Seabird Group continues to fund exciting research!

### Holly Kirk, Seabird Group Secretary

We had a great response to February's grant call, with 10 applications all of a very high standard. Three applicants were funded £500 each, with projects located across the globe. We look forward to finding out the results of their work in future issues of the newsletter, but in the meantime, here is quick snapshot of their planned research. **Ingrid Pollet** (Acadia University, Canada) is currently working on Bon Portage Island, Canada, conducting a census of **Leach's Storm-petrels**. This species was recently up-listed to 'vulnerable' on the IUCN Red List, so more information about breeding populations is vital. **Fransisca Noni** (Seabirds Indonesia) will be using ship-based transects to conduct seabird surveys in **Jakarta Bay**, a well-known but little studied flyway. Very little is known about seabird populations in this area, which has very high levels of anthropogenic activity. **Martyna Syposz** (Oxford University, UK) has been studying the effects of artificial lighting on **Manx Shearwaters** and will be extending this research to fledglings from the Isle of Rum, Scotland later this year. The deadline for the next round of grants is 31 October. Find more details [here](#).

## Twitter conferences: connecting a global scientific community

Stephanie Avery-Gomm, Max Czapanskiy & Saskia Wischnewski



Twitter Conferences are an initiative of the World Seabird Union, which over the past 3 years have shown to be a cost-effective and carbon-friendly complement to traditional conferences. The most recent World Seabird Twitter Conference (#WSTC3) involved 128 presenters from 25 countries, and reached a total audience of 3.9 million people. Obviously, not all of those reached were seabird scientists, thus demonstrating the immense value of these conferences for communicating science to a broader audience - something that nearly all academics agree is critically important.

Presenters get just 6 tweets to explain their research. This year, the format of the conference was expanded to include plenary presentations by prominent researchers and live panel Q&A broadcasts. Additionally, the entire conference (including broadcasts) was made available via the [www.seabirds.net/wstc3.html](http://www.seabirds.net/wstc3.html) website, for those among the seabird community that wished to participate without using Twitter.

The Grand Prize was won by **Liz Morgan** (@ElalmoLiz) who gave a fantastic presentation using cartoons and animations to illustrate her research on Farne Island Shags. **Rachael Orben** (@RachaelOrben) won the runner up for her presentation on the classification of seabird movements, **Catherine Cavallo** (@CavalloDelMare) won the special penguin/Antarctica prize by an anonymous sponsor for her presentation on identifying the diet of Little Penguins using DNA metabarcoding analysis and **Project Pelican** (@ProjectPelican) won the special achievement award for science communication.

There can be no doubt that Twitter conferences foster communication and increase engagement among researchers themselves (even while working in remote field sites!), as well as engaging the public in science, around the globe. Thanks to the many organisers, and the co-chairs Max Czapanskiy (@mfczap) and Saskia Wischnewski (@saswisch).

**Liz Morgan**, winner of the Grand Prize, used [cartoons](#) to illustrate three mechanisms by which seabird colonies in close proximity may partition food resources.

## Biosecurity measures to protect seabirds

Earlier this spring, the [Isles of Scilly Seabird Restoration Project](#) carried out a 'mock rat incursion response' to test our protocols for removing rats if, and when, one returns to St. Agnes or Gugh.

The incursion response team is split into three (on all sides of the water): St. Agnes and Gugh, St Mary's and mainland Southwest region. Firstly, if anyone 'rats on a rat' (suspects anything suspiciously ratty on St. Agnes or Gugh) they call a hotline number based at the [Isles of Scilly Wildlife Trust](#) (IoSWT) on St Mary's. The call is then sent onto the community via a St. Agnes Seabird

Heritage Volunteer Coordinator, who organises a site inspection and surveillance of nearby biosecurity stations, then reporting the findings to the RSPB team in Penzance.

If there is any positive rat sign, then an incursion response consists of: the St. Agnes community 'seabird heritage volunteers' placing bait into the biosecurity stations within 24 hours and a mainland RSPB team arriving within 48 hours to carry out a month's wider baiting programme. We tested whether the actions required from all three teams within the first 48 hours could indeed be delivered. The results were then fed back as part of a community talk at the end of the 48 hours.

In order to test what resources would be available if the rat were real, most members of the teams did not know this mock was happening. Project Manager Jaclyn Pearson played the role of the person 'who ratted on a rat', and the IoSWT CEO, mainland response Coordinator and Administrator knew about the mock, asking all team members to respond as though it were a real event. The results of this mock incursion were excellent. Fourteen St Agnes 'seabird heritage volunteers' swapped monitoring wax for bait (a mock bait which contains no rodenticide was used in this mock response) in 100 of the 105 stations within 24 hours. The community members worked so well together that most bait was out within 6 hours, and between them they covered the stations of any rodenticide-trained volunteer that was away or unable to assist that day.

A team of four RSPB staff and volunteers from the mainland were coordinated and could have led an incursion response. Three of these mainland team members could have arrived on St. Agnes within 24 hours, and one team member within 48 hours. Also, three of these team members were involved in the project previously assisting rat removal and biosecurity checks on St. Agnes and Gugh, so already have a good knowledge of the islands and are passionate in continuing to protect the seabirds. All team members involved deemed the incursion protocol to be robust with minor adjustments being required. All felt well supported through the community and mainland coordinators and felt clear about their roles, and what would be expected over the first 48 hours and then the following month.

Thank you to everyone involved. If and when a rat gets back, we all feel confident that this robust incursion plan combined with its resources, will have a high probability of returning the islands to, and maintaining them as, 'rat-free'.

You can read the original post on the website here: <http://www.ios-seabirds.org.uk/latest-news/mock-rat-incursion-response-well-done-community/>.



Atlantic Puffin on the island of Runde, which has the most southern seabird cliffs in Norway supporting hundreds of thousands of breeding seabirds. Photo: Johan Nilsson.

## Aerial photos of Bass Rock

**Stuart Murray**

The **Bass Rock** is the world's largest **Northern Gannet** colony (Murray et al 2014), situated conveniently close to the Scottish mainland in the Firth of Forth, east of Edinburgh. This makes keeping an eye on what happens there relatively easy, especially so when it comes to doing it from the air. On 14 June 2017, a series of excellent pictures were taken by Historic Environment Scotland, who happened to be flying past the rock. These gave complete colony coverage at a very high resolution. Should I feel inclined, I could count them, but it's not an exercise to approach lightly as it takes weeks of effort, so for now I'll give it a miss.

However, I'm familiar enough with the colony to see that there has been little change since the last count, made on the 23 June 2014, simply because there is so little space left for further increases. The section that did have space, below the lighthouse and hemmed in by the medieval fortress walls (see photo) has now filled up with nesting- and site-holding pairs, almost to the foot of the walls. The other change, in the walled garden near the summit of the rock has been caused by record-breaking rainfall that fell the week before (85mm in 48 hours in Edinburgh), turning both halves of the garden into shallow ponds and drowning any nests built there. This happens periodically, but rarely when birds are breeding, as summer rainfall is usually light, and the ponds generally form in autumn or winter. Numbers breeding here are small and this temporary loss to the breeding population will have little effect in the long term. However, the impact of such intense, prolonged and chilling rainstorms may have a negative effect on chicks and possibly affect breeding success. Hopefully there won't be a repeat of such conditions this season.

**Murray, S., Wanless, S. & Harris, M.P. 2014.** The Bass Rock - now the world's largest Northern Gannet colony. *British Birds* 107: 765–769.



Bass Rock from the south, showing a colony increase since 2014 below the lighthouse and between the fortress walls, 14 June 2017. Photo: Historic Environment Scotland.



Website: [www.seabirdgroup.org.uk](http://www.seabirdgroup.org.uk)

Facebook: [www.facebook.com/pages/TheSeabirdGroup/](https://www.facebook.com/pages/TheSeabirdGroup/)

Twitter: [@TheSeabirdGroup](https://www.twitter.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

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

Chairman	Stephen Votier (2019)	<a href="mailto:S.C.Votier@exeter.ac.uk">S.C.Votier@exeter.ac.uk</a>
Secretary	Holly Kirk (2020)	<a href="mailto:secretary@seabirdgroup.org.uk">secretary@seabirdgroup.org.uk</a>
Treasurer	Will Miles (2018)	<a href="mailto:willtsmiles@hotmail.com">willtsmiles@hotmail.com</a>
Membership Secretary	Alice Trevail (2018)	<a href="mailto:membership@seabirdgroup.org.uk">membership@seabirdgroup.org.uk</a>
Seabird Editor	Richard Sherley (2019)	<a href="mailto:journal@seabirdgroup.org.uk">journal@seabirdgroup.org.uk</a>
Newsletter Editor	Hannah Watson (2018)	<a href="mailto:newsletter@seabirdgroup.org.uk">newsletter@seabirdgroup.org.uk</a>
Website Officer	Jeff Stratford (2016)	<a href="mailto:jeff.stratford@pms.ac.uk">jeff.stratford@pms.ac.uk</a>
Ordinary Members:		
Assistant Newsletter Editor	Vivienne Booth (2020)	<a href="mailto:Vivienne.Booth@rspb.org.uk">Vivienne.Booth@rspb.org.uk</a>
Early Career	Helen Wade (2017)	<a href="mailto:helenwade01@gmail.com">helenwade01@gmail.com</a>
Seabird Census	Stuart Murray (2018)	<a href="mailto:murraysurvey@yahoo.co.uk">murraysurvey@yahoo.co.uk</a>
Social Media	Viola Ross-Smith (2018)	<a href="mailto:viola.ross-smith@bto.org">viola.ross-smith@bto.org</a>

### Current membership rates

Standing Order	£20
Concession	£15
Institution	£35
International:	£21

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 the Seabird Group.

Submissions for the newsletter should be emailed to the Newsletter Editor: [newsletter@seabirdgroup.org.uk](mailto:newsletter@seabirdgroup.org.uk). We advise a maximum of 1500 words and ask that photographs and figures are sent as separate files and with full credits. **Deadlines are: 15<sup>th</sup> January (February edition); 15<sup>th</sup> May (June edition); and, 15<sup>th</sup> 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.