the Seabird Group

# NEWSLETTER 133

# October 2016

Contents



## 13th International Seabird Group Conference – a resounding success!

### Seabirders flock to Edinburgh

**James Grecian (University of St Andrews)**

In early September, nearly 200 people descended on Edinburgh to attend the 13th International Seabird Group Conference, held over 4 days at the University of Edinburgh and organised by Francis Daunt (CEH) and Sue Lewis (University of Edinburgh) and their colleagues. During the conference, delegates had the opportunity to hear from four fascinating plenary speakers: **Tony Martin** gave us all an insight into his work on the South Georgia rat eradication project; **Emmanuelle Cam** drew unexpected parallels between seabird lifetime reproductive success and econometrics; **Paulo Catry** discussed how moonlight influences the nocturnal behaviour of seabirds; and, based on his experience working with Guillemots on Skomer, **Tim Birkhead** emphasised the importance of long-term monitoring projects.

This year's conference had a strong focus on early-career researchers, and many of the 57 brilliant talks were given by doctoral, masters and undergraduate students. The conference sessions covered a broad-range of interests, including foraging ecology, migration, demography and conservation, and there was a special session on the Seabird Monitoring Programme, coinciding with its 30th anniversary. Between sessions there was ample opportunity to peruse the wide-range of topics covered by the 54 posters, and the poster reception was so well attended it required strong elbows to navigate!

Sarah Wanless and Mike Harris were awarded Lifetime Achievement Awards from the Seabird Group at the 13th International Conference in Edinburgh.

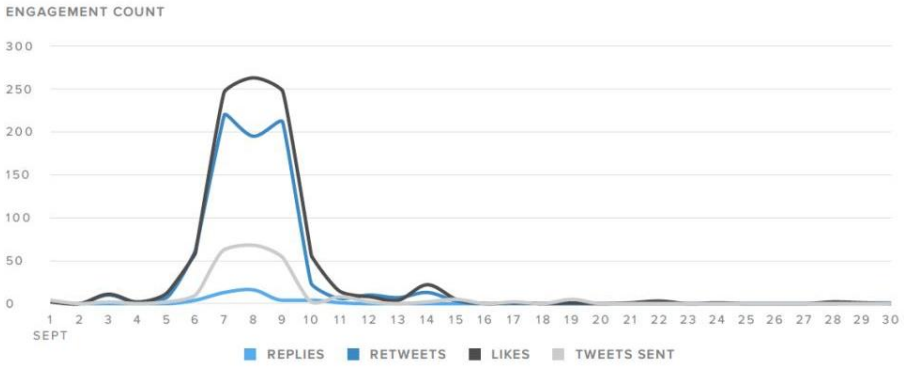
Given the location, and proximity to the Isle of May, it seemed very appropriate that this year the Seabird Group awarded Sarah Wanless and Mike Harris with Lifetime Achievement Awards in acknowledgement for all that they have done for seabird science during their

careers to date. Their long-standing support of the Seabird Group and mentoring of early career scientists have helped to make this a fantastic community of researchers, and never is this more obvious than during the Seabird Group Conference.

## Seabirders setting social media on fire at #seabirds16

**Viola Ross-Smith (BTO/SG Social Media rep) and James Grecian (University of St Andrews)**

The social media campaign for our 13th International Conference in Edinburgh in early September 2016 started almost a year before the event, as the hashtag #seabirds16 was unleashed on Twitter and (to a lesser extent) Facebook. Fortunately, the seabird community is brilliant on social media, with well-established ways of sharing seabird-related information, such as #seabirdersaturday. We did a big social media push in advance of the abstract and registration deadlines, and then upped our game again as Edinburgh ticked around. This meant there was already a certain social media buzz before Tony Martin took to the stage for his opening plenary lecture, but we were still delighted by how that buzz became a full-on social media storm over the course of the conference.




Audience engagement by the Seabird Group's Twitter account during September, showing a huge peak during and after the conference. Figure generated using Sprout Social.

Several people were live-tweeting the event, including the Seabird Group Twitter account (@theseabirdgroup), and ornithology journals - Ibis and Journal of Avian Biology. As seabirds are just so darn cool, the wider world still took note. By the morning of Wednesday 7th September, #seabirds16 was trending, and this success continued through much of the rest of the conference.

Overall, tweets using #seabirds16 were seen more than 2.6 million times on Twitter, reaching over 318,000 unique users across the globe. As a result, engagement with the Seabird Group's Twitter account increased by nearly 400% and we gained 162 new followers. It was great to see a number of seabirders joining Twitter during the conference, and we hope they will become part of our active online seabird community.

All in all, it was really fun to see our event reaching so far beyond the walls of the John McIntyre Conference Centre, and we hope our social media efforts will inspire people to learn more about seabirds, support their conservation, and maybe even contribute to seabird research themselves. In the meantime, here's to #seabirds18.

## Building a strong early-career network

**Helen Wade (SG Early Career rep)**

The 13th International Seabird Group Conference kicked-off with an Early Career (EC) event on the afternoon of Tuesday 6th September. The session provided the opportunity for over 50 EC participants to meet, to get to know each other, and to network with others with similar research interests and at a similar stage in their career. The seabird EC community is made up of individuals from a broad variety of backgrounds, with many, but not all, working in research. The EC event intended to draw on that accumulation of experience for the collective benefit of the EC community and to offer support and guidance at this early stage in their careers.

Mingling was encouraged with an icebreaker where EC participants had to find out interesting facts about people they hadn't previously met, before we moved on to the main event of the session, which involved EC participants splitting into groups to explore topics of relevance and importance to those in the early stages of their career. These topics included scientific writing, giving presentations, increasing the impact of research, and what the next career steps might be. Each group was asked to discuss their topic and come up with some top tips and advice for EC participants. The groups then presented and shared their

ideas with the rest of the room to help tackle some of the key challenges that are part of a career in seabird research and conservation. The information is also going to be collated and sent to attendees for reference.

The EC session also benefitted hugely from contributions from a panel of four experienced members of the seabird community: Steve Votier (University of Exeter), Viola Ross-Smith (BTO), Matt Wood (University of Gloucestershire) and Sam Patrick (University of Liverpool). The panel shared their extensive expertise with participants during group discussions, were on hand to answer questions, and offered advice based on their own experience both within and outside of academia.

Thanks to all those that attended and contributed to discussions, to the panel for giving up their time and expertise, and to the conference organisers for supporting the event.

## Report from 9th International Penguin Congress

**Jennifer Grigg (University of Bristol)**

Almost a year after the 2nd World Seabird Conference, Cape Town once again played host to seabird researchers from around the world at the 9th International Penguin Congress. Held every three years, the congress provides an opportunity for scientists to come together to share the latest advances in penguin research, and this September over 200 delegates continued this tradition in the largest penguin congress yet. In total, 64 oral presentations, 87 posters and six workshops were held over five days. While each presentation and poster provided a fascinating insight into penguin research, some of the highlights of the conference are outlined below.

Following an inspiring opening talk given by **Lewis Pugh**, the **UN Patron of the Ocean**, the first day of the conference begun with talks largely focused on penguin foraging ecology. Keynote speaker **Richard Sherley** (University of Exeter, UK) presented results from a metapopulation tracking study, explaining how fledgling African Penguins are being caught in an ecosystem-wide ecological trap as a result of regime shifts in the Benguela Upwelling Ecosystem. He showed how mismatches between indicators of ocean productivity, usually associated with high quality foraging habitat and forage fish availability, are meaning that juvenile penguins continue to target foraging areas where prey availability is now poor, with potentially disastrous effects for survival. Another of the keynote speakers, **Jerry Kooyman** (Scripps Institution of Oceanography, USA), used a 12-year dataset of population censuses, from the seven Emperor Penguin colonies in the Ross Sea, to emphasise that a single penguin colony may not be a good environmental sentinel. The dataset, obtained through satellite images, showed large annual variations in the population sizes of individual colonies, highlighting that carrying out annual monitoring at each colony is critical to understanding changes in Emperor Penguin populations and the environmental variables that influence colony size.

Conference participants were able to enjoy the sight of African Penguins at Boulders Beach, Cape Town (Jennifer Grigg).

Advances in technology are providing increasingly fine-scale data pertaining to seabird behaviour. **Jono Handley** (Nelson Mandela Metropolitan University, South Africa), winner of the Best Student Talk, demonstrated how a combination of GPS, time-depth recorders and animal-borne cameras can be used to gain dynamic insights into Gentoo Penguin foraging ecology. As well as highlighting the differences in foraging behaviour between three colonies at the Falkland Islands, Jono explained how the footage allowed him to record an instance of kleptoparasitism, marking the first time that the behaviour has been observed in any penguin species. While the use of technology is revealing previously unknown aspects of penguin behaviour, in locations where logistical constraints make it difficult to monitor individuals, researchers are often restricted to collecting data over limited time frames and as a result may miss important events. **Tom Hart** (University of Oxford, UK) showed how, using networks of remote time-lapse cameras, it is possible to monitor seabird colonies throughout the whole year. Using a network of over 100 cameras placed at penguin colonies throughout the Scotia Arc, this system is now providing insights into penguin behaviour, phenology and reproductive success from a range of

colonies exposed to varying levels of threats. The talk also highlighted how citizen science can be harnessed as a tool to analyse large datasets.

With over 55% of penguin species listed as 'Threatened' by the IUCN, a key topic of the congress was penguin conservation and a number of talks focused on penguin-fisheries interactions and the role of fisheries management in penguin conservation. **Alistair McInnes** (University of Cape Town, South Africa) – winner of the RSPB Best Student Conservation Based Talk - gave an insightful presentation comparing African Penguin foraging distributions with acoustic surveys of pelagic fish distribution and abundance. He showed that, while the horizontal distribution of prey had little influence on penguin location, the vertical distribution had an important effect on penguin foraging. Correlations between penguin activity budgets and forage fish abundance strengthened when only considering targeted fish aggregations, highlighting the importance of understanding the complex interactions between penguins and their prey. Similarly, **Janet Coetzee** (Department of Agriculture, Forestry and Fisheries) discussed how changes in forage fish behaviour can complicate the interpretation of results from studies attempting to disentangle effects of commercial fishing on seabirds. Using data collected from hydro-acoustic surveys during the South African Fishing Closures Experiment, she demonstrated how fish shoaling behaviour changes under different fishing conditions and how fishing closures can result in opposing effects on fish behaviour at different localities. During the congress, there were also some conservation success stories. **Popi García Borboroglu** (IUCN SSC Penguin Specialist Group Steering Committee, Global Penguin Society) provided a fascinating insight into the creation of the new Punta Tombo Marine Protected Area, which aims to protect the foraging area of 500,000 Magellanic Penguins. The talk highlighted the importance of considering not only scientific evidence, but political and economic interests when negotiating with policy makers.

As well as providing a platform for researchers to present their research, the conference also provided numerous opportunities for networking and building collaborations. The International Penguin Early Career Scientists (IPECS) workshop, run by **Meagan Dewar** (Deakin University, Australia) and **Alex Thornton** (University of Alaska Fairbanks, USA), provided a forum for students and early-career researchers to network with peers, meet mentors and receive career advice from senior researchers. There was also plenty of opportunity for socialising during trips to the nearby African Penguin colonies. Delegates were able to visit the colonies at Robben Island, Boulders Beach and Stony Point; although at the end of the breeding season, there were still nests around where the host penguin species could be spotted.

The congress, while at times a stark reminder of the decline of populations of many penguin species, highlighted the latest developments in research and provided opportunities for international collaboration between scientists. The next penguin congress will be held in New Zealand in 2019, but for anyone who missed the conference, the abstracts of all oral presentations and posters can be found at http://ipc9.adu.org.za/.

## Is handling stressful for nestlings?

### Assessing the effects of handling on nestlings: a case study of the European Storm Petrel

**Hannah Watson (Lund University)**
Email: hannah.watson@biol.lu.se Twitter: @hydrobates1

European Storm Petrel *Hydrobates pelagicus* nestling *c*. 10 days old (Hannah Watson)

During my PhD, I spent three consecutive seasons (2010-2012) on the island of Mousa, an RSPB reserve located in Shetland and home to the UK's largest colony of **European Storm Petrels** *Hydrobates pelagicus* (hereafter Storm Petrels). One of the primary aims of my research was to understand how human disturbance - associated with tourism - could impact Storm Petrels. While Storm Petrels and related species typically breed in isolated locations, Mousa is easily accessible and receives one or more boat-loads of tourists almost daily throughout the spring and summer. We found that human disturbance does in fact lead to lower breeding success of Storm Petrels (due to reduced nestling survival), but that, under the current management scheme (e.g. boat capacity and frequency, locations and extent of footpaths and information boards), the effects at the population level are very small (Watson *et al*. 2014 – published as Open Access).

Aside from effects on breeding success, myself and my supervisors (Pat Monaghan, University of Glasgow and Mark Bolton, RSPB Centre for Conservation Science) were especially interested if exposure to a stressor, such as human disturbance, could

also affect surviving nestlings, via effects on growth and stress physiology (i.e. the mechanisms that enable the body to cope with stress). Of course, in order to quantify growth patterns and to understand how physiology changes over the course of development of a nestling, we needed to handle young birds repeatedly. While it is well understood that handling birds can have both short- (e.g. increased breathing rate and body temperature) and long-term (e.g. increased energy expenditure) effects on birds, as scientific investigators, we rarely consider how repeated capture and handling could bias the very data that we are trying to collect, whether this be survival, levels of stress hormones, body mass or indeed any other metric. Thus, we recognised that it was important for us to be able to demonstrate that we were not causing sufficient stress to the birds ourselves, which could subsequently obscure or exaggerate any observed effects of tourism on growth and physiology.

Stress hormones – known as glucocorticoids – are one of the main mechanisms by which all vertebrates, including ourselves, deal with stress. Glucocorticoids typically rise following a stressful incident and help the body to cope and respond appropriately to the stressor. For a bird, such a stressful event could be a predation attack or the onset of a storm, and the short-term actions of stress hormones can facilitate survival in such instances. Once the stressor has passed, glucocorticoid levels usually fall back to baseline again. However, if an individual is exposed to a repeated or persistent stressor, glucocorticoid levels may remain permanently elevated, which can have damaging consequences. For example, long-term elevation of stress hormones can impede growth and reduce immune function in young birds. Furthermore, high glucocorticoid levels have been shown to cause accelerated shortening of telomeres (the protective caps located at the ends of our chromosomes), which has, in turn, been associated with the onset of ageing and premature death.

By exposing nestling Storm Petrels to different levels of handling over the course of the rearing period (ranging from 1-7 handling episodes), we were able to demonstrate that handling had no effect on Storm Petrel chicks. We observed no changes in either glucocorticoid levels, the length of telomeres, or body condition, as a result of handling. Thus it seems that, within the scope of a typical field study, Storm Petrel nestlings are able to avoid the negative effects associated with long-term elevation of stress hormone levels. This could represent an evolutionary adaptation, since eliciting a response to a stressor may be of little benefit to a chick that is stranded in its nesting cavity and no means of defending itself.

The island of Mousa and its Iron Age broch. Mousa supports the largest colony of European Storm Petrels in the UK, with more than 11,700 pairs estimated from the last whole-island census in 2008 (Hannah Watson).

In contrast to our results, a study undertaken by colleagues at the University of Glasgow showed that handling of nestling **European Shags** *Phalacrocorax aristotelis* led to both elevated levels of stress hormones and increased erosion of telomeres (Herborn *et al*. 2015). While Shags, like Storm Petrels, are colonial-nesting seabirds, they rear up to five chicks in nests that are situated out in the open, as opposed to Storm Petrels which rear a single chick tucked out of sight in a cavity. Furthermore, adult Shags are present during the day, when investigators visit nests, whereas Storm Petrel adults are far out to sea foraging by day, only returning to the nest at night, under the cover of darkness. Therefore, the presence of an investigator within a Shag colony will likely cause widespread disturbance among both adults and young, and the disturbance will probably cause some adults to leave nests and young temporarily. In contrast, within a Storm Petrel colony, disturbance is isolated to the visited nest, where only the single chick is present, and should not generate disturbance elsewhere within the colony. We thus propose that the lack

of response by Storm Petrel nestlings may in part be a consequence of their breeding ecology, which has not been previously considered by other authors.

Adapted from a blog post published on the BOU blog. The full paper is published as Open Access and can be found here. The full citation is: Watson H, Bolton M, Heidinger BJ, Boner W & Monaghan P. 2016. Assessing the effects of repeated handling on the physiology and condition of semi-precocial nestlings. *Ibis* 158: 834-843.

**References**

Herborn KA, Heidinger BJ, Boner W, Noguera JC, Adam A, Daunt F & Monaghan, P. 2014. Stress exposure in early post-natal life reduces telomere length: an experimental demonstration in a long-lived seabird. *Proceedings of The Royal Society B* 281: 20133151.

Watson H, Bolton M & Monaghan P. 2014. Out of sight but not out of harm's way: Human disturbance reduces reproductive success of a cavity-nesting seabird. *Biological Conservation* 174: 127-133.

## Call for grant applications

### Seabird Group biannual grants – deadline 31 October

The Seabird Group awards small grants (up to £500) to support seabird research, monitoring and conservation projects in two funding rounds per year. Our next call for grants closes on **31 October** and we invite applications from you. Recent successful proposals include a study of mating strategies in Monteiro's Storm Petrels, disentangling the taxonomy of the Common/Mew Gull complex, a seabird survey on Sule Skerry and determining foraging areas of Cormorants breeding on the Falkland Islands. You can find more information here, including application guidelines and forms. Although priority will be given to projects that do not have any funding from elsewhere, applications from any individual or group are welcomed, including students. Applications require a description of the project (maximum of 800 words) and budget. Successful applicants are recommended to submit a manuscript for consideration for publication in our journal, *Seabird*, or contribute an article for the newsletter. Completed applications should be sent to the secretary, Holly Kirk, holly.kirk@merton.ox.ac.uk.

### Grants for UK national census *Seabirds Count*

As we have previously reported, in addition to our regular biannual awards, the Seabird Group has set aside legacy funding specifically to support and facilitate the involvement of members in survey activities that will contribute towards the next UK national seabird census, *Seabirds Count*. While there has been some uncertainty about the availability of resources and timing of the census, it has now been confirmed that the census period will span 2015-2019 and all survey activities undertaken during this time will contribute. The Census Steering Group are currently undertaking a gap analysis to identify key areas that are unlikely to be surveyed as part of normal annual monitoring work and should be a priority for funding. Once the report is available, we will be in a better position to advise on the sites and/or species that the Seabird Group identifies are priorities for funding. However, we do still welcome you to come forward to discuss ideas with us, via Stuart Murray, who sits on the Seabird Group committee and on the Census Steering Group. The Seabird Group sees the census as a great opportunity for experienced surveyors to pass their skills on to our less-experienced members and train the next generation of seabird surveyors. We currently have a large cohort of early-career members, many of whom would be keen to contribute to the census, but may not know how to get involved. We encourage those who are keen to participate, but maybe don't have the tools or capacity to organise a survey themselves, to get in touch with our Early Career rep, Helen Wade. We will do our best to try to find suitable survey activities in which our members can get involved.

## Ramsey: A seabird island restored

**Greg Morgan, RSPB Ramsey Island**

Ramsey is owned and managed by the RSPB. Lying just off the north Pembrokeshire coast, it has a chequered history with burrowing seabirds. Brown Rats arrived via shipwrecks in the 1800's blighting what historical records depict as a once-thriving seabird community. **Atlantic Puffins** *Fratercula arctica* and **European Storm Petrels** *Hydrobates pelagicus* became extinct while **Manx Shearwaters** *Puffinus puffinus* were reduced to a few 'hangers-on' supplemented by the neighbouring mega-colonies on Skomer and Skokholm

Wildlife Management International, together with the RSPB, carried out a successful rat eradication project on the island in 2000. At the time, Ramsey was the largest UK island to be cleared of invasive predators. The results have been impressive. From a low of 850 pairs the year before eradication, Manx Shearwaters have increased at each five-yearly census reaching 4,796 apparently occupied burrows (AOB) in 2016.

Volunteers digging in Manx Shearwater nestboxes (L) and one of the first birds to successfully breed in the new study burrows (R). (Greg Morgan)

During this period, RSPB and the OxNav group began tracking birds using geolocators, comparing migration and phenology between Ramsey's young colony and long-established breeding sites such as Skomer. In an attempt to establish a population we could more easily work on and to allow us to carry out productivity analyses, we borrowed a Hutton's Shearwater idea from a working holiday in New Zealand and installed nestboxes in one of our densest sub-colonies. Birds began investigating the boxes in year one and, the following year, new pairs visited the boxes together during the day. Two of these pairs laid eggs for the first time in 2016 (year three) and to our surprise both went on to successfully fledge chicks this year. Not bad for first time breeders! As far as we know, this is the first time Manx Shearwaters have used nestboxes – happy to be told otherwise though!

Stormie Team 2016 (Greg Morgan)

We dug in further boxes this year, bringing the total to just over 50. Even though there is no shortage of natural sites, these too were investigated immediately and another two new pairs established this year including a bird ringed as a fledgling here in 2012, within 100m of the burrow where it was born (we ring around 300 fledglings a year in this sub-plot). Given the success of the boxes, our aim is to increase the number to 100 this coming winter and hopefully watch our study population grow year on year and allow us to carry out further tracking studies on a population recently freed from the pressure of mammalian predators.

There is no historic evidence of European Storm Petrels breeding on Ramsey but, given detection difficulties, they could easily have gone unnoticed. Regular surveys by RSPB staff since the early 90's drew a blank until, in 2008, I was lucky enough to discover a small population of 4 AOB in an area that had last been surveyed in 2005. This population has slowly expanded year on year, reaching 12 AOB by 2016. Natural habitat on Ramsey is limited so we have tried various nestbox designs in recent years, thus far without success. However, given the relatively small local population (in comparison to Manx Shearwaters), it is perhaps not surprising the pace might be a little slower in this respect. A sound system to attract Shearwaters to the boxes was not necessary given the near nightly natural din during new moon phases. However, we have fitted such a system at the Storm Petrel colony with a larger amplifier to call birds into the area, plus a series of linked mini speakers playing at natural volume in and around the boxes. Infra-red cameras have shown non-breeding birds coming in to investigate, but for now the waiting game goes on. We had to shut the speaker system off mid-way through 2016 when the camera revealed one of our breeding short-eared owls taking advantage of the set up and using it as a form of 'stormie buffet'!.

There is historic evidence of Atlantic Puffins breeding on Ramsey. Although unquantified, visiting naturalists in the 1800's talk of birds breeding at several locations and, as the rats took a foothold, of the population range and size becoming gradually more restricted until, by the 1930's, there were possibly a few pairs still clinging on to the western cliffs. We are attempting to lure birds back with a decoy and sound system. Neither attempt has been successful thus far, but we do see sizeable (up to 20) groups of Puffins on the water close to Ramsey each year, and the sound system has resulted in small numbers making landfall on low tide rocks. Full reintroduction projects have been mooted but, given their expense and labour requirements, it has been decided to continue with the 'carrot and stick' method for now.

Decoy puffins (Greg Morgan)

*RSPB Ramsey is open to the public daily from April 1st-October 31st weather permitting. Boats leave St Justinians (2 miles west of St Davids, Pembrokeshire) at 10am and 12pm – contact Thousand Islands Expeditions for boat booking enquiries (01437 721721).*

**Ramsey Seabird Populations (2016 unless shown)**

Fulmar (*Fulmaris glacialis*) – 277 AOS
Manx Shearwater (*Puffinus puffinus*) – 4,796 AOB
Herring Gull (*Larus argentatus*) – 221 AON (2013)
Common Guillemot (*Uria aalge*) – 4,403 individuals (2015)
Great Black-backed Gull (*Larus marinus*) – 25 AON (2013)
Black-legged Kittiwake (*Rissa tridactyla*) – 102 AON
European Shag (*Phalacrocorax aristotelis*) – 15 AON (2012)
Lesser Black-backed Gull (*Larus fuscus*) – 170 AON (2013)
Razorbill (*Alca torda*) – 1,222 individuals (2015)
European Storm Petrel (*Hydrobates pelagicus*) – 149 AOB (Bishops and Clerks, 2010) + 12 AOB (Ramsey 2016)

## UK breeding season 2016 reports

It has become custom for the October newsletter to publish summaries of the most recent breeding season from the major seabird colonies in the UK. For further information about specific sites, see the relevant links.

### Skokholm

**Richard Brown and Giselle Eagle (Wardens, Skokholm)**

Construction of the "Petrel Station" on Skokholm will hopefully facilitate the study of nesting Strom Petrels and enable the refinement of the correction factor to improve population estimates.

Skokholm's **Manx Shearwater** population remained stable with the 8000 m$^2$ of burrows surveyed annually containing 588 responding birds, the most recorded since 2008. Of 155 study burrows monitored to assess productivity, 68% of pairs fledged a chick (the same as in 2015). We again counted Shearwater corpses on the Island, with fewer found during the early part of the season than last year (when the Rabbit population was lower). The vast majority of the corpses were the work of **Great Black-backed Gulls**, a species which increased from 83 to 93 pairs this year. A 1000 m$^2$ plot was also surveyed for **Storm Petrels**; however, no birds were found to be using earthen burrows. The whole of the Skokholm population is thus seemingly confined to areas of rock fall, scree and stone wall, areas which were all surveyed this year thanks to funding from Natural Resources Wales. The details of this survey will be reported on separately; however, the final estimate of 1762 pairs suggests that Skokholm remains the fourth largest European Storm Petrel colony in the UK.

The 2016 Storm Petrel survey relied in part on the use of a correction factor applied to areas visited only once to predict the number of pairs present. Whereas the correction factor used during the whole-Island Manx Shearwater survey is easily deduced by visits to accessible nest sites (using hatches into the nest chambers of study pairs), this was not an option for Storm Petrels that are for the most part inaccessible on Skokholm (mainly due to complex crevice entrances in fragile habitat). The correction factor was thus based on ten visits to areas where birds could be heard but not seen. Having a good number of accessible Storm Petrel crevices would improve the correction factor as the breeding status of birds responding to playback could be assessed. With this in mind, we produced a Storm Petrel study wall in 2016 (the "Petrel Station"), a short section of stone-faced wall containing 119 nest boxes. Time will tell whether this will help improve our correction factor.

A record 194 pairs of **Fulmar** were apparently nesting around the cliffs and 57% of pairs fledged a chick (the highest recorded in four years of study). **Common Guillemot** numbers were also up, with 3949 adults on ledges - the highest number recorded on Skokholm. There was an average of 2242 **Razorbills**, the third highest count on record and all of which have come in the last four years. There were contrasting fortunes in terms of Razorbill productivity: only 3% of pairs reared a chick to jumping size at the cliff plot (the lowest productivity recorded at any site in the last four years); however, in the boulders, 74% of pairs produced a jumper (the highest site productivity recorded in the last four years). Circumstantial evidence suggested that an unusually

protracted egg-laying period left larger than normal gaps in the cliff colony, which allowed easier access for predatory Herring Gulls. Much like the boulder-nesting Razorbills, **Puffins** seemed to have a good breeding season with 64% of pairs rearing a chick to fledging size, the highest recorded in four years (previously 49-55%). The whole-Island Puffin count came in at 6692 rafting individuals - the highest count for over 40 years, but only fractionally up on the 6665 recorded last year.

2016 also saw the completion of a three-year project to digitise all of the Skokholm bird log data. We now have a complete digital record detailing all passage seabirds logged between 1927 and 2016 to complement the breeding bird data.

Keep up-to-date with news from Skokholm via the blog and Twitter (@SkokholmIsland).

## Fair Isle

**David Parnaby (FIBO warden)**

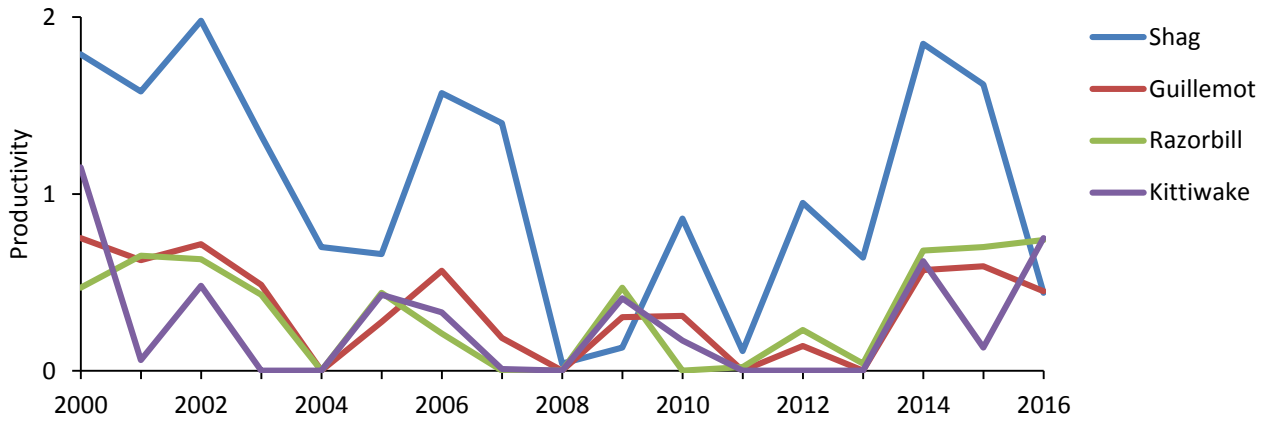
After a spell in the late 2000s and early 2010s that produced a series of very poor breeding seasons and declines in numbers of several species, the last three years have revealed some glimmers of hope that, perhaps, the worst is past. None of the regularly breeding seabirds failed to fledge chicks, whilst numbers of most species gave positive signs. Although things are still a long way off the heydays of the early 1990s, visiting the colonies is now something that the wardening team can relish again, after the sad scenes five years ago of starving chicks and abandoned nests.

Breeding numbers of most species remained steady, or increased slightly, with **Razorbills** recording the highest numbers in the population plot since 2006, whilst the first whole-island **Fulmar** count since 2011 saw an 8.2% increase to 32,061 apparently occupied sites - the highest count since 1996. The stand-out species, in terms of population increase, was **Great Skua** (or **Bonxie**), which recorded a 174.5% increase since 2015 to 516 territories (almost all with active nests), comfortably the highest ever population on Fair Isle. The only species whose numbers fell in the population plots were Shag, Guillemot, Black Guillemot and Common Tern, although all were generally small declines.

Breeding was generally good for most species, although **Fulmar** (0.5 chicks fledged per AOS), **Shag** (0.44/AON), **Guillemot** (0.45/AIA) and **Puffin** (0.64/egg) all showed small or moderate declines in productivity since 2015. **Bonxie** productivity declined to 0.66 chicks fledged per AOT, but this still represented the third highest productivity in the last 15 years for this species, as did the 0.32 chicks per AOT fledged by **Arctic Skuas**. **Arctic Terns** have an ephemeral presence on the island, but the 118 pairs that nested this year fledged 0.23 chicks per AON, which again represented the third highest productivity in the last 15 years.

Razorbills had their best year since 1998, with 0.74 chicks fledged per egg laid, continuing their recent good run. **Kittiwakes** also did well: the 0.75 chicks fledged per AOT represented the best breeding season for this species since 2000. Sadly, many of the monitored colonies are now empty, whilst others have only a small number of pairs which usually fail to fledge chicks, but the Inner Soond o' da Holms and Dog Geo plot produced 40 fledged chicks from 44 nests and the sights and sounds of this thriving colony was one of the highlights of the summer for the wardening team.

Keep up-to-date with news from FIBO via the warden's blog and Twitter (@FI_Obs). You can also find more information on the Bird Observatory here.




Breeding productivity of selected species on Fair Isle 2000-2016.

## Shetland (excluding Fair Isle)

**Martin Heubeck & Mick Mellor (SOTEAG), Rachel Cartwright, Andy Denton & Craig Nisbet (Scottish Natural Heritage), Sheila Gear (Foula Ranger Service), Nathalie Pion (RSPB), Phil Harris & Roger Riddington (Shetland Ringing Group)**

The 2016 seabird season was mixed, but any adverse weather seemed to have little effect on breeding success. There is little systematic recording of chick diet, but it would appear that a large year-class of Saithe was of benefit to some species (Guillemots, Razorbills and perhaps Shags), but the smaller surface-feeders (Kittiwakes and Arctic Terns, the 'usual suspects') struggled to provision small chicks during the first half of July.

**Fulmar** success averaged 0.48 at 7 colonies (range 0.31-0.56), which was markedly higher than in 2015 (0.34); although at 4 colonies, success in 2016 was calculated from the mean June count of AOS (to release time for census counts) which produces a lower figure than the marked photo method. As ever, **Gannets** had a successful season: 0.72 at Noss and 0.73 at Hermaness. **Shags** also had a reasonably successful season, by Shetland standards, with productivity of 1.13 at Sumburgh Head (n = 100 AON), 1.50 at Mousa (22 AON), 1.72 at Noss (16 AON), 1.41 at Burravoe (22 AON), but only 0.73 at Foula (26 AON); note that sample sizes are getting lower year by year.

There were 27 **Arctic Skua** AOT at Foula; although only 17 pairs were known to have laid and most of these failed during incubation or around hatching, with just 4 chicks surviving to fledge (0.15/AOT). Monitored numbers elsewhere are now extremely low: e.g. 2 pairs at Mousa didn't breed; 2 pairs at Noss fledged 1; 2 pairs at Hermaness fledged 2. At Foula, cannibalism by **Great Skuas** was the main reason for their low breeding success, with 14 young fledging from 53 monitored AOT (0.26). Success was equally low at Hermaness (0.22 from 59 AOT), but higher at Noss (0.69 from 84 AOT), despite some predation of chicks, which may have continued after unfledged young were counted. In apparent marked contrast, at Fitful Head (south Mainland), 113 pulli were ringed in 2 visits, mostly as broods of 2 large chicks and it was thought that many more would have been found had more manpower been available and conditions less foggy. Productivity was not monitored at Mousa, but the 56 AOT on the island was well up on 2015 (35), and the previous highest count of 41 in 2009.

**Kittiwake** productivity ranged from 0.12 at West Burra (n = 33 AON) to 0.99 at Burravoe (90 AON), with a mean of 0.53 at the 8 colonies monitored. Generally, percentages laying and hatching were relatively high but reductions in, or complete losses of broods during the first half of July suggested problems with food availability at some colonies (along with some predation) dragged the success figures downwards. Only about 2,200 pairs of Kittiwakes now breed north of Fair Isle and the number of AON visible from land and available for monitoring is getting very low at some colonies (e.g. 26 AON this year at Noss, out of a whole-colony count of 148 AON). Things initially looked promising for **Arctic Terns**, with many decent-sized colonies recorded during the second half of June. Of those monitored or visited for chick ringing, it appeared that reasonable numbers of chicks hatched in late June and early July but their parents then had difficulty sustaining them much beyond a week old and few survived to fledging, e.g. 6 from c.100 pairs at Foula; 2 from 56 pairs at Mousa; 5 from 72 pairs at Noss, none from 18 pairs at Hermaness; probably no more than 0.40 per pair at most at various small colonies in north Mainland and Yell. At Grutness (south Mainland), a total of 230 chicks were ringed on 27$^{th}$ June and 5$^{th}$ July but on 14$^{th}$ July barely-fledged young numbered in the "low tens", with more than this lying dead in the colony; casual observations of adults carrying gadids (probably Saithe) suggested that a lack of appropriate-sized fish for small chicks may have been the main problem, rather than a lack of fish *per se*.

In the single **Guillemot** breeding success plot at Sumburgh Head, strong colony attendance and frequent change-overs during incubation contributed to high hatching success (74% of first eggs; n = 132). Most chick feeds (74%, n = 790) were of small to medium Saithe that were clearly being caught close to the colony and breeding success at 0.71 per egg-laying pair was the highest since 1996, and well above the long-term average (1989-2015: 0.54); strong colony defence against predatory gulls also aided chick survival. Despite this, the mean weight of 29 chicks of near-fledging age (wing length 60 mm or over) was 215 g, 23% lighter than during the 1990s (mean 280 g). There were more losses during early incubation at Burravoe where Guillemot chicks were known to have hatched at 63% of 104 qualifying sites, 94% of which survived to fledging age giving success of 0.60 per laying pair, above the 2012-15 mean of 0.50. Statistics were similar for **Razorbill** success at Sumburgh Head, where chicks were recorded at 56 (70%) of 80 qualifying sites, 54 of which (96%) reached fledging age, giving success of 0.68.

## Skomer

**Edward Stubbings, Birgitta Büche (The Wildlife Trust of South and West Wales) & Matt J. Wood (University of Gloucestershire).**

Skomer's seabirds continue to paint a mixed picture, with some species visibly increasing and others showing signs of decline. However, when looked at in context with other colonies around the UK (*The state of the UK's birds 2015; JNCC (2015)*), Skomer's seabirds are generally doing ok. Moreover, Skomer is home to four seabirds on the BoCC4 Red list (Shag, Puffin, Kittiwake and Herring Gull) and seven on the Amber list (Fulmar, Manx Shearwater, Storm Petrel, Razorbill, Guillemot, Lesser Black-backed Gull and Great Black-backed Gull). Species accounts cover population counts, survival studies, feeding studies and productivity.

Skomer's **Fulmar** numbers have increased again and are nearly back up to the historical highs of the 90s and early 2000s. 675 AOS were counted in 2016. Productivity was also up from 0.35 to 0.43 chicks per AOS.

Within the **Manx Shearwater** census plots the number of responses was up slightly on 2015 as were the total number of burrows. Breeding success in 2016 was 0.63 per pair in the Isthmus study plot, slightly above the 20 year average, while adult survival over the winter 2014-15 dropped sharply to just 71% compared with the average of the previous ten years of 87% – perhaps a sign of the recent marked El Nino event.

**Herring Gull** numbers are at an all-time low at 321 AON, a 43% decline on the previous year, whilst productivity was also 25% down on the previous year at 0.52. Survival of breeding adults remains low at 80%. Maintaining a viable population for adult survival studies in the face of falling numbers is challenging, so an additional site may be required in 2017.

The 2016 population estimate of **Lesser Black-Backed Gull** is 6,936 breeding pairs, which is 9.1% lower than 2015. The population remains at a historically low level, a 66% decrease since the Skomer population was at its peak in 1993, returning to levels last seen in the mid-1960s. The estimated number of Lesser Black-Backed Gull fledglings in 2016 was 2,254, less than half the number estimated in 2015. Productivity was thus back at the low levels seen in the last 20 years on Skomer, at just 0.36 chicks per breeding pair. Adult survival, at 81%, dropped nearly 9% on the previous ten-year average. **Great Black-backed Gull** numbers were down slightly on the previous year (down by 13% at 108 AONs) as was productivity at 1.44 chicks per AON (12% down on 2015).

**Kittiwakes** have undergone several years of slow decline on Skomer but the last two (2014 and 2015) had shown signs of recovery. This year's count of 1,477 nests is once again a drop in numbers (4.5% less than the previous year) and is a cause for concern. Productivity was 0.65 chicks per AON, which is 15% lower than 2015. Survival was about average since 1978 at 80%, seemingly on the downward slope of decadal oscillations in adult survival on Skomer that remain unexplained.

**Common Guillemot**s were not surveyed (whole island) in 2016 as a decision had been made the previous winter to rotate counts of Guillemots and Razorbills and Fulmars, meaning that in 2017 Guillemots will be counted but Razorbills and Fulmars will not. Study plot counts of Guillemots are still done each year and are thought to be representative of the whole island population. The 2016 totals (7,097.8 IND) are 3.68% higher than last year's plot counts. Productivity of Guillemots within plots monitored by WTSWW was 0.63 and was 0.89 at the study site at the Amos (Sheffield University).

During whole island counts of **Razorbills** a very clear pattern of increasing abundance soon became apparent. The first count, at the start of June, was down by over 1,500 individuals. By the second count however, numbers had increased and surpassed the peak count from 2015, leaving us with an average of 7,250 IND (3.19% less than 2015). It is possible that the late return of adults to nesting sites was caused by severe weather last winter. Why this only affected Razorbills and why productivity seemed unaffected (0.41 chicks per AOS) remains to be seen. Adult survival of 95% the previous winter (2014-15) shows this species recovering from a sharp drop in survival seen after the seabird wreck of 2013-14.

22,539 IND **Atlantic Puffins** were counted in spring 2016 which is an increase on the previous year and the highest total since current records began in 1988. The Puffin has recently been classified as Endangered in Europe, and Near Threatened in the EU-27 (see the European Red List of Birds). Skomer's increasing numbers are therefore at odds with national and wider trends and deserve scrutiny to identify the reasons for this. Survival of breeding adults in 2014-15 was 0.905, and appears to be returning to levels seen before the 2013-14 wreck. Puffin feeding rates were similar to 2015, with productivity bouncing back to 0.78 chicks fledged per occupied burrow in 2016, 12% higher than that of 2015.

More information will be available once the full Skomer Seabird Report 2016 is published at http://www.welshwildlife.org/news/wildlife-trust-reports/. Keep up-to-date with news from Skomer via the blog and Twitter (@skomer_island)

*This report includes data collected by Elisa Miquel Riera (The Wildlife Trust of South and West Wales) and Ros M. Green (University of Gloucestershire), both supported by funding contributions from JNCC's Seabird Monitoring Programme. Loraine Chivers and Tim R. Birkhead (Sheffield University) carried out Guillemot studies which are also discussed.*

## Isle of May

**Mark Newell, Mike Harris, Sarah Burthe, Carrie Gunn, Sarah Wanless and Francis Daunt (Centre for Ecology & Hydrology)**

Many Kittiwakes took a rest-year and didn't breed in 2016 on the Isle of May (Mark Newell).

The 2016 breeding season on the Isle of May NNR proved to be a mixed year, following the general success of 2014 and 2015. Breeding in 2016 commenced early for European Shags, but was late for Black-legged Kittiwakes and Atlantic Puffins. The number of birds nesting in the study plots showed a mixed picture with Northern Fulmar and Common Guillemot up, Razorbill similar and Black-legged Kittiwake and European Shag down from last year. The drop in Black-legged Kittiwakes seemed to be a result of a non-breeding year rather than an actual population drop.

**Northern Fulmars** had an above-average breeding season (0.43 chicks per breeding pair) for the fourth year in succession. **European Shags** had their most productive season on record (2.1 chicks per breeding pair), although the number of pairs in the plots was the second lowest on record. After two highly successful seasons, **Black-legged Kittiwakes** had another above-average year (0.78). There were mixed fortunes for the auks with **Atlantic Puffin** having an above-average breeding season (0.76), **Common Guillemot** (0.66) was below average, while **Razorbill** (0.45) had the worst season on record. Return rates were above the long-term average in four study species with **European Shag** at 89%, **Black-legged Kittiwake** 88%, **Common Guillemot** 94% and **Razorbill** 88%. The exception was **Atlantic Puffin** (72%), which was considerably below the long-term average with only four poorer years.

Sandeels (*Ammodytes* spp.) remained the main food of young Razorbill, Puffins, Shags and Kittiwakes. The diet of Guillemots was dominated by clupeids. There were no significant weather events in 2016 with mainly light winds and precipitation at normal levels.

For more information on the Isle of May, visit the website http://www.ceh.ac.uk/sci_programmes/IsleofMayLong-TermStudy or follow us on Twitter @CEHseabirds. E-mail Mark Newell: manew@ceh.ac.uk.

## Canna

**Bob Swann (Canna ringing team)**

Summer 2016 was generally another very good year for Canna seabirds. Although counts show that the breeding populations of many seabird species on Canna remain at low levels, compared with the peak in the 1980s, most species are no longer declining in number and some are even showing significant increases. The whole-island count of **Black-legged Kittiwake**, for instance, revealed 1,166 AON, not far below the peak of 1,340 AON in 2004 (see Figure 1A).

Gull numbers crashed on Canna between 2000 and 2005. For **Great Black-Backed Gull**, this meant a drop from a peak of 93 AOT in 1997 (Figure 1B) to just under 20 AOT. **Herring Gull** and **Lesser Black-backed Gulls** also show a similar pattern. Changes in the amount of discards from the local fishery are thought to be responsible for these declines. The current populations, which now appear to have stabilised, are probably more sustainable with regard to available food supply. These changes have not affected the island's **Great Skua** population. They increased to 13 territorial pairs in 2016, the highest total recorded since the island was colonised in 2001.

**Puffins** have always been very difficult to count on Canna as they tend to nest on offshore stacks, inaccessible grassy slopes or amongst boulders on the cliffs. There has been evidence of an increase in numbers since the rat eradication programme in 2004/05, but this has been difficult to quantify. Counts of birds offshore in 2016, however, revealed a total of 2,050. Prior to the rat eradication, the highest count was 1,190 in 1995.

We have previously reported on the high return rates of the 2009-2011 cohorts of **Guillemots** to Canna. This continued in 2016 and, in the case of the 2011 cohort, was completely unprecedented, with almost 3 times as many as any previous cohort having already recruited into the colony by age five. Counts in our study colonies are now the highest we have recorded since the crash in 2005, though numbers remain well below peak levels.

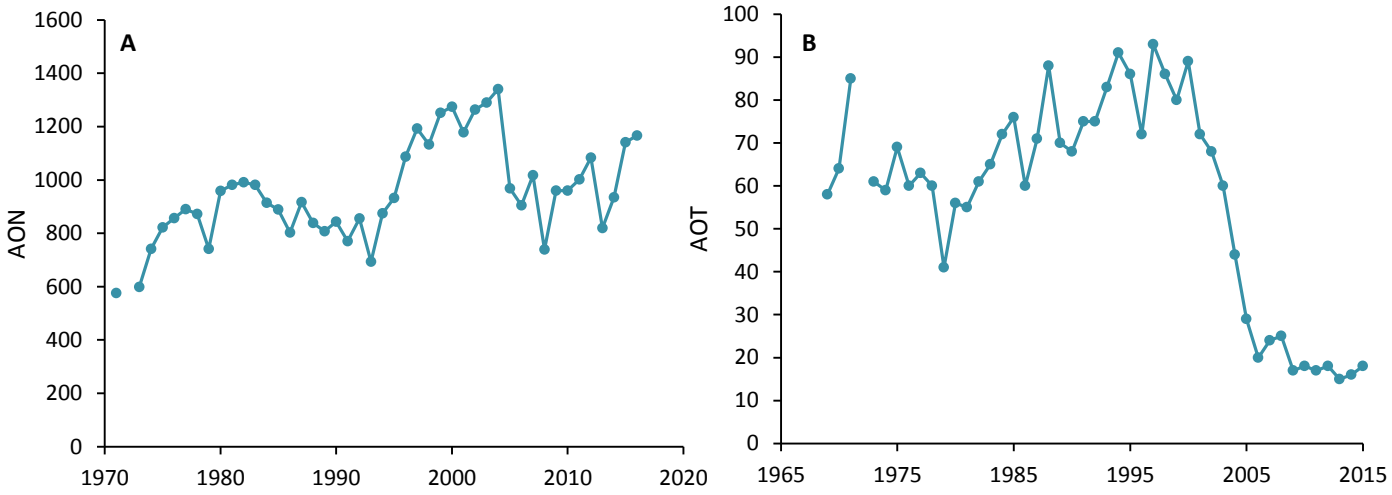



**Figure 1.** Numbers of **(A)** apparently occupied nests of Black-legged Kittiwakes, 1971-2016, and **(B)** apparently occupied territories of Great Black-backed Gulls, 1969-2016, on Canna.

For the five species that we monitor breeding productivity, three - **European Shag**, **Great Black-backed Gull** and **Black-legged Kittiwake** - all had productivity figures above the long-term average, whilst the other two species - **Northern Fulmar** and **Herring Gull** had figures close to average. **Common Guillemots** also appeared to have a good breeding season in 2016. Of 41 fish collected from adults as they arrived in the colony, 59% were sprats and 34% sandeels. The abundance of highly nutritious fish resulted in both adults and chicks, close to fledging, having weights significantly higher than recorded in 2015.

## Kittiwakes on Colonsay, Inner Hebrides, 2016

**David Jardine, Stuart Murray & Ruth Jeavons**

John Harvie-Brown, the famous Victorian naturalist, visited Colonsay in May 1888, when he noted in his diary there was a large Kittiwake colony '*frequenting the SW end of Colonsay cliffs in rather a picturesque nose of rock, and also along a low range of cliff below*'. This was the earliest documented information on the largest concentration of Kittiwakes in Argyll (Mitchell *et al*. 2004, Jardine *et al*. 2002).

Stuart Murray counting Kittiwakes, cliff section PP15, Colonsay.

Despite its early recognition as an important regional seabird colony, a full count was not undertaken until 1969, when Dr Jim Fowler recorded 2,136 apparently-occupied nests (AON) on the North West cliffs on 24 May. In 1985, John and Pamela Clarke made a complete cliff count for the Seabird Colony Register, recording 6,212 AON. A repeat of this count made in 1986, following a major seabird wreck in the Firth of Lorne during the late summer of 1985, found 5,173 AON. David Jardine completed a count for Seabird 2000 finding 6,611 AON, the highest count to date. More recently, a rapid boat-based count was organised in 2014 by Scottish Natural Heritage, but this is not strictly comparable with the land counts.

**Table 1**. Land based counts of Kittiwake AON on Colonsay in 2000 and 2016.

| Section | 4-13 June 2000 | 22-25 May 2016 | Change (%) |
|---|---|---|---|
| **UR1** | 456 | 21 | -95% |
| **UR2** | 298 | 0 | -100% |
| **PP1** | 0 | 0 | - |
| **PP2** | 0 | 0 | - |
| **PP3** | 0 | 0 | - |
| **PP4** | 4 | 0 | -100% |
| **PP5** | 544 | 430 | -21% |
| **PP6** | 1510 | 907 | -40% |
| **PP7** | 330 | 129 | -61% |
| **PP8** | 0 | 0 | - |
| **PP9** | 349 | 29* | n/a |
| **PP10** | 773 | 454 | -41% |
| **PP11** | 836 | 275 | -67% |
| **PP12** | 59 | 366 | +617% |
| **PP13** | 206 | 71 | -66% |
| **PP14** | 103 | 0 | -100% |
| **PP15** | 1143 | 848 | -26% |
| **PP16** | 0 | 0 | . |
| **TOTAL** | 6611 | 3530 | -45.6% |

*Incomplete count

Their total of 4,668 AON suggested a 28% decline since 2000 and indicated that a detailed land-based count of this Special Protected Area was long overdue.

We visited Colonsay between 22 and 25 May 2016 and counted Kittiwake AON on the cliff sections from land. These counts are a combination of cliff-top counts and others made from the wave-cut platform below the cliffs at low tide. All of the 18 of the Seabird 2000 sections were counted (Table 1), except part of Section PP9 (which in total held 5.3% of Colonsay's Kittiwakes in 2000). Most birds had commenced incubation, but a few pairs were in the late stages of nest construction. The count unit was a well-built nest capable of holding eggs or young. Trace nests with or without attending adults were not counted. Totals between counters were found to be consistent, generally within 5%; subsequently, the mean of two or three counts were used for the final totals for each section (Table 1).

Seabirds are found around all the coasts of Colonsay, however, Kittiwakes have only been found nesting on the cliffs between Port Mor (NR 360947) and Kiloran Bay (NR 400981), with concentrations around Uragaig and between Pigs Paradise (Aoineadh nam Muc) and Port Mor.

The distribution of nesting Kittiwakes has changed only slightly since Seabird 2000, with the main difference being there are no nests now present in sections three sections (UR1, PP4 and PP14) and the number of AON has declined in all sections except one (PP12). Thus, the overall population has declined from a peak of 6,611 AON to 3,530 AON at present, amounting to a 46% decline since 2000. If the uncounted section PP9 still holds nests, then the actual total will be slightly higher. It held 349 AON in 2000, but at a similar rate of loss as elsewhere, then half as many nests are likely to be present, bringing the actual island total up to 3,700 AON. This most recent count confirms that the Kittiwake population on Colonsay has seriously declined and in all probability is continuing to do so.

Ruth Jeavons and David Jardine counting Kittiwake nests on Pigs Paradise cliff, section PP6, Colonsay 22 May 2016.

**References**


Jardine DC, How J, Clarke J & Clarke PM. 2002. Seabirds on Colonsay and Oronsay, Inner Hebrides. Scottish Birds 23:1-9.

Mitchell PI, Newton SF, Ratcliffe N & Dunn TE. 2004. Seabird Populations of Britain and Ireland. T & A.D. Poyser.


## News

### Hookpods: the future of seabird friendly fisheries?

Back in 2005, Fishtek joined forces with seabird experts to begin development of a bait-setting method for long-line fishing, which would reduce seabird by-catch. In the intervening years, the design of this device has been refined, with input from fishermen themselves to ensure functionality. In 2013, trials of a device called the "**Hookpod**" began in Brazil.

Pelagic seabirds are attracted to fishing vessels by the promise of food (the main source being discards). When long-lines are being set, seabirds such as albatross and large petrel species take the exposed bait from the surface, or even dive after it. Birds stay caught on or swallow the fishhooks and often drown. There are currently a few different methods for reducing this risk, including setting lines in the dark and trying to scare birds away. Hookpods essentially cover the hook until the bait reaches a certain depth (between 10-100m), at which point the pod opens and the shorter hook-bait-line section drops free. This prevents birds from becoming caught when surface diving for the bait.

With successful trials taking place since 2015 in Japan, New Zealand and Australia, the Agreement on the Conservation of Albatrosses and Petrels (ACAP) has recommended the Hookpod as a best practice mitigation measure for longline fisheries. More information about this device can be found here: http://www.hookpod.com/.

## Cepphus Working Group

As a result of discussions at the 13th International Seabird Group Conference in Scotland last month, a Cepphus Working Group has been formed to facilitate exchange of information and discussion relating to this low-profile and frequently ignored genus that includes Black, Pigeon and Spectacled Guillemots. The group is a private Google Group and anyone wanting to join should contact Elizabeth Masden (lizmasden@gmail.com) or George Divoky (divoky@cooperisland.org). Or, you can search for the group on Google Groups and apply for membership.

## Brian Douglas Bell, 1930 - 2016

It is with great sadness that we have heard of the death of Brian Bell on Saturday 1 October 2016. He was at home in New Zealand, as he wished, surrounded by family and with views to his garden.

Brian helped pioneer predator control techniques on islands and Wildlife Management International Limited, the firm that he founded, has reclaimed breeding habitat for seabirds and other creatures all over the world making successful breeding possible again. In the UK, his daughter Biz led the successful eradication of rats on Lundy and hopefully those on the Shiants.

Contributed by Mike Harris. An obituary by Lou Sanson (Director-General for New Zealand's Department of Conservation) can be found here.

# Paper review

## Gaglio D, Cook TR, Connan M, Ryan PG & Sherley RB. 2016. Dietary studies in birds: testing a non-invasive method using digital photography in seabirds. *Methods in Ecology & Evolution* doi: 10.1111/2041-210X.12643.

As top predators, seabirds can act as indicators of environmental conditions and their diet can provide important information on prey abundance, as well as indicate anthropogenic impacts and changes in food web structure. While numerous methods exist for analysing diet, many are invasive – e.g. regurgitations, stomach flushing, and neck collars. The diet of many prey-carrying animals, including seabirds, can be studied non-invasively by an observer with binoculars, situated at a safe distance away. However, the authors note methodological limitations in observer-based studies and identified the need to further develop non-invasive approaches. The authors tested the use of digital photography to quantify chick diet – both composition and prey size – in the prey-carrying **Greater Crested Tern** *Thalasseus bergii* in South Africa. Photo-sampling produced similar estimates of prey composition and size, compared with the traditional, yet invasive, method of regurgitation, but with a faster species accumulation rate. Photo-sampling revealed almost double the known diversity of prey consumed by the study population; besides the predominant anchovy *Engraulis encrasicolus*, prey taken included sharks, crickets, squid and rock lobster. The authors also present a method to estimate the length of the main prey species, anchovy, with an accuracy of <1 mm and precision of ~0.5 mm. Although processing of images can be time-consuming, the images can be stored indefinitely without loss of data quality or metadata (e.g. date and location). There are potential biases associated with using photography including variation in photographic experience and repeated photography of prey that have longer handling times, resulting in their abundance being over-estimated. Adequate training is thus important.

## 2015 census of the East Caithness Cliffs SPA

**Bob Swann (robert.swann@homecall.co.uk) and Alex Robbins (Scottish Natural Heritage)**

The East Caithness Cliffs SPA is one of the largest seabird colonies in the north of Scotland. At the last count in 1999 - part of the UK national census 'Seabird 2000' (Swann 2016) - it supported 300,000 seabirds (Callaghan et al. 1999). More recent counts, which will contribute towards the next national census 'Seabirds Count', were undertaken between 30th May and 20th June 2015. In a few difficult sections, photographs were taken using a Canon SX50 HS camera and/or a Nikon D50 camera with a 18-55 mm and a 70-300 mm lens. This enabled counts to be undertaken later from a computer, rather than in the field.

The results indicate variable fortunes for the ten species counted (see Table 1). Razorbill (+69.5%) and Great Black-backed Gull (+47.8%) have shown substantial increases in numbers, while European Shag has shown only a slight increase (+3.6%). Northern Fulmar (-3.6%), Herring Gull (-4.2%) and Common Guillemot (-6.2%) have all shown small declines, whilst Atlantic Puffin (-31.3%), Black-legged Kittiwake (-39.5%) and Cormorant (-41.1%) have shown major declines. Many of the changes recorded at East Caithness appear to be not as severe as those recorded throughout the UK between 2000 and 2014 (JNCC 2015) or in Scotland between 1999 and 2014 (see Table 2).

**Table 1.** Total counts of ten seabird species[1] at East Caithness Cliffs SPA in 1999 and 2015.

| | FU | CA | SA | HG | LB | GB | KI | GU | RZ | PU |
|---|---|---|---|---|---|---|---|---|---|---|
| **1999** | 14375 | 90 | 1060 | 3411 | 0 | 180 | 40450 | 159108 | 17727 | 275 |
| **2015** | 13864 | 53 | 1098 | 3267 | 5 | 266 | 24460 | 149248 | 30042 | 189 |
| **% change[2]** | -3.6 | -41.1 | +3.6 | -4.2 | | +47.8 | -39.5 | -6.2 | +69.5 | -31.3 |

[1]Species codes are as follows: FU = Northern Fulmar; CA = Cormorant; SA = European Shag; HG = Herring Gull; LB = Lesser Black-backed Gull; GB = Great Black-backed Gull; KI = Black-legged Kittiwake; GU = Common Guillemot; RZ = Razorbill; PU = Atlantic Puffin.
[2]Caithness changes are over the period 1999-2015, whereas for Scotland it is 1999-2014 and for the UK 2000-2014.

**Table 2.** Percentage change in counts of seven seabird species at East Caithness Cliffs SPA compared with Scottish and UK changes[1].

| | FU | SA | HG | GB | KI | GU | RZ |
|---|---|---|---|---|---|---|---|
| **East Caithness SPA** | -4 | +4 | +48 | -39 | -39 | -6 | +69 |
| **Scotland** | -38 | -24 | -5 | -49 | -63 | -26 | -22 |
| **UK** | -18 | -38 | -17 | -6 | -47 | +22 | +6 |

### Changes in methodology

The changes shown between the 1999 survey and the present survey could be real, or due to methodological changes or a combination of both factors. Although the 2015 count followed the methodology used by the 1999 count, a large number of the 1999 counts were noted as "estimates" (Callaghan et al 1999). We feel the counts for 2015 were all fairly accurate. Many of the land counts were made using a telescope and the use of more modern optics probably helped improve the accuracy of sea-based counts. There were however two changes to the methodology. Firstly, photography was used to help count some of the more difficult sections of cliff and, secondly, additional land and sea counts were made to improve coverage.

A marked up photograph used to count BAD4, East Caithness SPA.

*Use of photographs for censusing seabirds*

A comparison of field counts and photographic counts of Common Guillemots at nine different sections revealed that counts from photographs were on average 12% higher. At An Dun N Geo, a very dense complex section, the photo count of 816 Razorbills was 25% higher than the field count of 655. The use of photographs in 2015 could therefore explain why some species, like Common Guillemot, had not declined as much as expected, while other species like Razorbill had

increased more than expected. However, it should be noted that at the largest site counted from photographs, Guillemots showed a 28% decline, far greater than the overall decline throughout the SPA, whilst Razorbills showed a 20% decline as opposed to the major increase recorded across the entire SPA.

*Land versus sea counts*

Two sections counted only from the sea in 1999 were also counted from land in 2015. The main impact that this had was that the inner narrow parts of geos, which cannot be seen from the sea, were counted. This almost certainly led to the large increases in Northern Fulmar numbers in these two sections. Thirteen sections in 2015 had both land and sea counts (nine in 1999). In some instances, these proved quite tricky to deal with. GPS readings taken on land are difficult to match up with GPS readings taken at sea. Even though sketch maps were drawn of the sections counted by land at the top of the cliff, these often looked very different when seen from a different perspective at the bottom of the cliff. This led to problems in a few sections and may have resulted in some under- or over- counting, if sections were missed out or counted twice. Another issue in some sections was defining exactly where they started and ended. A GPS was not available in 1999, so there was probably some lack of precision regarding start and end points. These discrepancies should have no effect on the overall results, but may explain some of the major differences seen at the individual section level between the 1999 counts and the 2015 counts.

**East Caithness Cliffs SPA trends *versus* national trends**

For the seven key species breeding at the East Caithness Cliffs SPA, the changes in numbers since 1999 suggest that they are faring better than either the total UK or Scottish populations of these species. As discussed above, this could be due to changes in methodology. Perhaps the high number of counts recorded as "estimates" in 1999 under-estimated the actual numbers present. Additionally, perhaps the use of photographs, better optics and improved coverage of certain sections boosted the 2015 counts.

**Table 3.** Counts of Common Guillemots in five monitoring plots between 1999 and 2015.

| Plot | 1999 | 2005 | 2013 | 2015 |
|---|---|---|---|---|
| **Riera Geo** | 1315 | 1637 | 924 | 1420 |
| **Ashy Geo Arch** | 433 | 575 | 406 | 624 |
| **Bad 1** | 1295 | 1195 | 711 | 907 |
| **An Dun plots 1-3** | 785 | 818 | 466 | 650 |
| **Inverhill plot 3** | 486 | 481 | 340 | 390 |
| **Total** | 6313 | 6711 | 4860 | 6006 |

When compared with national trends, most of the changes noted at the East Caithness Cliffs SPA are so different it would suggest that different environmental factors are operating locally, compared with other parts of the country, particularly in 2015. The most likely one being food supply. It was evident, during fieldwork, that a plentiful supply of food was available locally. Feeding frenzies were noted on most visits just offshore. This local abundance of food may have led to high attendance rates of both breeding adults and immatures on the cliffs in 2015. The suggestion that 2015 was a particularly good year for seabirds at East Caithness is backed up by counts for Common Guillemot, for five plots that were counted in 1999, 2005, 2013 (Swann 2013) and 2015 (Table 3). In 2005, 2013 and 2015, plots were all counted by the same observer. These figures show that following a 28.6% decline in numbers between 2005 and 2013, there was a rapid 24% increase in numbers between 2013 and 2015.

**Conclusions and recommendations**

The survey results indicate that since 1999 three species increased in numbers and four species showed declines. These rates of increase were all greater than those recorded for these species nationally (up to 2014), while the declines were all less than those recorded nationally (up to 2014). It appears that 2015 was a particularly good year for breeding seabirds and that this resulted in some particularly high counts. Changes in methodology may have also influenced the results, but probably to a lesser extent.

In order to reduce the effects of changing methodology, the following recommendations are made:

1. The coordinates of all section start and end points are recorded using a GPS and, if necessary, indicated on a photograph (particularly when the counting/GPS position is well back from the actual boundary).
2. Where there is a mixture of land and sea counts in a section, photographs are taken to try and clearly mark the sub-sections counted from land so that these are available during the boat-based surveys.
3. On all complex sections of coastline, a series of overlapping photographs are taken to enable any field counts to be double-checked.

**References**

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JNCC. 2015. Seabird Population Trends and Causes of Change: 1986-2014 Report. Joint Nature Conservation Committee. Updated October 2015. http://www.jncc.defra.gov.uk/page-3201.

Swann, B. 2013. East and North Caithness Cliff SPAs Monitoring 2013: plot counts and breeding productivity. *Scottish Natural Heritage Commissioned Report No.* 622.

Swann, B. 2016. Seabird counts at East Caithness Cliffs SPA for marine renewable casework. Scottish Natural Heritage Commissioned Report No. 902.

Walsh IP, Halley DJ, Harris MP, del Nevo A, Sim, IMW & Tasker ML. 1995. Seabird monitoring handbook for Britain and Ireland. JNCC/ ITE/Seabird Group, Peterborough.

## 51st Annual General Meeting, 8 September 2016 17:45

1. **Present and Apologies**

   **Present**: Steve Votier (SV – Chair), Ellie Owen (EO – Secretary), Viola Ross-Smith (VR – Ordinary member – Communications and Social Media), Hannah Watson (HW – Newsletter Editor), Alice Trevail (AT – Membership Secretary), Jeff Stratford (JS – Website Officer), Helen Wade (HeW – Ordinary member - Early Career), Sarah Wanless, Stephen Chapman, Martin Heubeck, Mike Harris, Ilka Win, Mark Tasker, james Grecian, Andy Webb, Hugh Brazier, Peter Evans, Alan Leitch, Mark Newell, Alex Bond, Steve Hunter, Rob Barrett, Euan Dunn, Alison MacLennan, Ron Hodgson, Marianna Chimienti, Jim Lennon, Francis Daunt.

   **Apologies**: Will Miles (WM – Treasurer), Richard Sherley (RS – Journal Editor), Holly Kirk (HK – Ordinary Member – Assistant Newsletter Editor), Stuart Murray (SM – Ordinary Member – Seabird Census), Bill Bourne, Claire Smith, David Jardine, Estlin Waters.

2. **Minutes of the 50th AGM**

   Minutes were proposed by Hannah Watson and seconded by Alice Trevail.

3. **Matters arising from the minutes.**

   There were no matters arising from the minutes.

4. **The 51st Annual Report**

   SV went through the 51st Annual report. SV asked for opinions in relation to grants which had reported that, unusually, no applications were received for grant in the February 2016 grant round. Specifically he asked whether the grant condition stating that "applications from PhD students will not normally be awarded" should be revoked. Martin Heubeck suggested that the current wording already allowed for some PhDs to be awarded because of the word 'normally' and Mark Tasker concurred, explaining that the wording had been introduced because very many applications were being received from PhD students in the past. There was general agreement that a positive statement suggesting who should apply would be welcomed and that the stipulation that PhDs would not normally be considered could be relaxed. Mark Tasker asked whether the grant round was not well advertised? EO confirmed that it had been advertised in our newsletter, our website, and social media. HW suggested an email to the membership before each grant round could be sent

   The Annual report was proposed by Sarah Wanless and seconded by James Grecian.

   **HK/All ExCom** to come up with suitable new text for grant conditions

   **AT** to send email to membership before each grant round deadline (Feb and Oct)

5. **2015–16 Accounts and Treasurers Report**

   The accounts were not presented at the AGM but will be forwarded to all those attending the AGM by email within 1 month and we will request a proposer and a seconded by email. SV apologised for the accounts not being ready for the meeting.
   *The Treasurer's Report was circulated via email on 4th Oct to those present during the AGM. Current expenditure is slightly inflated due to the conference, but this will be balanced by membership payments later in the financial year. Francis Daunt states that the conference finances are not yet finalised, but they are expected to break even comfortably.
   The accounts were proposed by Helen Wade and seconded by Ellie Owen.

6. **Membership**

   AT reported that "as of this AGM, the Seabird Group has 315 paid members (including life members, statutory institutions)". Mark Tasker suggested that the Seabird Group's presence could be made more obvious at this and other conferences in order to encourage new members. There was general agreement and several useful suggestions for how to achieve this. It

was suggested that we put a membership form into the conference bag at the next conference and had the conference resting screen advertising membership. The suggestion that we require membership before allowing conference registration was rejected because it is likely that this is not allowed under charity commission rules. HW drew members attention to the banners produced. The Royal Naval Birdwatching Society would be keen to join. Martin Heubeck thanked Alice Travail for her efforts to correct the missing details in the database.

**AT** to arrange membership for the RNBWS

**7. Journal *Seabird* and Newsletter**

SV reported that *Seabird* 29 was making good progress and thanked the reviewers and submitting authors. VR asked for more manuscripts and highlighted that early-career members should be encouraged to submit here, in light of the excellent reviewers and the supportive attitude of the journal editors.

HW thanked contributors to the newsletter and encouraged more, explaining that the newsletter was an excellent way to share experiences across the seabird group. Sarah Wanless commented that the journal and newsletter were a really good read.

**8. Changes to the Seabird Group Website**

SV thanked JS for considerable updates to the group's website. Ilka Win said the updates were fantastic. VR reported a 10-fold increase in the number of followers on Twitter/Facebook in the last 3 years. James Grecian commented on the power of social media for groups like ourselves, highlighting that the World Seabird Union 2 Twitter conference was reported in the journal Science.

**9. The next national Seabird Census**

SV explained that SM attends the Census Steering Group meetings on behalf of the Seabird Group. Martin Heubeck and Mike Harris reported that a Seabird Monitoring Programme meeting on the 6th September 2016 had confirmed that the counting period for the current census will be 2015 to 2019. The census steering group was to undertake a review of what had been counted already and a gap analysis to see what still needed to be counted, to be completed by the end of 2016. The mood was said to be considerably more positive than in previous meetings.

The Seabird Group remains poised with legacy funds to support the census. A discussion arose around whether the Seabird Group funds should cover several small or few large projects. The consensus was that this should be left to the grants committee to decide, but that the availability of grants should be advertised widely, especially now the 2019 end date is known.

Jim Lennon and Shiants Island Auk Ringing Group can do sites between Skye and the Shiants. Nigel Winn is a useful contact for the Hebrides.

**SM** to keep membership updated with the most recent news from the SMP meeting and to publicise the availability of grants from the Seabird Group.

**SM** to contact Jim Lennon to facilitate his participation in the census and make contact with Nigel Winn

**10. Nominations to the Executive Committee**

Holly Kirk was elected Secretary, unopposed - proposed Stephen Chapman, seconded Mark Tasker.
Viv Booth was elected Ordinary Member, unopposed – proposed Andy Webb, seconded Viola Ross Smith.

Exiting members were warmly thanked and applauded and the new member welcomed to ExCom.

**11. AOB**

SV reported that the next conference will be held in Liverpool in September and Jon Green and Sam Patrick will be the local organisers. The committee is aware of several other ornithological conferences around this time but none directly clashes and it is important to be sympathetic to the availability of the local organisers.

**The meeting ended at 18:48hrs.**

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:

| | | |
|---|---|---|
| Chairman | Stephen Votier (2019) | S.C.Votier@exeter.ac.uk |
| Secretary | Holly Kirk (2020) | holly.kirk@merton.ox.ac.uk |
| Treasurer | Will Miles (2018) | willtsmiles@hotmail.com |
| Membership Secretary | Alice Trevail (2018) | membership@seabirdgroup.org.uk |
| Seabird Editor | Richard Sherley (2019) | journal@seabirdgroup.org.uk |
| Newsletter Editor | Hannah Watson (2018) | 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 | Helen Wade (2017) | helenwade01@gmail.com |
| Seabird Census | Stuart Murray (2018) | murraysurvey@yahoo.co.uk |
| Social Media | Viola Ross-Smith (2018) | viola.ross-smith@bto.org |

| **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.