

Friends of



No. 45. January 2017

Welcome, from Fair Isle, to a New Year where we're looking forward to see if we can have a repeat of the fantastic birding of 2016. As well as the Black-browed Albatross and Little Egret that were added to the island list in the spring, Siberian Accentor made its first appearance in the autumn—shortly followed by its second! These were part of an amazing autumn, in which seemingly constant easterly winds throughout October brought a whole host of eastern rarities, including four Pine Buntings, four Lanceolated Warblers, Pechora Pipit and many others; check the FIBO website for all the details (we try to keep the latest sightings page updated daily throughout the migration periods).

Of course, the rarities grabbed the headlines and were what a lot of the visitors were hoping for, but the 'bread and butter' of the daily census are the counts of common migrants, and we're delighted that this edition of the FOFI newsletter contains a write-up by Will Miles of the Fair Isle Migration Project's first analysis of all of the data that has been collected in FIBO's history. This major piece of work was kick-started by a grant from SOC to enable the digitisation of the FIBO Logs and it is great to see the results now starting to appear, showing just some of what Bird Observatories can still contribute to science. You'll also find a write-up from Elizabeth Holmes, one of 2016's volunteers who received a grant from the Simon Aspinall Bursary Fund to enable her to visit FIBO, a summary of the 2016 seabird season, some familiar Killer Whales and details on some record-breakers.

Many of you will have watched the documentary on Fair Isle shown recently on BBC; amongst other things it was a good chance for anyone who has a 'TV list' to add Lanceolated Warbler to it! It was certainly interesting to watch, though perhaps it didn't capture all of the magic of the isle — maybe that is something you can only really experience by spending time on the Isle. Recent events from the Isle have included the sad passing away of Annie Thomson and Peter Harrison and obituaries for both will appear in the 2016 Annual Report. Our condolences are passed on to Annie and Peter's families, and we are very thankful for the time that we got to spend with them in our six years on Fair Isle. Taking Grace and Freyja to Shirva, with Annie chatting to the kids and providing a supply of stories and island history are a particularly fond memory.

We are very pleased to welcome Kathryn Parry and her daughters Efa and Enid to Fair Isle (instantly doubling the school roll!) we hope their stay on Fair Isle is a long and happy one.

There is lots to look forward to in 2017, with more people hopefully moving to the Isle, the improvements to the isle's electricity supply and broadband and, no doubt, another busy season at the Obs. Thanks for your support.

David and Susannah Parnaby
FIBO Warden and Administrator

Visiting FIBO

2017 is now already very busy in the peak seasons, although there are plenty of spaces outside of these. Don't forget that booking for the 2018 season opens on 1st March 2018.

Visiting FIBO in 2017

The Obs is open from 17th April to 31st October (note, the Obs will be closed from 1st-8th August)

2017 Standard Rates (full board, en-suite):

Single Room:	£75 per night
Double/Twin Room:	£70 per person per night
Single occupancy:	£85 per person per night
Children (6-12):	£32.50 per night
Children under 6:	free

2017 Special Offers (per person):

Under 25s:	£35 per night
FOFI July offer:	20% off all room rates
17th April – 11th May	£60 per night
1st – 31st August	£60 per night
15th – 31st October	£60 per night

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The first major analysis of FIBO's newly digitised migrant census dataset

Dr Will Miles



The full spring and autumn migration periods of Swallow have lengthened since 1955, by several weeks in each season. *Photo by Will Miles.*

The results of the first major analysis of FIBO's newly digitised migration census dataset were published by the international science journal *Global Change Biology* in September 2016. This was the first major publication from the Fair Isle Migration Project, a research collaboration between Fair Isle Bird Observatory Trust and the University of Aberdeen. The first analysis focused on 13 species of songbird that breed in northern Europe, winter in sub-Saharan Africa and are commonly recorded on Fair Isle on migration every spring and autumn.

Migrant birds have been intensively censused on Fair Isle by FIBO staff every year since 1948. The daily spring and autumn migration census was initiated by George Waterson and Ken Williamson and a standard methodology has been in place since 1955. From April to June and from August to the end of October, the three migrant census areas of Fair Isle ('North', 'South-east' and 'South-west', which collectively cover the entire island) have been walked by the Bird Observatory's wardening staff, all migrant bird species have been counted and total daily counts have been compiled and entered into the Observatory's daily log book.

The FIBO log books form a phenomenally rich dataset, comprising over nine million records of 400 species across 70+ years, but for many decades existed only in paper copy. However, digitisation of all historical data for all years was completed in 2013, thanks to a generous grant from The Scottish Ornithologists' Club.

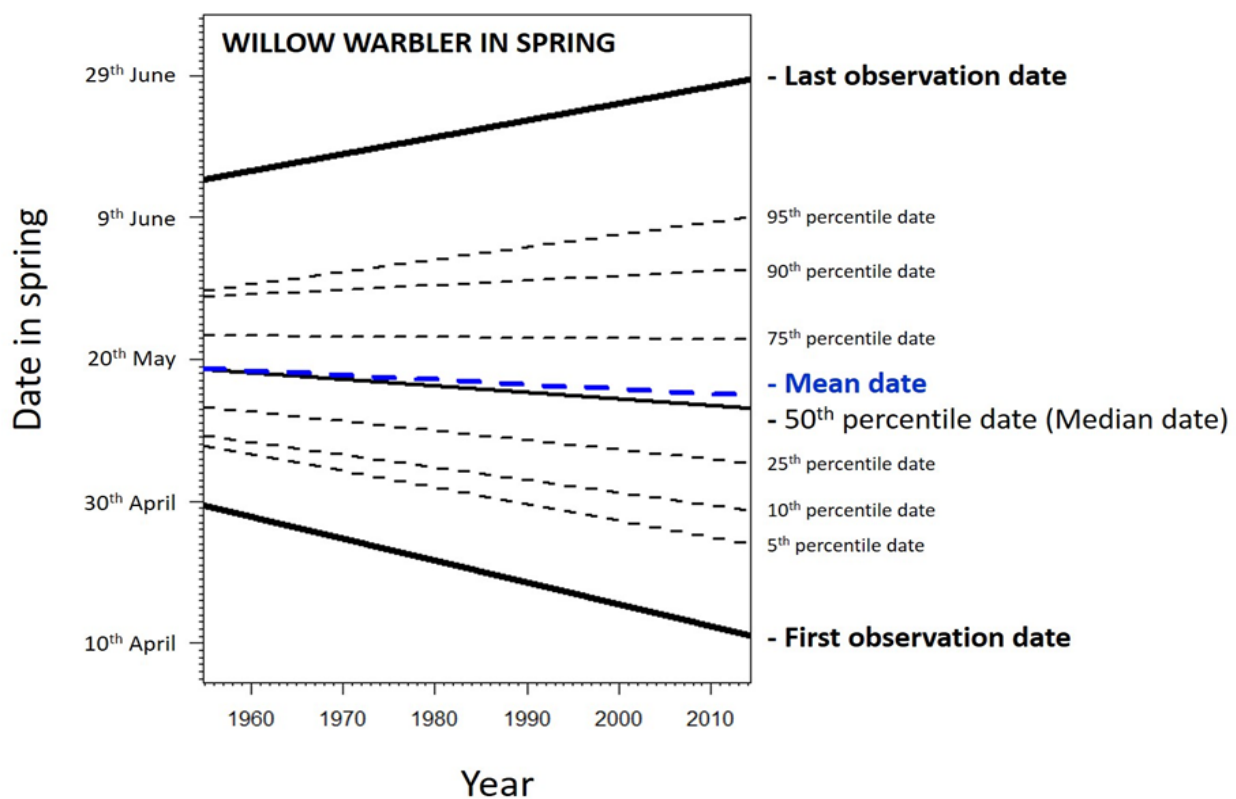
The fully digitised FIBO census dataset presents huge scope for a multitude of different migration studies and analyses. The first major analysis of the dataset focused on the migration timing of long-distance migrants not *just* because long-distance migration is one of the most staggering and captivating natural phenomena in the world, but also because there is growing concern that climate change is causing major shifts in seasonal, biological events such as migration, at large geographical scales.

The key questions to answer were: 1) How has the migration timing of trans-Saharan migrant birds changed in spring and autumn across 60 years? 2) Is the timing of migration in spring and autumn closely linked? 3) Can migration timing be adequately measured across years using just one metric of timing, for example 'first observation date'?

Initial pilot analyses revealed that these questions could be answered in detail using the FIBO dataset, with few limitations. The data for the 13 study species were of very high temporal resolution (daily data) and covered both spring and autumn; there were very few missing data since 1955; the census methodology and observer coverage of the island had not changed since 1955; and none of the study species bred on Fair Isle - meaning the data represented purely migratory individuals and not a combination of resident breeders and migrants. Furthermore, in each year (1955-2014), the daily census data spanned the full spring and autumn migration periods of each species, thereby fully capturing the entire date range that each species occurred in each season, from first observation date to last observation date. This meant that the timing of the entire migration period of each species could be measured, rather than just one aspect of it, such as the first arrivals.

For each year and each season, the timing of the full migration period of each species was measured using ten phenology metrics, namely: the first observation date, the 5th, 10th, 25th, 50th, 75th, 90th and 95th percentile dates, the last observation date and the mean date. (Here, a 'percentile date' is just a fixed percentage through the full migration period data – for example, the 5th percentile date is the date by which 5% of all the dated records have occurred.) These ten metrics were selected because they collectively span the full migration period and thereby provide a comprehensive, detailed insight into the migration timing of each species

The results of the analysis revealed considerable and unexpected changes in the migration timing of long-distance migrants that winter in Africa. In most species, in spring and autumn, the early migration phase (measured as the first observation date and the 5th and 10th percentile dates) commonly got earlier, mean spring and autumn migration dates changed little, while the late migration phase (measured as the 90th and 95th percentile dates and the last observation date) commonly got later. Consequently, for most species in both seasons, the duration of the full migration period typically lengthened across years. In some species' this lengthening was substantial, for example the spring migration period of Willow Warbler expanded from approximately seven weeks in 1955 to 12 weeks in 2014, and in autumn the migration period of Swallow expanded from approximately eight weeks in 1955 to 13 weeks in 2014.

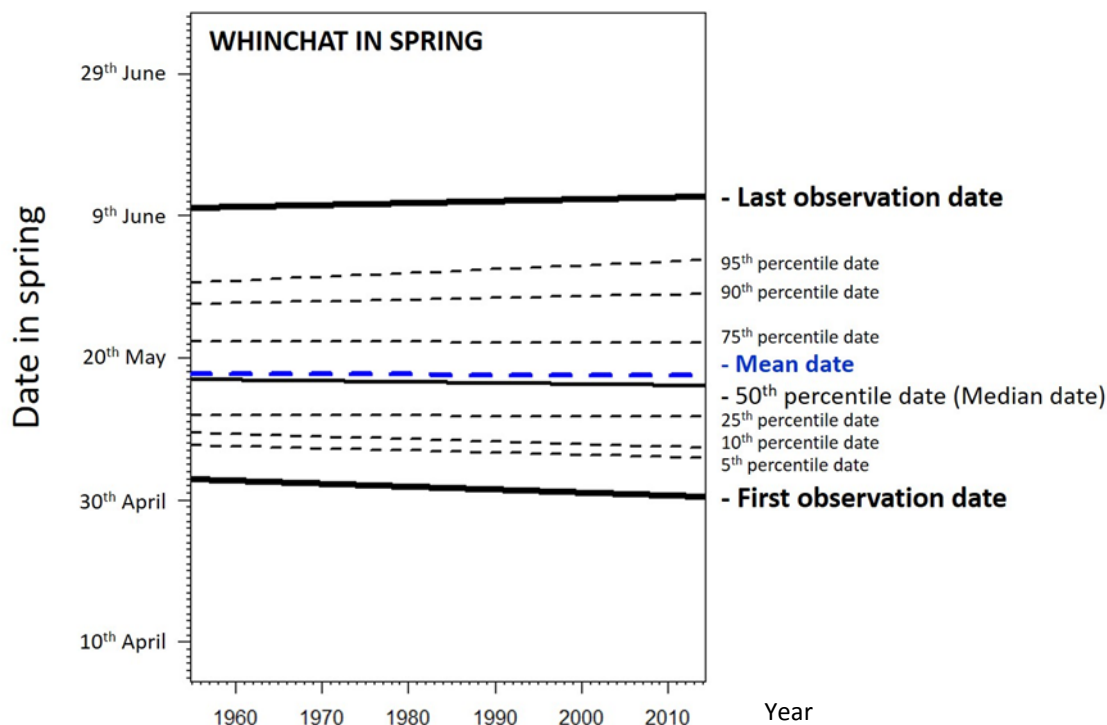


Summary of changes in Willow Warbler migration timing in spring on Fair Isle. Lines represent the linear trend (regression of date on year) for each of the ten phenology metrics across 60 years (1955-2014). Collectively, the 10 metrics span the full migration period, from first observation date to last observation date. Across 60 years, the full migration period has lengthened by approximately five weeks.

The timing of spring and autumn migration was found not to be closely linked. In any given year, migrant birds that arrive at their breeding grounds early in spring might be expected to depart early in autumn too, as soon as their chicks have fledged. But migration timing in consecutive seasons on Fair Isle occurred independently. For example, if

migration timing was early in spring it was not consistently early in the following autumn, and if migration timing was early in autumn it was not consistently early in the following spring.

Furthermore, the 10 metrics measuring migration timing across each full migration period were not strongly correlated with each other, in any season for any species. This means that no single metric adequately described the full pattern of change in migration timing and that the changes in timing could not have been adequately measured across years using just one metric, such as first observation date. For example, had migration timing been measured using just the first observation date, in most species this would have shown advancements in timing, but not revealed the delays that occurred simultaneously in the late phase of the full migration period.



Summary of changes in Whinchat spring migration timing on Fair Isle. Lines represent the linear trend (regression of date on year) for each of the ten phenology metrics across 60 years (1955-2014). Collectively the 10 metrics span the full migration period, from first observation date to last observation date. Unusually, in this species the full migration period lengthened by very little across years.

Overall, this new analysis of the FIBO census dataset revealed patterns of simultaneous advancement, stability and delay in the spring and autumn migration timing of long-distance migrants. These patterns were unexpectedly complex and for several species included substantial changes in migration timing in both seasons. Such complexity in timing is only revealed if multiple metrics spanning the full migration period, rather than single metrics, are used to measure changes in migration timing. The wider implication of this analysis is that existing evidence of long-term changes in seasonal biological events detected using only one or two metrics should be interpreted with caution, because divergent changes occurring simultaneously could potentially have remained undetected.

Details of the Fair Isle research paper in *Global Change Biology* can be found online at: <http://onlinelibrary.wiley.com/doi/10.1111/gcb.13486/full>

An article about the origins, development and analysis of the FIBO migrant census dataset is to be published in the journal *British Birds* in 2017.

Volunteering at FIBO.

Elizabeth Holmes, recipient of SABF grant

I volunteered at FIBO from 21st July to 14th August 2016 as part of my year out before going on to study Ecology and Wildlife Conservation at the University of Reading. I visited many countries and did various volunteering stints during my gap year but working with the FIBO was definitely the highlight of my whole year.

Home for me is Shropshire, making it an epic journey to the island. After a 24-hour journey involving trains, planes, automobiles and ferries I reached the Island. As soon as I hit terra firma I was getting stuck into life at the Obs, including eating a lot of great food! Most of the tasks I did were with four other youngsters who were also volunteering, making everything even more enjoyable and allowing me to make some really good friends. I spent my first night on the island helping with Storm Petrel ringing. After four nights in a row of 'storming', the song of the species played to lure birds in is a sound I will never forget! Here I got to ring my first seabird, and one of the cutest at that! Most sessions carried on through the night, allowing us to see the 4am sunrise. The awe of what we were doing kept us awake, as well as a few chocolate bars!

The first trip out on the Obs boat allowed us to explore the caves of Sheep Rock. We landed in a little cove and searched for Black Guillemot and Shag nests between boulders. We carefully extracted the chicks out of their nests to be ringed. This saw my first day of being covered in bird excrement, which made me feel like a proper ornithologist... and I loved it! Another boat adventure took us to Greenholm, home to at least 100 pairs of Puffin, where burrows were being monitored. Checking a burrow involves sticking your arm as far down the burrow as physically possible in search of 'pufflings' and the occasional angry adult!

I also got to do lots of work with Bonxies and Arctic Skuas ('Skootie Alan' - the best name ever!). We collected pellets to identify what they were eating, used GPS to monitor nests, and ringed chicks. After a month of being dived-bombed by these birds I came to love them, I greatly miss being able to high five a Great Skua!

My work provided me with many new experiences and senses, including some unique smells! From early August, we started ringing Fulmar chicks. Many nest within dry stone walls or on the side of one of the heather-covered hills. It was no problem catching the chicks at this stage as they were just great lumps of grey down, but don't be fooled, I soon found out their secret weapon...sick. I spent a whole week smelling of it, but it was worth it.

Working with the wardening team provided so many unique experiences, and greatly increased my knowledge of sea bird ecology, as well as strengthening my love of nature and my ambition to work to protect it! I'm definitely hooked and can't wait to do more work in this incredible place!

The Simon Aspinall Bursary Fund and John Harrison Memorial Fund provide grants to help cover travel costs and subsidise accommodation for young volunteers to join the work of the wardening team at FIBO. See the FIBO website for details.

Record Breakers!

Britain's remotest inhabited island has always been a good place for records to be set, and there have recently been a few more to report.

Many of you will remember the freak wave that demolished the wall around South Light in February 2013, and it has recently been announced that it was recorded by a buoy in the Atlantic as a 19 metre record-breaker! There are details at: <http://www.bbc.co.uk/news/uk-38312935>.

A record that was actually set on the island was achieved by Gary Prescott, the 'Biking Birder', who recorded his 307th species for the year on Fair Isle on 18th October (he finished the year on 318). What made this a record was that, other than ferries, Gary had achieved the entire year list by using nothing but his bike! Gary was already the British record holder, but this total gave him the European green record. Gary has also been collecting money for a variety of charities and if anyone wants to support any of them, or find out more about Gary's adventures, they can do so at:

bikingbirder2016.blogspot.co.uk/

Meanwhile, Mark Pass visited Fair Isle in October, where Pechora Pipit was his prime target (which he was successful in seeing) as part of his attempt at the British year list record, which he has since broken, having recorded a remarkable number of species (somewhere in the region of 400 at the last count).



Pechora Pipit, Lee Gregory

Want to volunteer at FIBO?

It's not just wardening volunteers that are needed at FIBO, every year we are also helped by domestic and bar volunteers who become a very valuable part of the team and gain some great experiences.

Interested? Full details can be found on the FIBO website.



1st November 2013



30th June 2011

Killer Whales sightings this year included two old friends - returning animals whose unique scar patterns identified them. Top is '072', whose fin has started sprouting since his last sighting, which shows he's an adolescent male, and bottom is 'Mousa' who was seen in a family group including her new calf and her youngster from 2013



3rd March 2016



10th July 2016

Fair Isle Seabirds in 2016

After two years of slight improvements following some absolutely disastrous breeding seasons from 2007-2013, 2016 again showed some glimmers of hope. 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 though was Bonxie, which recorded an increase of 174.5% since 2015 to 516 territories (almost all with active nests), 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 apparently occupied site), Shag (0.44 chicks per apparently occupied nest [AON]), Guillemot (0.45 per apparently incubating adult) and Puffin (0.64/egg) all showed small or moderate declines in productivity since 2015.

Bonxie productivity declined to 0.66 chicks fledged per apparently occupied territory (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 representing 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.

The RSPB visited in the summer to undertake tagging work on Puffins and there will be a full write up of their fascinating work in the 2016 FIBO Annual Report.

Annual Reports

We hope you have enjoyed the new format of the Annual Reports, we always welcome your feedback. We are also always on the look-out for photographs to include, so please check the website or get in touch with FIBO if you would like to contribute images of birds, people or places from 2016.



Razorbill, Lee Gregory