

84th Annual Report & Accounts 2017/18

The British Trust for Ornithology
The Nunnery
Thetford
Norfolk IP24 2PU

Registered Charity No. 216652 (England & Wales) No. SC039193 (Scotland)
Company Limited by Guarantee
Registered in England and Wales Company No. 357284

The British Trust for Ornithology Board of Trustees and Management 2018

Patron	HRH The Duke of Edinburgh

President Mr C G Packham

Board of Trustees

Board of Trustees		
Chair	Professor J A Gill	2016-2020
Honorary Treasurer	Mr I Packer	2016-2020
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Chair of Regional Network Committee	Lt Col R C Dickey	2014-2019
Chair of Ringing Committee	Dr I P Bainbridge	2016-2020
Ordinary Board Members	Dr F Barclay	2014-2020
	Professor S Bearhop	2015-2018
	Dr S Hunter	2017-2021
	Mr D Jardine	2016-2019
	Dr D M Parker	2014-2021
	Dr D J Reynolds	2016-2019
	Mr N A Sherwin	2017-2020
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Vice Presidents	Mr K F Betton	2014-2021
	Professor T R Birkhead	2013-2020
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	Professor I P F Owens	2016-2023
	Professor A R Watkinson	2012-2019

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Chair Lt Col R C Dickey; Mr R E Chapman; Mr B Galpin; Ms C Gunn; Mr D Jardine; Mrs C M Jones; Mr W Morris; Dr D M Parker; Mr S W Petrek.

Ringing Committee

Chair Dr I P Bainbridge; Professor S Bearhop; Mr J Black; Mr A C Blackburn; Dr R K Broughton; Mr A V Cross; Dr S Hunter; Dr J Smart; Dr E Weston. Representatives: Mrs K Clarke; Miss E Marshall.

Senior Leadership Team

Chief Executive Officer: Dr A Clements; Director of Science: Dr J W Pearce-Higgins;

Director of Engagement: Dr D I P Evans; Director of Finance & Services, Company Secretary: Mr A T Scott

Past Chairs and Presidents

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Chairs:		Presidents:	
1935-39	The Right Hon. Earl of Mansfield	1958-60, 1965-68	R C Homes
1940-41	The Right Hon. Malcolm MacDonald MP	1961-64	C A Norris
1942-47	Dr A Landsborough Thomson CB OBE DSc	1969-72	I J Ferguson-Lees
1948	Dr E M Nicholson CB CVO	1973-76	R A O Hickling
1949	A W Boyd MC	1977-80	J M McMeeking MBE
1950	Sir Norman Kinnear	1981-84	S M Taylor
1951-56	Major-General H P W Houston	1985-89	J A Hancock OBE
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1988-91	G H Green	1994-96	Sir William Wilkinson
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1996-2000	Dr H P Sitters	2002-2005	Lord Blakenham
2001-2004	A J Martin	2006-2013	Baroness Young of Old Scone
2005-2008	Dr S Hunter		
2009-2013	Professor I Newton FRS OBE		
2014-2016	Professor A D Fox		

BRITISH TRUST FOR ORNITHOLOGY STAFF as at 31 March 2018

Chief Executive Officer: Dr Andy Clements

SCIENCE

Director of Science: Dr James Pearce-Higgins

PA / Senior Secretary: Nicki Read Senior Secretary: Jane Chase

Associate Director - Research: Dr Rob Robinson (Secretary: Jane Chase)

Senior Research Fellow: Dr Stephen Baillie (Secretary: Jane Chase)

Ringing Officer

Surveys

Head &

Secretary

Wetland Bird Survey

Demographic Monitoring Projects

Scheme Administrator

BBS National Organiser

BirdTrack Support Officer

WeBS National Organiser

WeBS Low Tide Count Organiser

WeBS Counter Network Organiser Heidi Mellan

BirdTrack Organiser

National Survey Coordinator

International Research
ena Head & Principal Ecologist Prof Phil Atkinson
Senior Research Ecologist Dr Chris Hewson
Spatial Ecologist Dr Mark Miller
Secretary Maria Knight/Nicki Read
*
gle Monitoring Research
Principal Ecologist Dr David Noble
Research Ecologist Dr Esther Kettel
ki Read
RESEARCH
Population Ecology & Modelling
Head & Principal Ecologist Dr Simon Gillings
Senior Research Ecologist Dr Stuart Newson
Ecological Statistician Dr Philipp Boersch-Supan
Research Ecologist Dr Sam Franks
Research Ecologist Dr Blaise Martay *
Research Ecologist Dr Dario Massimino
Spatial Ecologist Dr Jenni Border
Secretary Jane Chase/Hazel Evans
*based at BTO Scotland

Nest Records Organiser Carl Barimore Head & Principal Ecol Ringing Surveys Organiser Ruth Walker Society Records Fool

Sabine Schäfer

Hazel Evans

Dawn Balmer

Sarah Harris

Scott Mayson

Stephen McAvov

Dr Teresa Frost

Neil Calbrade

Maria Knight/Nicki Read

Head & Principal Ecologist	Dr Niall Burton
Senior Research Ecologist	Dr Graham Austin
Senior Research Ecologist	Dr Aonghais Cook
Research Ecologist	vacant
Senior Research Ecologist	Dr Chris Thaxter
Research Officer	Ian Woodward
Secretary	Maria Knight/Nicki Read

Wetland & Marine Research

ENGAGEMENT

Director of Engagement: Dr Ieuan Evans

Senior Secretary: Sam Rider

ENGAGEMENT

Membership & Volunteer Engagement

Head of Engagement Debbie Lee
Training Manager Nick Moran

Supporter Team

Senior Supporter Administrator
Supporter Development Officer
Supporter Assistant
Supporter Assistant
Supporter Administrator
Supporter Administrator
Sam Graham
Caroline Foot
Sam Graham
Supporter Administrator
Sam Graham
Supporter Administrator
Sam Graham
Sam Graham
Sam Graham
Sam Graham
Supporter Assistant
Sam Graham
Supporter Assistant
Sam Graham
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Fundraising

Head, Fundraising & Strategic Marketing Emma Douglas Fundraiser (Corporate & Trust) Bonita Johnston Fundraising Secretary Sam Rider Major Giving Officer David Agombar Supporter Development Officer Rachel Gostling

COMMUNICATIONS

Head of Communications Mike Toms

Garden Ecology

GBW Organiser Kate Risely
GBW Supporter Development Officer Claire Boothby

Marketing

Media Manager Paul Stancliffe
Science Communications Manager Dr Viola Ross-Smith
Fave Vogely

Information Services

Librarian P/T Carole Showell

INFORMATION SYSTEMS

Associate Director IS: Dr Andy Musgrove

Senior Secretary: Jane Chase

Senior Database Officer Dr Andrew Jovs Senior Software Developer Mark Hammond William Skellorn Website Manager Computer Support Officer Gordon Barnes Database Developer Steve Pritchard Database Developer Justin Walker Database Officer **Bob Blogg** Software Developer Matthew Baxter Software Developer Sam Marston Systems Engineer Ed Hanrahan Website Developer Tom Sage **Business Analyst** Dave Turvey

Northern Ireland Officer Shane Wolsey

Scientific Officer Dr Katherine Booth Jones

COMBINED ECOLOGY

Science Director: Prof Phil Atkinson
Secretary: Nicki Read/Maria Knight

Senior Research Ecologist vacant

PORZANA

Managing Director: David Agombar
Business Manager: Shane Muggridge

Factory Operatives: Harvey Cornell, Trupti Cornell, Elaine Ennis, John

Muggridge, Lucy Willsher

FINANCE & SERVICES

Director of Finance & Services: Andrew Scott Senior Secretary: Nicki Read

Accounts & Facilities

Financial Accountant /

Facilities Manager Mary Gray
Facilities / H&S Officer Sam Massimino
Facilities / H&S Officer Pat Sparkes
General Sales Officer / Sonya Calder

Admin. & Finance Assistant

Management Accountant Irene Bowles
Receptionist Christine Bloomfield
Receptionist Charmain Innes
Admin. Assistant Diane Bragg

Human Resources

HR Manager Sian Knott

Research Support

Resource Manager Virginia Cates
Research Support Administrator Sandra Sparkes
Research Support Officer Penny Mitchell

BTO SCOTLAND

Associate Director Country Offices: Dr Chris Wernham

Senior Secretary: Rebecca Cranston

Senior Research Ecologist John Calladine

Data and Admin. Officer Anne Carrington-Cotton
Development and Engagement Manager Dr Ben Darvill
Fieldwork, Training & Engagement Officer David Jarrett

Research Ecologist Dr Liz Humphreys
Research Ecologist Dr Blaise Martay *
Research Ecologist Dr Mark Wilson
Scottish Raptor Monitoring Coordinator Dr Amy Challis

*Research PEM Team

BTO WALES

Senior Ecologist Dr Rachel Taylor
Research Ecologist Dr Katharine Bowgen
Development Coordinator Kelvin Jones

BTO NORTHERN IRELAND

For the purposes of Section 162 of the Charities Act 2011 and Directors' Report for the purposes of Section 415 of the Companies Act 2006.

Company number: 357284 (England and Wales)

Charity numbers: 216652 (England and Wales); SC039193 (Scotland)

Registered Office: The Nunnery, Thetford, Norfolk IP24 2PU

Principal Advisers:

Auditor Lovewell Blake LLP, Bankside 300, Peachman Way, Broadland Business Park, Norwich NR7 0LB

Principal Bankers National Westminster Bank plc, 7 Cornhill, Bury St Edmunds, Suffolk IP33 1BQ

Royal Bank of Scotland, 2 Blenheim Place, Edinburgh EH7 5JH

Solicitors Browne Jacobson LLP, Castle Meadow Road, Nottingham NG2 1BJ

Pensions Advisers Russell Ulyatt Financial Services Ltd, 1 The Triangle, ng2 Business Park, Nottingham NG2 1AE Investment Advisers Russell Ulyatt Financial Services Ltd, 1 The Triangle, ng2 Business Park, Nottingham NG2 1AE

Insurance Brokers Uttings Insurance Brokers, 16 The Fairland, Hingham, Norwich, Norfolk NR9 4HN

The members of the Board are the directors of the charitable company and the trustees for the purpose of charity law. Those serving during the year were as follows:

Dr I P Bainbridge Mr D Jardine

Dr F Barclay Mr C P R Mills (retired 31 December 2017)
Professor S Bearhop Mr C G Packham (retired 31 December 2017)

Lt Col R C Dickey Mr I Packer
Professor J A Gill Dr D M Parker
Mr A C B Henderson (retired 31 December 2017) Dr D J Reynolds
Dr S Hunter Mr N A Sherwin
Ms F M Hurst Mrs J Spencer

Structure, Governance and Management

Governing Document

The British Trust for Ornithology (also known as the BTO) is a company limited by guarantee governed by its Memorandum and Articles of Association and subject to the Companies Act 2006. It is registered as a charity with the Charity Commission and the Office of the Scottish Charity Regulator. Membership is open to any person whose application is approved by the Board upon payment of the requisite subscription. Members undertake to contribute up to £1 each in the event of an insolvent winding up.

Trustees

Trustees are nominated by the Board or members and elected by the members at the Annual General Meeting in December each year, to serve from the following 1 January. The normal term of office is four years, with a limit of two consecutive terms. New trustees receive a comprehensive information pack and undergo an induction day at The Nunnery to brief them on the BTO and their roles as company directors and trustees.

Organisation and Key Management Remuneration

The Board of Trustees is the governing body of the BTO. It meets four times a year. The Board is supported by the Regional Network and Ringing Committees. The day-to-day management of the BTO is delegated to the Senior Leadership Team, led by the Chief Executive Officer.

The salary of the CEO is determined by the Board, and was last set in 2007 when the post became vacant. The remuneration of all other staff is set according to a bespoke job evaluation scheme, benchmarked to the Croner Charity Rewards database.

Related Parties

The BTO's wholly owned subsidiary, BTO Services Ltd, was established to undertake commercial operations in support of the BTO, and gifts its profits to the Trust. On 30 August 2017 BTO Services Ltd acquired the entire issued share capital of the ring manufacturer Porzana Ltd. The net assets and activities of that company were subsequently hived up to BTO Services Ltd and it then became dormant.

The BTO co-operates with many other charities, with government agencies and other bodies in pursuit of its objectives, as illustrated in this report.

Volunteers

The Trust depends on the contributions of many thousands of volunteers who participate in BTO surveys and other activities. We are greatly indebted to them, and especially to the Regional Representatives and other regional volunteers who organise so much BTO activity at a local level. It was estimated that BTO volunteers contributed the equivalent of 220,000 days of work in 2017 (2016: 200,000 days).

Risk Management

A risk register is maintained which identifies the significant risks faced by the BTO and the measures in place to manage those risks. These are monitored by the Senior Leadership Team and reviewed biannually by the Board.

Fundraising Standards

We follow the Fundraising Regulator's Code of Fundraising Practice. We undertake all fundraising from individuals inhouse but during this year we used the services of a specialist consultancy to help us research and approach charitable trusts and foundations in support of our work. We have not received any complaints regarding our fundraising practices. We take all reasonable steps to treat supporters fairly and transparently, especially if we believe they may be in a vulnerable position.

Investments

The Memorandum of Association permits the Trust to invest monies not immediately required for its purposes as the trustees see fit. The Board's investment policy is to maximise long term total return by investing in a combination of high quality short dated bonds and globally diversified equities, balanced 45%/55%. The equities part of the portfolio is invested in a sustainable fund (see note 10). Investment performance against benchmark was as follows:

	Portfolio	Benchmark
Year ended 31 March 2018	+0.35%	-0.28%
Since inception (28 August 2014)	+26.56%	+25.03%

Objectives and Activities

Charitable Objects

The objects of the Trust, as set out in its Memorandum of Association are, for the benefit of the nation:

- (i) To promote, organise, carry on and encourage study and research and particularly field work for the advancement of knowledge in all branches of the Science of Ornithology.
- (ii) Permanently to preserve and protect lands and objects which by their natural features are suitable for the preservation and study of bird life and of fauna and flora generally.

Public Benefit

The trustees have complied with the duty in Section 17 of the Charities Act 2011 to have due regard to public benefit guidance published by the Charity Commission. The following paragraphs set out in detail the aims, activities and performance of the Trust, and the way in which they provide public benefit.

Objectives and Activities

The BTO's purpose and public benefit is to deliver objective information and advice, through undertaking impartial research and analysis about birds, other species and habitats, to advance the understanding of nature. We inform policies and evidence-based decisions that impact on the environment such that future generations can benefit from a healthy and wildlife-rich environment. The BTO does this by:

- Sustaining long-term extensive programmes and smaller scale intensive research to study the population trends, movements, breeding, survival, ecology and behaviour of wild birds;
- Encouraging, enthusing, training and supporting volunteers to take part in scientific studies;
- Bringing together professional scientists and volunteer birdwatchers in surveys of wildlife (particularly, but not exclusively, birds);
- Analysing the data gathered through these studies, making information available to Government and other bodies, and publishing the results in the primary scientific literature and via the internet, the birdwatching and conservation press and the media more generally.

Strategic Report

Achievements and performance

The objectives set for 2017/18 and the progress achieved against those objectives were as follows:

1. Enable and deliver high quality and relevant science

Positive trends in our scientific output have continued, with more than 50 journal articles published in 2017. These have included an increasing proportion appearing in high impact journals, reflecting the quality and academic impact of BTO's scientific research

Our work is increasingly collaborative with other organisations; an output of a strategic aim of the 2015/20 strategy. This is particularly the case in two current areas of species-focussed research – declining Afro-Palaearctic migrants, and breeding waders. Here, BTO-led research is providing important insights into causes of decline, and starting to test potential interventions, the implementation of which will require cooperation across a wide range of stakeholders.

Our monitoring schemes continue to track increasing numbers of species, populations and taxa. The resulting data underpin a significant proportion of the research that we undertake. We have an increasingly strategic approach to identifying our monitoring priorities, which is why a current focus is on owls, as a key group of top predators that will tell us about the condition of the wider terrestrial environment. This strategic approach to monitoring has also highlighted significant knowledge gaps for breeding seabirds, which are likely to be an increasing priority for the organisation in the future, particularly building upon our demographic schemes.

In the face of declining public sector funding, one of our greatest strategic challenges is to maximise the impact of our work. Whilst our research on farmland birds continues to receive ongoing public support, providing important evidence about the effectiveness of agri-environment scheme options, we have identified two other areas of significant potential that we will prioritise in the coming years. These are areas where we believe impartial BTO research can have a significant policy and management impact.

The first of these is the urban environment, where many bird species are in decline, and where there is the greatest potential for people to encounter biodiversity. The second is in the planning of new woodland, where new BTO research can help to maximise the benefit of these new woodlands for birds of conservation concern, while at the same time minimising potential conflict with declining open-country species.

Terrestrial Ecology

Challenges in funding work in this area remain significant, with the ongoing restrictions on government contracts and public sector funding. We have, however, continued to attract funding from Natural England/Defra and the Welsh Government, and it is through these contracts that BTO achieves some of its greatest impact, building on our strong external reputation.

The main area with government support is agri-environment monitoring, within which the BTO, in partnership with CEH, has secured a second year of work monitoring the landscape-scale impacts of the Countryside Stewardship scheme.

Year one produced promising results, including pilot work using passive acoustic monitoring to measure bat responses to management; this is being rolled out across six regions in 2018. The BTO is also leading consortia that have won bidding positions on Natural England framework agreements for monitoring both birds (with RSPB) and non-avian vertebrates (with Bat Conservation Trust and Amphibian and Reptile Conservation). In Wales, BTO is a partner in the new, CEH-led Environmental and Rural Affairs Monitoring and Modelling Programme (ERAMMP).

Farmland bird research is proceeding under the Farmland Appeal, including analysis of bird habitat selection with respect to detailed land-use, using local data collected by Nicholas Watts in Lincolnshire, field surveys of sacrificial bird seed crops to investigate the reported decline in seed crop quality, and GPS-tagging studies of Sparrowhawk use of farmland habitats. Papers are also now beginning to appear from the BiodivERsA project FarmLand, which developed and demonstrated key BTO capacity for multi-taxa monitoring in agricultural habitats, as part of an international consortium. A paper on pollination efficiency has been published in Proceedings of the Royal Society B and three more are close to submission. At the policy level, Gavin Siriwardena contributed to the British Ecological Society's Finding the Common Ground: a BES Agricultural Ecology Special Interest Group report about agricultural policy post-Brexit.

The NERC project 'Hydroscape', led by the University of Stirling, which is investigating the connectivity among freshwater systems and its influence on biodiversity and a range of other environmental parameters is continuing, with BTO currently contributing analyses of bird abundance, community composition and ecology.

Sound Approach Funding was secured to support analyses of available data on released gamebirds to investigate whether they have an impact on the spatial distribution and population trends of generalist predators, such as corvids. A detailed report was produced for the funders and the key messages have been distilled into a draft paper.

With the transfer of the research element of the JNCC partnership into a separate contract, BTO and CEH are working together to utilise the various taxon-specific monitoring datasets co-funded by JNCC. Two major strands of work have been developed: an extensive review of methods for predictive modelling of biodiversity responses to environmental and management change, and investigation of the interrelationships of invasive and native species, both within groups like birds and, more unusually, considering diverse pairs of species, such as Noctule bats and Ring-necked Parakeets. BTO also contributed to JNCC's Terrestrial Evidence Partnership of Partnerships meeting, which collated views on priorities for analysis and development of monitoring schemes.

In the urban context, a first paper using BTO data from NERC 'Urban BESS' project, led by Exeter, has been published in Journal of Applied Ecology, with BTO-led papers to follow, subject to funding. A generous gift in Jane Priest's will is supporting a novel project in the Birmingham area, in which Garden BirdWatch participants and other local garden owners, ringers and BTO staff are using colour-ringing and dedicated resighting to investigate movements of fed birds in and out of gardens.

A key area for impact of our urban work could be the planning sector, integrating BTO data and models into the planning process. We are working towards this via analyses of BTO data sets, as well as building our understanding of planning policy and engagement with the industry.

In grassland and heathland, a PhD project with Lancaster University investigating survival and productivity as drivers of Whinchat population change on Salisbury Plain has produced three papers and a fourth has been submitted. Research on Nightjar ecology and habitat use using GPS tagging has also continued into 2018, supported by collaborations with groups in Sweden and Belgium. A collaboration between BTO, and the Universities of Cardiff and Hasselt, Belgium, will investigate Nightjar diet through DNA analysis of faecal matter, examining differences between heathland and forest habitats. In addition, a novel combination of Nightjar GPS tracking and moth sampling data will be used to identify the relative importance of foraging locations and whether there is selection for certain moth prey species among habitats. BTO has continued to coordinate annual population monitoring at Lodgehilll SSSI in Kent, where a substantial housing development is proposed.

In Thetford Forest, the Forestry Commission-funded volunteer survey of breeding bird populations from 2017 adds to two previous such surveys, enabling analyses of the effects of forest management on population trends. As always, Thetford Forest work relies heavily on voluntary effort by BTO staff, but we have secured funding for analysing Willow Warbler diet using next generation DNA sequencing to find out how prey abundance is affecting population trends. The project will run alongside a geolocator study, which has been funded by donations and the Forestry Commission to investigate migration patterns.

Tagging projects on Tree Pipit, Buzzard and Goshawk continue. We would like to compare our data to a Scottish study and, using both data sets, examine mortality rates and known causes of mortality in juvenile Goshawks. A review of the opportunities and limitations for birds in European plantation forests was published as a book chapter in Ecology and Conservation of Forest Birds.

A three-year programme of work focusing on passerines in the upland margins started in 2017. Funded as two independent strands, one investigates the relative associations of species density and the abundance of key species with habitat and microclimate variables. The other strand continues ongoing survey of birds in naturally regenerating shrub woodland in the Highlands, spanning a period of 20 years. Both studies inform land use policy in the uplands, in particular targets for forest expansion and debates on 'rewilding'.

A first cohort of Short-eared Owls were tagged with GPS-satellite devices in May 2017 (thanks to Sound Approach funding) and continue to provide unprecedented detailed information on habitat use and movements through and between years. Subject to securing funding, further tagged cohorts are planned to inform conservation strategies for the species.

Population Ecology & Modelling

Under the new JNCC partnership, Breeding Bird Survey development work mainly focussed on methods for producing new short-term trends, enabling more species to be covered by the 2017 BBS report, investigating lowering sample size thresholds and the impact of single visits and visit timing on the trends produced. Work was completed on a manuscript investigating drivers of warbler population changes and a paper reporting 20-year trends in the extent and features of habitats, the latter based on the habitat data collected by BBS volunteers, accepted in the Journal of Nature Conservation. Maps of abundance and trend for mammals have received positive reviews from a journal and have been in high demand from conservation agencies and other academics. A paper on future projections of bird abundance in response to climate change was published in the journal Climatic Change.

The other aspect of our JNCC work, the Terrestrial Surveillance Development and Analysis task involved quantitative and qualitative analyses of the coverage of species, habitats and regions. A report, drafted with our collaborators CEH, was submitted to JNCC and included mapping of coverage for a broader range of schemes monitoring birds, butterflies, bats and plants.

Work funded by the Atlas Appeal has continued; one of the resulting papers, on urban features and bird populations, is being revised following submission to a journal. Other work on status changes are underway. A paper on non-native bird species and their likelihood of colonisation and spread in Britain was published in Bird Study. Atlas and BBS data were central to a short contract to Natural England assessing future range extent and abundance for Common Buzzards in England. A report was submitted to Natural England and a paper is in preparation.

Ongoing publication of work on climate change has continued, making use of BTO's long-running data sets and track-record of research in this area. Through collaboration, some of the statistical challenges in identifying impacts of climate change are highlighted by papers in the Journal of Agricultural, Biological and Environmental Statistics and Methods in Ecology and Evolution, and an overview of impacts of climate change on UK breeding birds was published in British Birds. Work on the challenges of assessing potential future impacts of climate change was published in Global Change Biology, whilst a BTO-led assessment of the potential risks and opportunities that climate change poses to over 3,000 species in England was published in Biological Conservation.

Bioacoustics monitoring work continues to develop on several fronts. A paper is nearing completion on the use of automated routines for identifying nocturnal birds from sound recordings, supported by the Sound Approach. A trial upload system for the transfer of sound recording from volunteers has been developed with funding from Natural England. Data from the South Scotland Bat Survey (funded by Scottish Natural Heritage) underpinned an assessment of the risk of potential wind farm impacts which has been published in Biological Conservation. The Norfolk Bat Survey completed its fourth year and is continuing to provide distribution information for bats and now also for Orthoptera (specifically bush-crickets). A contract was won to provide acoustic monitoring of bats in the North York Moors National Park.

Demographic Research

Ringing is a major tool used worldwide to estimate survival and other demographic parameters. Individually marking birds is the only way to measure key parameters like survival and longevity. Any effect of capturing wild birds on their individual welfare, or that of their wider populations, is an important ethical consideration; it also has significant implications for the integrity of the data collected, as biases may be introduced if capture and handling bring about changes in behaviour or survival. Ultimately, the benefit of the information accrued when capturing wild animals for study needs to outweigh the potential risk to individuals that are caught.

While the potential effect of fitting rings or other devices to birds has been assessed previously, through a series of reviews and studies, the direct effects of the capture methods themselves have received less attention. We undertook an assessment of the impacts of mist-netting for birds as part of the British and Irish Ringing Scheme. Factors which may influence the likelihood of mortality were also investigated, facilitating improved guidance for those operating mist-nets to capture wild birds. Overall mortality rates were low with most fatalities reported to have occurred before individuals had been extracted from the nets. We will use the results from this study to help to refine guidelines for those trapping and handling wild birds, and identify additional opportunities to secure information that could be used to better understand risk factors and associated mortality. The results were published in the open access journal Ecology & Evolution and shared with other European ringing schemes to help ensure they have the widest benefit.

Many factors influence survival and one the BTO is increasingly working on, with others, is the role that disease plays in causing population change. The BTO Garden BirdWatch team has been capturing both systematic and opportunistic records of disease incidence in birds (and other taxa) through the Garden Wildlife Health scheme. One of the latest pieces of work to arise from this invaluable dataset is a review of the potential disbenefits of providing food for wild birds at garden feeding stations through increased risk of disease transmission; this was published in Philosophical Transactions of the Royal Society B, generating a high media profile for BTO and its partners. Disease research typically focuses on novel, emerging diseases, but this review highlights the importance of ongoing surveillance in understanding the consequences that such outbreaks have population status.

A key area of demographic research at BTO continues to be phenological disjunction, whereby climate-mediated advances in the emergence of invertebrate populations has exceeded that of avian laying dates, resulting in nestling food shortages and subsequent productivity declines that have the potential to influence population trajectories. Work by Sam Franks and others, published in Global Change Biology, used data on the spring phenology of 280 plant and insect species and the egg-laying dates of 21 British songbirds extracted from the Nest Record Scheme, to determine the degree of asynchrony between bird populations and the timing of emergence of lower trophic levels. This unique multi-taxa dataset was available thanks to a collaborative, NERC-funded, project involving a consortium of NGOs and conservation bodies led by CEH. Bird species that advanced their laying dates least over the last three decades, and were therefore at greatest risk of asynchrony, exhibited the most negative population trends. Contrary to expectations breeding success, as measured by the ratio of juvenile to adult captures at Constant Effort Scheme sites, was not strongly related to the annual fluctuations in asynchrony for either residents or migrants. Those species exhibiting the greatest sensitivity to asynchrony were, however, those exhibiting the most negative population trends; this suggests that disjunction may have population level impacts but that these are mediated through reduced recruitment or adult survival following poor seasons, rather than via declines in productivity.

Another disjunction study utilised Nest Record Scheme laying date and productivity data for tit species and Pied Flycatcher, in combination with data on oak and caterpillar phenology, to quantify latitudinal trends in phenological mismatch across the UK. While asynchrony between peak caterpillar biomass and peak nestling demand increases during warm springs, there was no evidence that it varied spatially, suggesting that it is not the mechanism responsible for observed spatial variation in population trends of these species. Other recent uses of the Nest Record Scheme dataset include investigations into the defining characteristics of Cuckoo host species and the impact of pesticides on avian breeding success.

BTO staff have also been working on ways to improve the quality of the information derived from Nest Record Scheme data, specifically exploring ways in which the variability in the detectability of nests through the breeding cycle can be accounted for, enabling the production of unbiased nest survival rates. Models developed by BTO researchers were trialled in a case study, exploring Blackbird breeding success across different habitats and demonstrating that survival in suburban habitats was higher than that in either urban or rural areas.

The successful launch of Demography Online (DemOn), represents a significant investment for the volunteer network that has been collecting demographic data across a broad range of species. DemOn delivers a web-portal through which volunteers can enter, manage and report on the data collected. Further investment will see this landmark project continue to develop through into 2018–19.

Wetland & Marine Research

During the past year, there has been further development of BTO's wetland and marine research programme, in parallel with developments in monitoring. A potential alternative approach to seabird monitoring, drafted by BTO, was presented at a Seabird Monitoring Programme (SMP) Steering Group meeting and will be used as a framework for a forthcoming JNCC-led review. BTO scientists have also been working with JNCC and other partners in developing a new database for the SMP, which has been well-received by partners. BTO has also provided further support to the progression of the JNCC-led national Seabird Census ('Seabirds Count') which is running from 2015 to 2019. In relation to this, the BTO is undertaking a pilot urban gull survey on behalf of Defra in 2018 and 2019 to assess different survey methods, in order to determine how best to produce robust population estimates of urban breeding gulls as part of the census.

Our marine research programme has had a continuing focus on renewables. Two papers have been published this year from our projects for the Department of Energy and Climate Change — now the Department for Business, Energy and Industrial Strategy — Offshore Energy Strategic Environmental Assessment research programme, assessing the interactions of Lesser Black-backed Gulls from Special Protected Areas (SPAs) with offshore wind farms through GPS tracking. Work at South Walney (Morecambe Bay and Duddon Estuary SPA) and adjacent urban Barrow is continuing through funding from Ørsted, in relation to their recently consented offshore wind farms sites. Related tracking work on Lesser Black-backed Gulls at the Bowland Fells and Ribble and Alt Estuaries SPAs has again been funded by Natural England.

A NERC-funded PhD building on these tracking studies being led by the University of Exeter and in conjunction with Natural England began in autumn 2016. Building on a programme of gull tracking projects already mentioned, a new project has been funded by NERC on "Monitoring and Forecasting Avian Collision Risk at an Operational Offshore Wind Farm". BTO Scotland is also supporting a further NERC-funded PhD, looking at the breeding ecology of Lesser Blackbacked Gulls. Also in Scotland, 12 Arctic Skuas have been tagged as part of a project, funded by Major Donors, to look at breeding season foraging trips and migration.

Our advisory work on offshore wind farms has also continued this year. Following work for JNCC, a paper examining the modelling approaches used to examine the potential effects of offshore wind farms on marine bird populations has been published in the Journal of Environmental Management. Through funding from the Cambridge Conservation Initiative, we have extended our work on renewable energy more widely. A global review of the vulnerability of bird and bat species to collision mortality with wind farms, published in Proceedings of the Royal Society Series B, identifies the most vulnerable species to collision, and where such species are concentrated. A global assessment of the future land area likely to be required for different renewable energies, and its potential impact, from the same project, has been submitted for review.

A first paper produced with funding from the Curlew Appeal has been published, assessing causes of the species' decline in Britain and providing the first overview of likely key factors. The wider programme includes work with local study groups who are monitoring Curlew populations, which will inform strategic development of our wider work on breeding waders.

Monitoring Research

BTO continues to provide updated population estimates for breeding and wintering birds in the UK to JNCC. Work being carried out under the BBS and WeBS programmes supports JNCC's delivering of this and other information to the European Commission under Article 12 of the Birds Directive. BTO has also contributed to the assessment of threats, pressures and conservation measures, and will subsequently provide updated population trends and other supporting information.

The UK and England wild bird indicators for farmland, woodlands, wetlands, marine and wintering waterbirds, were updated in November 2017, and the Scottish Terrestrial Breeding Bird indicator in December. A Welsh indicator, including a long-term assessment based on the Bird Atlas 2007-11 results will be included in the next State of Birds in Wales to be published in July 2018.

BTO was responsible for developing the Monitoring Guidelines for use by the successful candidates for projects funded under the CCI's Endangered Landscape Programme (ELP) and led a workshop on monitoring as part of stage 3 of the application process. ELP is funding 10 projects on large-scale landscape restoration across Europe, each expected to have transformational societal as well as biodiversity and ecosystem service impacts.

The European Breeding Bird Atlas project continues, and BTO has submitted collated breeding evidence records at the 10-km level for use by the team analysing patterns of relative abundance across Europe. Work is continuing to validate a wider range of data collated at the 50-km resolution for producing the maps.

Funds raised by the BirdTrack Appeal have enabled us to develop methods that can account for spatial biases in the BirdTrack data set; such knowledge can then be used to determine the extent to which BirdTrack data can be used to generate reliable distribution maps. The resulting paper will be submitted in summer 2018.

Work to support the Non-Native Species Information Portal has continued, with updates of the species registry and factsheets, responding to alerts on non-native species of concern, and planning for the next horizon-scanning exercise for key threats.

The appeal for Project Owl was launched in autumn 2017 to help fund an exciting and ambitious programme of research work, planned for the next few years. Appeal funds raised so far will allow us to run a national Tawny Owl survey in 2018/19, with two distinct components. The first of these is a structured survey, following methods used in 1989 and 2005, and enabling us to assess population change. The second component will provide us with information on the calling pattern of Tawny Owls through the autumn and winter, and provides an opportunity for wider engagement. We also plan to support existing ringers and nest recorders working on owl projects, and to engage new volunteer networks. Depending on resources available, it is a strong aspiration to continue work on Short-eared Owls in Scotland, and to undertake more work on Long-eared Owls in Northern Ireland.

Analysis of the 2015 House Martin Survey has been completed and a paper has been drafted ready for submission. Analysis of the 2016 and 2017 House Martin Nest Monitoring Study will be undertaken shortly and it is hoped this will help us to understand more about regional differences in the trends of this species.

International Research

The International team welcomed an additional staff member, Dr Mark Miller, into the team this year. Mark is an expert spatial analyst and is analysing the spring movement patterns of the satellite-tagged Cuckoos in relation to rainfall and the 'greening up' of vegetation in West Africa. The long-term nature of the Cuckoo tracking is opening up possibilities to analyse movement data in ways that are not possible with only short-term deployments.

The team continues its research on the migration and movements of Afro-Palearctic migrant birds using a variety of tracking technologies and supporting higher education at the Universities of Cape Coast in Ghana and the A P Leventis Ornithological Research Institute in Nigeria. Several papers were published on this work on Whinchats, Pied Flycatchers and a methodological paper concerning analysis of geolocator data.

BTO's collaborative Masters programme with the University of Cape Coast and the A P Leventis Ornithological Research Institute (APLORI) continues. Students spend a year at APLORI on a taught one-year MSc course and then return to UCC to undertake a one-year research project which will allow them to upgrade to an MPhil degree. BTO staff teach on undergraduate Ornithology course and co-supervise projects.

Movetech Telemetry

The main project this year was transferring the manufacture of our Movetech Telemetry tracking devices to Porzana's premises. A new clean area was created in the ring making factory. Two staff at Porzana were trained in making devices and production was transferred to Porzana in January 2018. Our website www.movetech-telemetry.com was launched and our product line was consolidated into four main types of tags for birds. Development of new products continued in collaboration with our partners at the Universities of East Anglia, Lisbon and Porto and Movetech Telemetry was nominated for a UES Outstanding Commercialisation of Technology award.

Combined Ecology

Within the wider work of Combined Ecology, we continued to focus on renewables and finished off projects in Sierra Leone and Ghana. Africa continues to be a focus for us and a new project was started in Djibouti in 2017. Combined Ecology has a lot of expertise in this region and our portfolio of work there is growing. Given our experience over the past few years, the business plan was revisited and refreshed and a more formal management structure put in place to drive the business forward. In 2018/2019, there will be a stronger focus on marketing the expertise of our staff and subcontractors, to develop more work and to grow the business.

2. Share data, information and knowledge through excellent engagement

BTO continues to be one of the world leaders in creating rigorous but engaging and popular citizen science initiatives, leading to the generation and onwards use of millions of biological records. The scale and range of our surveys and schemes mean we need to maintain excellence in our approaches to both data capture and data provision.

The major achievement of the year was the long-awaited launch of Demography Online in the autumn. This major new system allows ringers and nest recorders to enter their data and to manage and extract it. This has been a substantial piece of work which provides a sound foundation, underpinning the Ringing and Nest Record Schemes for many years.

Our key system for collating birders' observations and lists, BirdTrack, continued to be prominent during the year, amassing another 6.2 million observations, including over 125,000 that were submitted for 105 countries outside the core area of Britain and Ireland. About 21% of BirdTrack data is submitted via the phone apps. Meanwhile, on the core BirdTrack website, development work has focused on a new interactive home page and an advanced system to manage verification queries and other communication between users and county bird recorders, all related to the aim of bringing together the separate old ('domestic') and new ('global') systems into one website. Additionally, work has continued behind the scenes in the exciting collaborative project EuroBirdPortal, which presents BirdTrack data alongside records collected by similar schemes in other European countries; work is now well advanced in enabling automated live flow of records from BirdTrack to EuroBirdPortal.

The data management systems underpinning BBS and WeBS continued to function smoothly. BBS and BirdTrack data, in particular, were also extracted, summarised and carefully checked before providing the UK contribution to the second European Breeding Bird Atlas, a really exciting project that will, amongst other things, include maps involving the best ever coverage of European Russia. Further work was undertaken to enable closer links between GBW and disease reporting for the Garden Wildlife Health initiative. Further development of a Seabird monitoring interface was carried out on behalf of the Seabird Monitoring Partnership. We also continued to develop the infrastructure required to manage volunteer bat surveys — an important investment for the future given the increasing potential for automated recognition of wildlife sounds and the large data volumes that may result.

The BTO continued its close working relationship with the National Biodiversity Network (NBN). In particular, we have worked closely with the NBN community on displaying levels of data quality on the NBN Atlas and exploring issues around the commercial use of volunteer-collected data. Related to NBN, BTO was also heavily involved in a review of biodiversity data infrastructure led by the Scottish Biodiversity Information Forum (SBIF); a significant report on the findings of this review should be made public in 2018-19.

Delivering a strong core

Away from the public-facing work undertaken, two very significant business systems involved a large amount of development behind the scenes during 2017-18. The majority of the work required to replace BTO's membership and customer-relationship database was carried out. The new system, CiviCRM, was developed in conjunction with an external consultancy. Because of the particularly complex requirements of BTO, close integration with the scientific database and with the BTO website, this project has also involved significant input from our IS team, together with others from across the organisation. Aspects of the implementation of this system were affected by a developing understanding of the requirements of the new General Data Protection Regulations, enabling us to implement a system which should be future-proofed in terms of data protection.

Replacement of BTO's Project Management System was driven forward; a careful consideration of the pros and cons of potential systems led to the selection of Microsoft Project as our preferred option; the majority of the work required to implement this system was completed on schedule by the end of the financial year.

Funds raised through the Make Our Science Count Appeal have enabled us to undertake important work in conjunction with the external agency Headscape, ahead of a major re-design of the website; this will be a major feature of our work in 2018-19.

Social media has seen continued growth in reach with, for example, our Twitter following increasing by 18.8% over the year to reach 75,661 followers at 31 March 2018, delivering 15,474,875 organic impressions and 397,028 total engagements. Social media is used both for direct engagement and for directing engagement towards our website; during the period we saw 53,270 link clicks taking users through to directed content. Our Facebook following stands at 23,729 fans, an increase of 7.64% over the period. Recognising the importance of social media, we will be creating a new Social Media Manager post in 2018-19, bringing responsibility for developing our social media strategy into a recognised post.

The Demog Blog and the Migration Blog continue to be successful, both in terms of followers and in providing great content for our social media and web presence. A new BTO Blog will launch in 2018-19, alongside the relaunched BTO website. Our list of Bird ID videos continues to prove very popular on our YouTube channel, with the total views now exceeding 2.7 million. We have recently added a series of project-specific videos, the latter including contributions from Nick Baker, Iolo Williams and Chris Packham promoting our What's Under Your Feet project with EDF Energy.

Media communications continue to play a significant role in promoting the BTO and its work, with the organisational changes made reflecting its importance to our strategic objectives. Mike Toms took over the role of Head of Communications and he has been working with other teams within the organisation to develop opportunities for promoting their work. Print and broadcast media continue to be particularly important for the organisation; in recognition of this, more effort is being put in to support the wider BTO staff in promoting their work.

Two BTO Research Notes published during the year underline the contribution that BTO expertise is making to work on other taxa. The first of these highlights the willingness of participants in BBS to collect information on other wildlife, with information on Red Deer and Roe Deer abundance and abundance change being reported for the benefit of those making decisions about land and deer management policies in Scotland. The second shares the knowledge gained through the Norfolk Bat Survey, refining methods for the production of robust national population trends.

The substantial changes made to BTO News, our Annual Review, Bird Table and Life Cycle magazine have been well-received and have helped to achieve our objective for delivering improved products, that are better targeted and more accessible. During 2018–19 we will review these products, seeking to identify further refinements.

Communicating our impact through new audiences

Our involvement in Bird Photographer of the Year was rewarded with a significant upturn in media coverage around the competition, also helping to reinforce the 'Inspired by Birds' component of our new strapline. The third year of the competition saw significant growth in our North American audience — a market that is likely to expand — and attracted interest from potential new partners. We are particularly grateful for the significant support being given to the competition by Chris Packham and the other judges.

Bird Photographer of the Year, Collection Two, was published in August, at the same time that the BTO/SWLA Flight Lines book made its appearance. The latter is another output from the very successful partnership with the Society of Wildlife Artists, the book bringing together the art produced during the project alongside a narrative by Mike Toms about the BTO's work on migrant birds. This project has helped to support our longer term work on migrant birds, being delivered through one of our key Focal Areas. The project also received additional profile through a dedicated art exhibition in Scotland in late 2017-18, with another exhibition taking place in East Anglia in early 2018-19.

The wider Flight Lines project has been instrumental in developing the BTO's science, arts and culture agenda, which has positioned us well with other organisations and has led to a number of new opportunities. We have been ahead of the curve in this area and are seeing the wider benefits of the investment that we have made.

Another successful partnership has been our work with a number of conservation organisations based in Norfolk and Suffolk. BTO has tended to underplay its presence within Breckland, where its headquarters is located, and over the last year we have invested effort in local initiatives – through a series of talks and events at The Nunnery and through participation in the Norfolk Festival of Nature – and partnerships. One of the partnership initiatives has been the development of a series of accessible pocket guides to the wildlife of the Brecks. Produced in association with The Breckland Society, Norfolk Biological Records Centre, Norfolk & Norwich Naturalists' Society, Suffolk Naturalists' Society and Suffolk Biological Records Centre, these guides should increase engagement with the area's wildlife and with the survey and monitoring schemes that take place here. The first two guides were published in 2017-18, with two more planned for publication in 2018-19.

A new and completely revised version of the BTO Nest Box Guide – titled 'Nestboxes – Your Complete Guide' – was published early in 2018. This very different looking and more accessible version was only possible because of the generosity of Graham Evans and Jacobi Jayne & Company, who funded the venture and managed delivery.

3. Enthuse and encourage our people

In 2017, volunteers contributed approximately 1,625,901 hours of time to BTO work at an estimated monetary value of £33 million. BirdTrack and GBW volunteers contributed over 300,000 hours to each scheme while volunteers undertaking ringing and nest recording contributed more than 700,000 hours. We are eternally grateful for the generous contributions our volunteers make of their time, skills, knowledge and enthusiasm, BTO could not operate without them.

Membership continued to grow in 2017 although at a slower rate than we have seen in recent years. We ended 2017 with a total of 19,216 members, an increase of 1% over last year. The loyalty of our members is extraordinary with, on average over the last five years, over 92% staying with us through renewal. Our highest areas of growth are in Joint Memberships and in Young Birders – increasing by 6% and 50% respectively. We are looking at ways we can improve the member experience and held our first 'Spring Members Day'.

Recruitment to GBW has been strong with 818 new participants recruited in 2017. We reached a wide audience through our work with the Zoological Society of London and other partners on the Garden Wildlife Health Project following a health review paper and associated press. We are looking forward to capitalising on this momentum and raising our profile further in the year ahead, especially through our partnership with Gardman Ltd, the UK's leading garden product supplier.

Twenty-eight training courses were delivered as part of our core one-day and residential training programme covering BTO surveys, bird survey techniques for environmental and ecological professionals, and bird identification. These courses were delivered by our Training Manager and a team of six external trainers, and were attended by 284 people. The second BTO Bird Camp was held at the Nunnery and was attended by 23 young birdwatchers. This recently-established annual event, which is made possible through funding from the Cameron Bespolka Trust and Bird Photographer of the Year, aims to inspire young birders about birds, ornithology and BTO's work.

BTO Cymru held five engagement events aimed at existing, and potential members and volunteers which were attended by 104 people. A joint engagement day was held with the Snowdonia National park, focused on BirdTrack. The Glamorgan volunteer Regional Network team of Wayne Morris and Daniel Jenkins Jones continued to champion nest recording; they ran another successful nest monitoring training day and contributed inspiring and popular presentations at various conferences.

The Welsh Ringers' conference was held in Powys and was oversubscribed; we plan to repeat the event on a three-year cycle. The Welsh Ringing course at Oxwich NNR was fully booked. A pilot mist net repair and building seminar was held at Bangor University and was attended by 10 ringers. BTO Cymru had a presence at a number of events across Wales, including the Royal Welsh Spring Show, the main Royal Welsh Show, and two events during Welsh Biodiversity week. The joint Welsh Ornithological Society/BTO/RSPB conference was held at Monmouth with Mike Toms speaking on BTO's behalf.

At BTO Northern Ireland, Shane Wolsey continued as BTO NI Officer, while the role of NI Seabird Coordinator moved from Kerry Leonard to BTO's new Scientific Officer, Katherine Booth Jones, all funded by the continuation of a grant from the Environment Fund. The annual NI programme of training opportunities for volunteers continued, with four BBS courses, two GBW days, and a WeBS training event (with a total of 67 participants). The NI Seabird Network of volunteers continued to grow (75 participants) and the 2017 NI Seabird Report was published in March 2018, with a launch event sponsored by Ards and North Down Borough Council. The number of volunteers involved in the NI Heronries Survey increased to 55 under the stewardship of Ian Enlander as the voluntary NI coordinator. Volunteer coverage of BBS squares increased to 76, the second best ever achieved in NI, and enabling trends (long- and shorter-term) for 37 species.

The Annual BTO NI Conference was particularly popular with Ian Newton being a key speaker (155 delegates; 30% from the Republic of Ireland), attracting many volunteers, members and other supporters, as well as biodiversity professionals. Ards and North Down Borough Council (ANDBC) continues to support BTO through its hosting of the Cockle Island Seabird Centre (a partnership project with National Trust, BTO and ANDBC), its sponsorship of two GBW workshops, and its hosting of the launch of the 2017 NI Seabird Report. A 'Musical Geese' project involving the tracking of greylag geese from the Shankill area of Belfast unfortunately has been postponed from an early 2018 start, to early 2019. BTO continues to engage with AFBI on potential work that will be funded by the EU INTERREG VA programme through the MARPaMM project (the successor to the original BTO-led SeaFate partnership project). Katherine Booth Jones coordinated a number of activities/visits to raise BTO's science profile in NI: working in liaison with Gavin Siriwardena and CEH to help NIEA/DAERA to consider options for future agri-environment monitoring in NI; liaising with John Calladine and visiting the Forest Service and Woodland Trust to discuss collaboration over forest research; and with Niall Burton visiting a range of relevant organisations in both NI and RoI to discuss marine and wetland research possibilities.

BTO Scotland continued with its programme of volunteer training events in spring 2017, prioritising areas in which additional volunteers were most needed. Low-cost courses (£5) were held in Argyll, Kincardineshire, Benbecula, Lewis, Sutherland, Ayrshire and in Fort William (West Highlands). Full-cost courses were held in lower priority areas and/or with a primary focus on bird identification (Renfrewshire, East Lothian, Borders, Lanarkshire, Moray and Aberdeenshire). In addition, two autumn training days were held in the Lanarkshire and Central regions, encouraging participation in WeBS. More than 20 new GBW members were recruited at Gardening Scotland. A team from BTO Scotland attended the SOC Annual Conference, leading guided walks and providing an information stall. BTO Scotland made further progress with work to encourage new groups to get involved in bird monitoring, through: a key staff role in the Yorkshire Dales wader monitoring project; development of a similar wader productivity monitoring project with the East Cairngorms Moorland Partnership and Cairngorms National Park Authority; and, longer-term, by maintaining a role in the Working for Waders stakeholder initiative.

An ambitious project proposal to engage new volunteers in waterways monitoring was unfortunately not successful, but alternative funding sources are being explored. More than 20 talks were delivered to SOC, RSPB and other groups, mostly by Ben Darvill, with the help of John Calladine, Mark Wilson and Liz Humphreys. The Scottish Birdwatchers' Conference was held in March 2018 in Dumfries (organised jointly with the SOC) and attracted over 200 attendees. The 2019 conference will be held in Oban, with BTO Scotland taking the lead. During the year, BTO Scotland staff played a leading role in work to first understand the extent of under-representation of upland habitats within the BBS sample, and then to develop possible interventions. Spring 2017 saw the launch of the pilot BBS Upland Rovers scheme, and an autumn review concluded that the scheme should continue in 2018. Engagement work in Scotland in spring of 2018 was principally focused on promoting this scheme, with upland-themed training courses held in Fife and Lanarkshire, and further courses planned for April and May in Argyll, Grantown-on-Spey, Glen Affric and Fort William.

Improving our long-term resilience

Thanks to a grant from the Heritage Lottery Fund we worked with the John Cass Business School Centre for Charity Effectiveness on an Organisational Review aimed at improving our long-term resilience. A major success of this work was the achievement of a new vision which provides us all with a greater sense of common purpose. The refreshed vision, mission, goals and priorities have been expressed through a simple strategy map which is now in regular use, linked with organisational, team and individual objectives. The recommendations arising from the review have shaped our decisions during the year and will continue to influence our direction in the coming years.

Following on from the organisational development work and the appointment of our first dedicated HR Manager, the people strategy has focused on three priority areas for our staff:

Collaborative culture: A new style staff meeting was introduced, providing staff with management and organisation updates but also engaging them in key development areas through cross team working groups (subject areas including, performance management and engagement). This also has the benefit of increasing conversation, sharing and learning from each other. Staff were engaged in discussions on improving internal communications and provided feedback on a new newsletter and intranet, this work will be developed in 2018-19.

Enhanced performance culture: Based on recommendations from the review and follow-up consultations with staff, a new performance management framework was developed and launched. This is the first step in achieving a consistent performance management approach, describing what staff can expect and what we needed from our managers. At this stage the objective is to get all managers and staff having constructive 1:1 discussions on a regular basis to form a continuing performance development process. This work was supported by delivery of performance management sessions with 30 line managers. Staff feedback will inform the next steps, including, establishing line manager peer support networks, to enable line managers to share people management experiences and learn from each other, and to develop an internal mentoring scheme.

Improved approach to health and wellbeing: We have increased resources for staff and managers on health and wellbeing and reminders about the Employee Assistance Programme. A priority for 2018 is to provide more mental health awareness development so managers and staff are equipped with the knowledge and confidence to have conversations at work.

Alongside our strategic objectives there have been developments in operational HR, such as enhancing pensions information for staff, improvements to processes, such as the job evaluation scheme, safeguarding, internal HR data management, and increased networking with HR professionals to ensure we are learning from others and identifying opportunities for collaboration.

Improvements to our systems and processes mentioned elsewhere are all also contributing to our longer-term resilience, as are adjustments to the way we are governed.

4. Grow our financial independence

In line with the strategy, voluntary income increased from 38% to 44% of total income, and income from publicly funded work decreased from 34% to 32%. Consultancy income however reduced from 12% to 5% of total income, an exceptionally poor year having followed an exceptionally good one, so that income from commercial trading overall fell from 22% to 18% of total income.

Financial Review

The principal sources of funds continued to be contract research, membership subscriptions, individual donations and legacies. A total of £4,529k was spent during the year on carrying out, supporting and communicating ornithological research. A marked reduction in science contract cost recovery and commercial work resulted in a deficit before investment gains of £151k. There was a small increase in the final salary pension scheme deficit, but the periodic revaluation of The Nunnery freehold resulted in a £743k gain.

Reserves

The Board has an unrestricted free reserves target range of 9 to 12 weeks' operating expenditure. These reserves are held against any unexpected falls in income or other unforeseen circumstances. Unrestricted funds excluding tangible fixed assets and the pension fund liability at 31 March 2018 totalled £911k, equivalent to 8 weeks' expenditure. The Board plans to bring the reserves back to target by the end of financial year 2021/22.

Principal Risks and Uncertainties

The trustees consider that the principal risks and uncertainties which could affect BTO's ability to deliver its objectives in the next year and beyond are further public expenditure reductions leading to reduced contract, grant and partnership funding, and in the medium to long term, the final salary pension scheme deficit. Both of these are able to be coped with through the growth strategy.

Plans for future periods

The programme of Modernisation and Development has set a new unifying common purpose, *Inspired by birds, informed by science*. This reflects a change in the culture of the organisation, making clear the integrated nature of our offer on engagement and science together, and enabling us to demonstrate impact to decision-makers and society. The three organisational goals referred to previously are now very much embedded:

- 1. Enable more people to learn and grow through participation in environmental delivery;
- 2. Deliver impartial and impactful science;
- 3. Inspire and empower people with an understanding of birds and the importance of knowledge.

We have identified a small number of priority programmes which, across the business, drive direction and deliver our common purpose:

Enabling others

- Developing a more strategic approach to monitoring and engagement opportunities; Project Owl and seabirds
- Undertaking market research and product development
- Developing a new supporter acquisition programme

Science

- Addressing declining species groups: Afro-Palaearctic migrants and breeding waders
- Developing tools to inform decision-making: informing urban planning and new woodland planting

Inspiring people

- Developing a new website
- Refreshing and improving online information about birds
- · Reviewing and demonstrating our impact

Firm foundations

- Developing the HR strategy and culture
- Growing income from individuals, Trusts & Foundations, and commercial contracts
- Embedding new customer relations application, and responding to GDPR
- Adopting new budgeting, forecasting and costing models
- Establishing modern governance arrangements.

These priorities bring together the unique elements of BTO – the volunteers who provide the data from which we build world-class science. We are committed to improving the communication of our knowledge for wider societal benefit.

Statement of Board Members' Responsibilities

The Board members are responsible, as Directors of the Company, for preparing the Annual Report (including the Strategic Report) and the financial statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice).

Company law requires the Board members to prepare financial statements for each financial year, which give a true and fair view of the state of affairs of the charitable company and the group at the year end and of the incoming resources and application of resources, including the income and expenditure, of the charitable company and the group for the year. In preparing these financial statements, the Board members are required to:

- select suitable accounting policies and then apply them consistently;
- observe the methods and principles in SORP 2015 (FRS 102);
- make judgements and estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements;
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the charitable company and the group will continue in operation.

The Board members are responsible for keeping adequate accounting records that disclose with reasonable accuracy at any time the financial position of the charitable company and enable them to ensure that the financial statements comply with the Companies Act 2006, the Charities and Trustee Investment (Scotland) Act 2005 and the Charities Accounts (Scotland) Regulations 2006 (as amended). They are also responsible for safeguarding the assets of the charitable company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Board members are responsible for the maintenance and integrity of the corporate and financial information included on the Trust's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

In so far as the Board members are aware:

- there is no relevant audit information of which the Trust's auditor is unaware; and
- the Board members have taken all steps that they ought to have taken to make themselves aware of any relevant audit information and to establish that the auditor is aware of that information.

Auditor

Following a re-tendering process during 2018 a proposal to appoint auditors will be made at the Annual General Meeting under section 485 of the Companies Act 2006.

The Trustees' Report (incorporating the Strategic Report) was approved by the Board as Directors and Trustees and authorised for issue on 10 July 2018.

Professor J A Gill Chairman I Packer Honorary Treasurer

Independent Auditor's Report to the Members of The British Trust for Ornithology

Opinion

We have audited the financial statements of The British Trust for Ornithology (the 'parent charitable company') and its subsidiaries (the 'Group') for the year ended 31 March 2018 which comprise the Consolidated Statement of Financial Activities, the Charity Statement of Financial Activities, the Consolidated Group and Charity Balance Sheets, the Consolidated Statement of Cash Flows, and notes to the Consolidated Accounts, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting FRS 102 "The Financial Reporting Standard applicable in the UK and Republic of Ireland" (United Kingdom Generally Accepted Accounting Practice).

In our opinion the financial statements:

- give a true and fair view of the state of the group's and the parent charitable company's affairs as at 31 March 2018 and of the group's and the parent charitable company's incoming resources and application of resources, including its income and expenditure for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Companies Act 2006, the Charities and Trustee Investment (Scotland) Act 2005 and regulations 6 and 8 of the Charities Accounts (Scotland) Regulations 2006 (as amended).

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the group and parent charitable company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the Financial Reporting Council's (FRC's) Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions relating to going concern

We have nothing to report in respect of the following matters in relation to which the ISAs (UK) require us to report to you where:

- the trustees' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate;
- the trustees have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the group's or parent charitable company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

Other information

The trustees are responsible for the other information. The other information comprises the information included in the Trustees' and Directors' Report, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

Independent Auditor's Report to the Members of The British Trust for Ornithology - Continued

Opinion on other matter prescribed by the Companies Act 2006

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the Strategic Report and the Board Report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the Strategic Report and the Board Report have been prepared in accordance with applicable legal requirements.

Matters on which we are required to report by exception

In the light of our knowledge and understanding of the company and its environment obtained in the course of the audit, we have not identified material misstatements in the Strategic Report and the Board Report.

We have nothing to report in respect of the following matters where the Companies Act 2006 and the Charities Accounts (Scotland) Regulations 2006 (as amended) require us to report to you if, in our opinion:

- adequate accounting records have not been kept by the parent charitable company, or returns adequate for our audit
 have not been received from branches not visited by us; or
- the parent charitable company's financial statements are not in agreement with the accounting records or returns; or
- certain disclosure of trustees' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

Responsibilities of Board Members

As explained more fully in the Statement of Board Members' Responsibilities set out on page 19, the trustees (who are also the directors of the British Trust for Ornithology for the purposes of company law) are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the trustees determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the trustees are responsible for assessing the group's and parent charitable company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the trustees either intend to liquidate the group or the parent charitable company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of financial statements is located on the FRC's website at www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

This report is made solely to the charitable company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and to the charitable company's trustees, as a body, in accordance with section 44(1) (c) of the Charities and Trustee Investment (Scotland) Act 2005 and regulation 10 of the Charities Accounts (Scotland) Regulations 2006 (as amended). Our audit work has been undertaken so that we might state to the charitable company's members and its trustees those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the charitable company, the charitable company's members as a body and its trustees as a body, for our audit work, for this report, or for the opinions we have formed.

Bankside 300, Peachman Way, Broadland Business Park, Norwich NR7 OLB Mark Proctor FCA DChA (Senior Statutory Auditor)
For and on behalf of Lovewell Blake LLP, Statutory Auditor
Date:

The British Trust for Ornithology Consolidated Statement of Financial Activities (Including Income and Expenditure Account) for the Year Ended 31 March 2018

	Note	Unrestricted Funds £'000	Restricted Funds £'000	Total 2018 £'000	Total 2017 £'000
Income and endowments from:					
Donations and legacies	3	2,127	383	2,510	2,471
Charitable activities	3	2,171	2	2,173	2,557
Other trading activities	3	1,057	-	1,057	1,433
Investments	3	1	-	1	1
Total income and endowments		5,356	385	5,741	6,462
Expenditure on:					
Raising funds	4	1,243	27	1,270	1,411
Charitable activities	4	4,051	478	4,529	4,709
Other – Net interest on defined benefit pension plan liability	21	93	-	93	98
Total expenditure	7	5,387	505	5,892	6,218
Net income/(expenditure) before gain/(loss) on investments		(31)	(120)	(151)	244
Net gains/(losses) on investments	10	2	-	2	96
Net income/(expenditure)		(29)	(120)	(149)	340
Transfers between funds	16,17	(71)	71	-	-
Other recognised gains/(losses): Gains on revaluation of fixed assets Remeasurement (loss) on		743	-	743	-
defined benefit pension plan	21	(162)	-	(162)	(571)
Net movement in funds		481	(49)	432	(231)
Reconciliation of funds					
Total funds brought forward		(1,160)	797	(363)	(132)
Total funds carried forward		(679)	748	69	(363)

The Statement of Financial Activities includes all gains and losses recognised during the year. All income and expenditure derives from continuing activities.

The British Trust for Ornithology Charity Statement of Financial Activities (Including Income and Expenditure Account) for the Year Ended 31 March 2018

	Note	Unrestricted Funds £'000	Restricted Funds £'000	Total 2018 £'000	Total 2017 £'000
Income and endowments from:					
Donations and legacies	3	2,600	383	2,983	3,097
Charitable activities	3	2,085	2	2,087	2,454
Other trading activities	3	412	-	412	460
Investments	3	1	-	1	1
Total income and endowments		5,098	385	5,483	6,012
Expenditure on:					
Raising funds	4	985	27	1,012	961
Charitable activities	4	4,051	478	4,529	4,709
Other – Net interest on defined benefit pension plan liability	21	93	-	93	98
Total expenditure	7	5,129	505	5,634	5,768
Net income/(expenditure) before gain/(loss) on investments		(31)	(120)	(151)	244
Net gains/(losses) on investments	10	2	-	2	96
Net income/ (expenditure)		(29)	(120)	(149)	340
Transfers between funds	16,17	(71)	71	-	-
Other recognised gains/(losses): Gains on revaluation of fixed assets Remeasurement (loss) on		743	-	743	-
defined benefit pension plan	21	(162)	-	(162)	(571)
Net movement in funds		481	(49)	432	(231)
Reconciliation of funds					
Total funds brought forward		(1,160)	797	(363)	(132)
Total funds carried forward		(679)	748	69	(363)

The Statement of Financial Activities includes all gains and losses recognised during the year. All income and expenditure derives from continuing activities.

The British Trust for Ornithology Consolidated Group and Charity Balance Sheets as at 31 March 2018

	Note	Group 2018	Group 2017	Charity 2018	Charity 2017
		£'000	£'000	£'000	£'000
Fixed assets					
Tangible assets	9	1,914	1,170	1,911	1,170
Investments	10	637	635	637	635
		2,551	1,805	2,548	1,805
Comment and the					
Current assets	11	210	100		
Stocks Debtors	11	319 966	189	1 266	1 550
Cash at bank and in hand	12	1,275	1,306	1,266	1,550 1 141
Casii at balik aliu ili lialiu		2,560	<u>1,340</u> 2,835	<u>1,199</u> 2,465	1,141 2,691
Creditors:		2,560	2,033	2,403	2,691
Amounts falling due within one year	13	(1,492)	(1,590)	(1,394)	(1,446)
Amounts faming due within one year	13	(1,432)	(1,390)	(1,394)	(1,440)
Net current assets		1,068	1,245	1,071	1,245
Total assets less current liabilities		3,619	3,050	3,619	3,050
Creditors:					
Amounts falling due after one year	14	(46)	(42)	(46)	(42)
Net assets excluding pension Liability		3,573	3,008	3,573	3,008
Defined benefit pension liability	21	(3,504)	(3,371)	(3,504)	(3,371)
Net assets including					
pension scheme liability	18	69	(363)	69	(363)
Represented by:					
Restricted funds	17	748	797	748	797
Unrestricted funds	16	2,825	2,211	2,825	2,211
Pension reserve	16	(3,504)	(3,371)	(3,504)	(3,371)
Total funds	18	69	(363)	69	(363)

Approved by the Board and authorised for issue on 10 July 2018 and signed on its behalf by:

Chair Professor J A Gill

Honorary Treasurer Mr I Packer

Company registration number 00357284.

The British Trust for Ornithology Consolidated Statement of Cash Flows For the Year Ended 31 March 2018

		Group 2018	Group 2017	Charity 2018	Charity 2017
		£'000	£′000	£′000	£′000
	Note	1 000	1 000	1 000	1 000
Net cash flow from operating activities	19	(28)	170	92	143
Cash flow from investing activities					
Payments to acquire tangible fixed assets	9	(38)	(17)	(34)	(17)
Investment income received		1	1	1	1
Net cash flow from investing activities		(37)	(16)	(33)	(16)
Net increase/(decrease) change in cash for the year		(65)	154	59	127
Cash at bank and in hand at 1 April		1,340	1,186	1,140	1,013
Cash at bank and in hand at 31 March		1,275	1,340	1,199	1,140
Analysis of Cash and Cash equivalents		2018	2017	2018	2017
Cash at bank and in hand comprises:		£'000	£′000	£'000	£'000
Bank current accounts and cash in hand		92	217	16	18
Bank instant access deposits		1,183	1,123	1,183	1,123
Cash at bank and in hand at 31 March		1,275	1,340	1,199	1,140

Bank instant access deposits carry a variable rate of interest.

1. ACCOUNTING POLICIES

a) Basis of Preparation

The charity constitutes a public benefit entity as defined by FRS 102. The financial statements have been prepared in accordance with Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) issued on 16 July 2014, the Financial Reporting Standard applicable in the United Kingdom and Republic of Ireland (FRS 102), the Charities Act 2011, the Companies Act 2006 and UK Generally Accepted Practice as it applies from 1 January 2015.

The financial statements are prepared on a going concern basis under the historical cost convention, modified to include certain items at fair value. The financial statements are prepared in sterling which is the functional currency of the charity and rounded to the nearest £'000.

b) Group Financial Statements

These financial statements consolidate the results of the charity and its wholly owned trading subsidiary BTO Services Ltd on a line by line basis. A summarised profit and loss account of BTO Services Ltd is given in note 10. The accounts do not include the results of BTO Services Ltd's subsidiary, Porzana Ltd. This is because the results are immaterial and the company was dormant at the year end. See note 10 for more information.

c) Income

Income from donations, gifts and legacies is recognised where there is entitlement, the amount can be measured reliably and it is probable that the income will be received.

Income from charitable activities includes income receivable under contract which is recognised as earned (as the related work is performed). Income from grant funding included in this category provides funding to support charitable activities and is recognised where there is entitlement, certainty of receipt and the amount can be measured with sufficient reliability.

Income is deferred when it is received in advance of the services it relates to. Life membership income is released to the Statement of Financial Activities in equal instalments over a ten year period.

Income from the trading subsidiary and other commercial trading activities is recognised as earned (as the related goods and services are provided).

Investment income, sponsorship and royalty income and membership subscription income are recognised on a receivable basis.

d) Expenditure

Expenditure is recognised when a liability is incurred. Costs are allocated directly to activity cost categories.

Costs of raising funds are those costs incurred in attracting voluntary income, including membership subscriptions, in carrying out trading activities and those costs associated with royalties and sponsorship income.

Costs of charitable activities include scientific research contracts, allocated fund research work and restricted fund research work. They also include volunteer survey support and science communication costs.

Governance costs include those incurred in the governance of the charity and its assets and are primarily associated with constitutional and statutory requirements.

Support costs include central functions and have been allocated to activity cost categories on a staff cost basis.

d) Expenditure (continued)

VAT has been reclaimed on allowable expenses under the Business/Non- Business and the partial exemption rules. Where not reclaimable it has been included within expenses.

e) Tangible Fixed Assets

Individual assets costing £1k or more are initially capitalised at cost.

Tangible fixed assets are depreciated on a straight-line basis over their estimated useful lives as follows:

Asset Category	Annual Rate
Furniture and Equipment	25%
Computer Equipment	25%
Motor Vehicles	25%

Freehold property is not depreciated as, in the opinion of the trustees, any such depreciation charged will be immaterial. Annual impairment reviews are carried out on the property. Revaluations are performed every five years, or as the trustees consider necessary, by a qualified external valuer. The increase or decrease on revaluation is credited or charged to the fund holding the asset.

f) Investments

Investments are recognised initially at fair value which is normally the transaction price excluding transaction costs. Subsequently, they are measured at fair value with changes recognised in 'Net gains / (losses) on investments' in the Statement of Financial Activities if the shares are publicly traded or their fair value can otherwise be measured reliably. Other investments are measured at cost less impairment.

g) Stock

Stock is valued at the lower of cost and net realisable value. Net realisable value is based on estimated selling price less further costs to completion and disposal. Cost is calculated on the first in first out basis.

h) Debtors and creditors falling due within one year

Debtors and creditors with no stated interest rate and falling due within one year are recorded at transaction price. Any losses arising from impairment are recognised in expenditure.

i) Foreign Currency Translation

Monetary assets and liabilities denominated in foreign currencies are translated into sterling at the rates of exchange ruling at the accounting dates. Transactions in foreign currencies are recorded at the rate ruling at the date of the transaction. All differences are taken to the Statement of Financial Activities.

j) Funds Structure

The Trust has a number of restricted funds to account for situations where funds have been raised for a specific purpose. All other funds are unrestricted funds. The trustees intend to use part of the unrestricted funds to provide long-term funding for BTO projects and core activities. Designated funds have been set up to reflect this. A Pensions reserve fund has been created so that movements and balances relating to pension fund valuations can be separately identified. The funds in each of these categories are disclosed in notes 16 and 17.

k) Retirement Benefits

The defined benefit scheme provides benefits for staff based on final pensionable salary. The scheme was closed to future accrual with effect from 1 April 2013. The assets of the scheme are held separately from those of the Trust, being invested with independent fund managers. Defined benefit pension liabilities are measured using the projected unit cost method and discounted at the current rate of return on a high quality corporate bond of equivalent term and currency to the liability. Under FRS 102, any net liability arising based on these valuations is the best estimate of the present value of the actual amounts to be paid out of the scheme, less the market value of the scheme assets. The net of the interests on the scheme assets and liabilities is charged to the Statement of Financial Activities. Actuarial gains and losses are recognised in the Statement of Financial Activities.

The Trust also makes payments in respect of employees' own defined contribution schemes, through a group self-invested personal pension arrangement. For these schemes, the amount charged to the Statement of Financial Activities in respect of pension costs is the contributions payable in the year. Differences between contributions payable in the year and contributions actually paid are shown as either accruals or prepayments in the balance sheet.

I) Going Concern

The trustees have prepared the financial statements on a going concern basis. The FRS 102 valuation of the pension scheme has increased the liability as at 31 March 2018 from £3,371k to £3,504k. These valuations are highly sensitive to rate assumption changes, in particular bond yields. The trustees have agreed a reduction in deficit repair contributions with the pension fund trustees to ensure that these remain at an affordable level.

m) Judgements and key sources of estimation uncertainty

No judgments (apart from those involving estimations) have been made in the process of applying the entity's accounting policies.

There are no key assumptions concerning the future or other sources of estimation uncertainty at the reporting date that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year.

2. MEMBERS' LIABILITY

Under the Memorandum of Association of the Trust, members are required to undertake to contribute to the assets of the Trust in the event of its being wound up while they are members, or within one year after they cease to be members, for payment of the debts and liabilities of the Trust contracted whilst they were still members and of the costs, charges and expenses of winding up such an amount as may be required, but not exceeding £1 each.

3. ANALYSIS OF INCOME

	Group 2018 £'000	Group 2017 £'000	Charity 2018 £'000	Charity 2017 £'000
Donations and legacies		_ 000	_ 000	_ 555
Membership subscriptions & donations	973	930	973	930
Individual donations	506	555	506	555
Corporate & trust donations & grants	288	224	761	850
Legacies	743	762	743	762
Legacies	2,510	2,471	2,983	3,097
Charitable activities				
Core surveys - JNCC Partnership	831	865	770	819
Core surveys - Other	44	43	44	43
Other surveys & research - Voluntary funded	10	22	10	22
Other surveys & research - Contract funded	1,025	1,318	1,025	1,318
Research communication	114	128	89	71
General volunteer survey support	105	94	105	94
Nunnery Lakes Reserve	44	87	44	87
	2,173	2,557	2,087	2,454
Other trading activities				
Ringing & tagging sales	494	447	_	_
Publications & general sales	58	75	-	_
Corporate sponsorship & royalties	137	136	13	6
Consultancy	309	767	378	447
Other	59	8	21	7
	1,057	1,433	412	460
Investment income				
Bank interest receivable	1	1	1	1

The income from donations and legacies for the group was £2,510k (2017: £2,471k) of which £2,127k was unrestricted (2017: £2,072k) and £383k restricted (2017: £399k). The income from donations and legacies for the parent charity was £2,983k (2017: £3,097k) of which £2,600k was unrestricted (2017: £2,698k) and £383k restricted (2017: £399k).

The income from Charitable activities for the group was £2,173k (2017: £2,557k) of which £2,171 was unrestricted (2017: £2,556k) and £2k restricted (2017: £1k). The income from Charitable activities for the parent charity was £2,087k (2017: £2,454k) of which £2,085k was unrestricted (2017: £2,453k) and £2k restricted (2017: £1k).

The income from other trading activities for the group was £1,057k (2017: £1,433k) all of which was unrestricted (2017: all). The income from other trading activities for the parent charity was £412k (2017: £460k) all of which was unrestricted (2017: all).

4. ANALYSIS OF EXPENDITURE

	Group 2018 £'000	Group 2017 £'000	Charity 2018 £'000	Charity 2017 £'000
Raising funds				
Membership subscriptions & donations	281	213	281	213
Individual donations	226	221	226	221
Corporate & trust donations & grants	129	89	129	89
Legacies	2	8	2	8
Sub-total for Fundraising activities	638	531	638	531
Ringing & tagging sales	348	279	124	49
Publications & general sales	62	73	56	66
Corporate sponsorship & royalties	12	9	12	9
Consultancy	207	517	180	304
Other	2	2	2	2
Sub-total for Other trading activities	631	880	374	430
	1,269	1,411	1,012	961
Charitable activities				
Core surveys - JNCC Partnership	1,411	1,235	1,411	1,235
Core surveys - Other	379	413	379	413
Other surveys & research - Voluntary funded	850	999	850	999
Other surveys & research - Contract funded	1,138	1,243	1,138	1,243
Research communication	506	546	506	546
General volunteer survey support	171	179	171	179
Nunnery Lakes Reserve	74	94	74	94
	4,529	4,709	4,529	4,709

Expenditure on Raising funds was £1,269k (2017: £1,411k) of which £1,242k (2017: £1,389k) was unrestricted and £27k (2017: £22k) restricted.

Expenditure on Charitable activities was £4,530k (2017: £4,709k) of which £4,052k (2017: £4,319k) was unrestricted and £478k (2017: £390k) restricted.

5. NET INCOME / (EXPENDITURE)	2018 £'000	2017 £'000
Net income for the year is stated after charging: Auditor's remuneration:		
Fees payable for audit of the charity's annual accounts	13	13
Audit of the charity's subsidiary	4	3
Audit of the charity's final salary pension scheme	2	2
Depreciation (see note 9)	37	36
6. STAFF COSTS	2018	2017
	£'000	£'000
Wages and salaries	3,031	3,095
Social security costs	268	272
Defined contribution pension plan costs	333	332
Net interest on defined benefit pension plan liability per FRS 102	93	98
	3,725	3,797
The number of employees whose emoluments exceeded £60,000 fell within the following bands:	2018	2017
£70,001 - £80,000	1	1
£60,001 - £70,000	1	1
For details of pension contributions and other pension costs, see note 21		

For details of pension contributions and other pension costs, see note 21.

Trustees receive no remuneration, and there were no related party transactions requiring disclosure. The total remuneration including National Insurance and pension contributions of the Senior Leadership Team was £301k (2017: £293k). The salary of the CEO during the year was £77k (2017 £75k), with the same pension and other benefits as were applicable to all staff. Expenses were reimbursed to 11 (2017: 12) trustees as follows:

				2018 £'000		2017 £'000
Travel & subsistence				6	<u> </u>	5
Average numbers of staff and full time equivaler	nt (FTE)					
		2018			2017	7
		No	FTE		No	FTE
Permanent posts		113	99.2		114	103.4
Seasonal fieldworkers		-	0.4		3	1.9
		113	99.6		119	105.3
7. TOTAL EXPENDITURE						
	Direct	Support		2018		2017
	costs	costs		Total		Total
	£'000	£'000		£'000		£'000
Raising funds	1,153	117		1,270		1,411
Charitable activities	4,007	522		4,529		4,709
Other	93			93		98
	5,253	639		5,892		6,218

8. SUPPORT COSTS

	Premises	IT & Office Services	Human Resources	Manage- ment & Finance	Govern- ance	2018 Total	2017 Total
	£'000	£'000	£'000	£'000	£'000	£'000	£'000
Raising funds	1	3	19	39	4	66	60
Charitable activities	8	24	165	344	32	573	680
	9	27	184	383	36	639	740

All support costs are apportioned on a staff cost basis.

Governance costs include audit fees, Board meeting expenses, and the staff cost of servicing Board meetings.

9. TANGIBLE FIXED ASSETS - GROUP

	Freehold Property	Furniture and Equipment	Computer Equipment	Motor Vehicles	Total
	£'000	£'000	£'000	£'000	£'000
Cost or valuation at 1 April 2017	1,107	225	424	112	1,868
Additions	-	14	14	10	38
Disposals	-	(10)	(38)	(7)	(55)
Revaluation	743	-	-	-	743
At 31 March 2018	1,850	229	400	115	2,594
Depreciation at 1 April 2017	-	220	383	95	698
Depreciation charge	-	5	22	10	37
Disposals	-	(10)	(38)	(7)	(55)
At 31 March 2018	-	215	367	98	680
Net book value at 31 March 2018	1,850	14	33	17	1,914
Net book value at 1 April 2017	1,107	5	41	17	1,170

9. TANGIBLE FIXED ASSETS - CHARITY

	Freehold Property	Furniture and Equipment	Computer Equipment	Motor Vehicles	Total
	£'000	£′000	£'000	£'000	£'000
Cost or valuation at 1 April 2017	1,107	225	424	112	1,868
Additions	-	10	14	10	34
Disposals	-	(10	(38)	(7)	(55)
Revaluation	743				743
At 31 March 2018	1,850	225	400	115	2,590
Depreciation at 1 April 2017	-	220	383	95	698
Depreciation charge	-	4	22	10	36
Disposals		(10)	(38)	(7)	(55)
At 31 March 2018	-	214	367	98	679
Net book value at 31 March 2018	1,850	11	33	17	1,911
Net book value at 1 April 2017	1,107	5	41	17	1,170

The freehold property at The Nunnery, occupied by the British Trust for Ornithology, was valued by qualified external valuers, Fenn Wright Chartered Surveyors, on 31 March 2018 on the basis of existing use value, at £1,850k.

On an historical cost basis, the freehold property would have been included at a cost and net book value of £2,284k (2017: £2,284k).

10. INVESTMENTS

The Group

Investment Funds	Market Value 1 April 2017	Additions at cost	Disposals proceeds	Gains/ (losses)	Market value 31 March 2018
	£'000	£'000	£'000	£'000	£'000
General Funds					
Dimensional Global Short Dated Bond	131	-	-	(2)	129
Dimensional Global Sustainability Core Equity	213	-	-	4	217
Wrap Cash	8	-	-	(1)	7
	352			1	353
Birds in Trust Fund					
Dimensional Global Short Dated Bond	106	-	-	(2)	104
Dimensional Global Sustainability Core Equity	171	-	-	3	174
Wrap Cash	6	-	-	-	6
	283	-	-	1	284
Total investment funds	635		-	2	637
The Charity					
				2018	2017
				£'000	£'000
Investment funds as above				637	635
Shares in Group Undertaking - BTO S	Services Ltd				
				637	635

The Trust owns 100% of the ordinary share capital of its subsidiary undertaking, BTO Services Ltd, which is incorporated in England & Wales, company registration number 02907282. This company operates to promote the work of The British Trust for Ornithology by undertaking commercial activities in support of such work. The aggregate value of share capital and reserves at 31 March 2018 was £100 (2017: £100) and the company reported a nil result after Gift Aid for the year (2017: £nil). The value of the Charity's investment in the subsidiary undertaking under the equity method of valuation is £100 (2017: £100). £421k (2017: £627k) was paid to the Charity under Gift Aid.

The following is a summarised statement of income for the subsidiary for the financial year:

	2018 £′000	2017 £'000
Turnover	1,051	1,501
Cost of sales	(590)	(878)
Gross profit	461	623
Net administrative expenses	(40)	4
Net profit before payment under Gift Aid	421	627

10. INVESTMENTS (continued)

Turnover of the subsidiary includes sales to overseas markets of £99k (2017: £117k).

During the year, BTO Services Ltd acquired from another charity 100% of the ordinary share capital of Porzana Ltd. The aggregate value of share capital and reserves at 31 March 2018 was £1 and it reported a nil result after Gift Aid of £53k was paid to the Charity. The results have not been consolidated as Porzana Ltd was only in the ownership of BTO Services Ltd for one month before hiving up its net assets and activities to BTO Services Ltd, thereafter becoming dormant. During that month its income was £26k and it made a loss of £1k.

11. STOCKS	2018	2017
The Group	£'000	£'000
Finished goods and goods for resale	319	189
Timistica goods and goods for result		
The Charity		
The charity holds no trading stock.		
12. DEBTORS	2018	2017
12. DEBTORS	£′000	£′000
The Group	£ 000	1 000
Trade and contract debtors	545	742
Taxes recoverable	174	218
Prepayments	67	70
Accrued income	180	276
	966	1,306
	2018	2017
	£'000	£'000
The Charity		
Trade and contract debtors	243	424
Amounts due from Group undertakings	665	622
Taxes recoverable	174	218
Prepayments	59	70
Accrued income	125	216
	1,266	1,550

13. CREDITORS – AMOUNTS FALLING DUE WITHIN ONE YEAR

	2018	2017
	£'000	£'000
The Group	255	250
Trade creditors	255	250
Taxes and Social Security costs Other creditors	175 57	214 59
Accruals	91	94
Deferred income	914	973
Deferred income	1,492	1,590
	1,432	1,550
	2018	2017
	£'000	£′000
The Charity	2 000	1 000
Trade creditors	236	222
Taxes and Social Security costs	166	185
Other creditors	49	49
Accruals	87	91
Deferred income	856	899
	1,394	1,446
14. CREDITORS – AMOUNTS FALLING DUE AFTER ONE YEAR		
	2018	2017
	£'000	£'000
The Group		
Deferred income	46	42
	2018	2017
	£'000	£'000
The Charity		
Deferred income	46	42
15. DEFERRED INCOME RECONCILIATION	_	
	Group	Charity
	£'000	£'000
Opening balance at 1 April 2017	1,015	941
Amount released to income	(1,260)	(1,161)
Amount deferred in year	1,205	1,122
Closing balance at 31 March 2018	960	902
U		

16. UNRESTRICTED FUNDS

The income funds of the charity include unrestricted funds comprising the following balances:

	Balance at 1 April 2017	Income	Expenditure	Other Gains/ (Losses)	Transfers	Balance at 31 March 2018
	£'000	£'000	£'000	£'000	£'000	£'000
General funds	(296)	4,606	(4,974)	744	418	498
Birds in Trust fund	2,507	750	(320)	1	(611)	2,327
	2,211	5,356	(5,294)	745	(193)	2,825
Pension reserve	(3,371)	-	(93)	(162)	122	(3,504)
	(1,160)	5,356	(5,387)	583	(71)	(679)

The Birds in Trust fund is to provide long-term funding for BTO projects. Income from legacies is credited to this fund unless the will provides otherwise. £18k was transferred to the Out of Africa Fund in respect of Cuckoo projects and £593k was transferred to General funds in respect of the JNCC contract contribution all from the Birds in Trust fund. £54k was released from General funds to the Out of Africa Fund in respect of the Cuckoo and Nightingale Appeal and £1k was released to General funds from the BTO Wales Fund in relation to staff costs in accordance with WCVA grants terms. £122k was transferred from General funds to the Pension reserve in respect of the pension deficit repair payment and other pension movements are disclosed in note 21.

	Balance at 1 April 2016	Income	Expenditure	Other Gains /(Losses)	Transfers	Balance at 31 March 2017
	£'000	£'000	£'000	£'000	£'000	£'000
General funds	(753)	5,292	(5,389)	53	501	(296)
Birds in Trust fund	2,664	770	(319)	43	(651)	2,507
	1,911	6,062	(5,708)	92	(150)	2,211
Pension reserve	(2,821)		(98)	(571)	119	(3,371)
	(910)	6,062	(5,806)	(475)	(31)	(1,160)

17. RESTRICTED FUNDS

The income funds of the charity include restricted funds comprising the following balances of donations and appeal monies given for specific purposes:

	Balance at 1 April 2017	Income	Expenditure	Transfers	Balance at 31 March 2018
	£'000	£'000	£'000	£'000	£'000
Atlas Beyond the Maps Fund	53	3	(37)	-	19
Northern Ireland Fund	1	-	-	-	1
Dilys Breese Fund	88	2	(9)	-	81
Boddy & Sparrow Fund	2	-	-	-	2
Migration Fund	-	1	(1)	-	-
Nightingale Fund	16	35	(24)	-	27
Owl Fund	-	101	(29)	-	72
Swallow Fund	8	-	-	-	8
Young Scientists' Fund	16	31	(24)	-	23
Garden Research Fund	68	10	(6)	-	72
Out of Africa Fund	-	17	(89)	72	-
Thrush Fund	1	-	-	-	1
Farmland Birds Fund	70	1	(23)	-	48
Curlew Fund	149	34	(97)	-	86
Arctic Skua Fund	29	29	(38)	-	20
BTO Wales Fund	42	7	(4)	(1)	44
BirdTrack Fund	20	2	(18)	-	4
Sound Approach Fund	180	60	(89)	-	151
Tasso Leventis Fund	50	52	(16)	-	86
Ringers' Bursary	3	-	(1)	-	2
Thorne Ringing Fund	1	-	-	-	1
	797	385	(505)	71	748

The purposes of the funds are as follows:

Atlas Beyond the Maps Fund continues to support research into Atlas data.

The Northern Ireland Fund has been set up to support BTO in Northern Ireland.

The Dilys Breese Fund is for projects relating to nesting birds and £9k was expended for costs relating to the annual Dilys Breese Awards.

The Boddy & Sparrow Fund is for awards to the best amateur contribution(s) to either or both of the *Bird Study* and *Ringing & Migration* publications.

The Migration Fund is for research into migrating birds.

The Nightingale Fund is to fund work on Nightingales and woodland birds.

The Owl Fund is to fund work on Owls.

The Swallow Fund is to fund work on Swallows and migration.

The Young Scientists' Fund is to support the career development of young scientists.

The Garden Research Fund is to support young scientists work on garden birds.

The Out of Africa Fund is to fund work on African migrants.

£18k was received from Birds in Trust fund in respect of Cuckoo work and £54k was released from General funds in respect of the Cuckoo and Nightingale Funds.

The Thrush Fund is to fund work on Thrushes.

The Farmland Birds Fund is to support work on farmland ecology.

17. RESTRICTED FUNDS (Continued)

The Curlew Fund is to fund projects on Curlews.

The Arctic Skua Fund is to support Arctic Skua work.

The BTO Wales Fund is to support the BTO's presence in Wales.

£1k was released to General funds in relation to staff costs in accordance with WCVA grants terms.

The BirdTrack Fund is to support the development of BirdTrack.

The Sound Approach Fund is to support a number of specific projects.

The Tasso Leventis Fund is to support a number of particular projects.

The Ringers' Bursary Fund is to support ringing.

The Thorne Ringing Fund is to support ringing.

	Balance at 1 April 2016	Income	Expenditure	Transfers	Balance at 31 March 2017
	£'000	£'000	£'000	£'000	£'000
Atlas Beyond the Maps	140	5	(92)	_	53
Northern Ireland Fund	-	-	-	1	1
Dilys Breese Fund	95	-	(7)	-	88
Boddy & Sparrow Fund	2	-	-	-	2
Migration Fund	11	10	(21)	-	_
Nightingale Fund	-	30	(15)	1	16
Swallow Fund	8	-	-	-	8
Young Scientists' Fund	26	11	(21)	-	16
Garden Research Fund	47	29	(8)		68
Out of Africa Fund	-	30	(66)	36	-
Thrush Fund	-	-	(6)	7	1
Farmland Birds Fund	69	3	(2)	-	70
Curlew Fund	149	40	(40)	-	149
Arctic Skua	-	29	-	-	29
BTO Wales Fund	49	4	(8)	(3)	42
BirdTrack Fund	-	71	(51)	-	20
Sound Approach Fund	153	96	(69)	-	180
Tasso Leventis Fund	22	41	(6)	7	50
Ringers' Bursary	2	1	-	-	3
Thorne Ringing Fund	5	-		4	1
	778	400	(412)	31	797

18. ANALYSIS OF FUND BALANCES ACROSS NET ASSETS

As at 31 March 2018

	Fixed Assets	Investments	Current Assets less Total Liabilities	Defined Benefit Pension Liability	Total Net Assets
	£'000	£'000	£'000	£'000	£'000
Unrestricted Funds					
General funds	1,914	353	1,735	(3,504)	498
Birds in Trust fund	-	284	2,043	-	2,327
	1,914	637	3,778	(3,504)	2,825
Pension reserve	-	-	(3,504)	-	(3,504)
	1,914	637	274	(3,504)	(679)
Restricted Funds			748		748
Total Funds	1,914	637	1,022	(3,504)	69

As at 31 March 2017

As at 31 March 2017					
	Fixed	Investments	Current	Define	Total
	Assets		Assets less	Benefit	Net Assets
			Total	Pension	
			Liabilities	Liability	
	£'000	£'000	£'000	£'000	£'000
Unrestricted Funds					
General funds	1,170	352	1,552	(3,371)	(296)
Birds in Trust fund		283	2,224		2,507
	1,170	635	3,776	(3,371)	2,211
Pension reserve			(3,371)	-	(3,371)
	1,170	635	406	(3,371)	(1,160)
Restricted Funds			797		797
Total	1,170	635	1,203	(3,371)	(363)

19. RECONCILIATION OF NET INCOME/(EXPENDITURE) TO NET CASHFLOW FROM OPERATING ACTIVITIES

	Group 2018 £'000	Group 2017 £'000	Charity 2018 £'000	Charity 2017 £'000
Net income/(expenditure)				
per Statement of Financial Activities	(149)	340	(149)	340
Adjustments for:				
Investment income	(1)	(1)	(1)	(1)
Depreciation	37	36	36	36
Net interest on defined benefit pension plan liability	93	98	93	98
Net gains/(losses) on investments	(2)	(96)	(2)	(96)
(Increase)/decrease in stocks	(131)	(25)	-	-
(Increase)/decrease in debtors	340	(138)	284	(94)
Increase/(decrease) in creditors	(93)	75	(47)	(21)
Pension deficit repair payment	(122)	(119)	(122)	(119)
Net cash provided by / (used in) operating activities	(28)	170	92	143

20. FINANCIAL INSTRUMENTS

The carrying amounts of the group's and the charity's financial instruments are as follows:

	Group 2018 £'000	Group 2017 £'000	Charity 2018 £'000	Charity 2017 £'000
Financial assets				
Measured at fair value through				
net income/expenditure:				
Fixed asset listed investments (note 10)	637	635	637	635
Debt investments measured at amortised cost:				
Trade and contract debtors (note 12)	545	742	243	424
Amounts due from Group undertakings (note 12)	-	-	665	622
Accrued income (note 12)	180	276	125	216
	725	1,018	1,033	1,262
Fixed asset unlisted investments (note 10)	-	-	-	-
Financial liabilities				
Measured at amortised cost:				
Trade creditors (note 13)	255	250	236	222
Other creditors (note 13)	57	59	49	49
Accruals (note 13)	91	94	87	91
	403	403	372	362

21. PENSIONS

Defined contribution pension plan

The Trust operates a Group Self-invested Personal Pension Scheme run by Aegon. Staff contribute to the Aegon scheme at a minimum rate of 5% of salary, and the BTO contributes at a flat rate of 11%. The Trust made contributions of £333k during the year (2017: £332k).

Defined benefit pension scheme

The Trust's defined benefit pension scheme, a final salary scheme, is closed. A full actuarial valuation of the scheme was carried out as at 1 April 2015. At that date there was a shortfall of £3,708,000 and a funding level of 72%. The next triennial valuation date is 1 April 2018. A deficit recovery plan has been agreed between the Board and the pension fund trustees, by which the shortfall will be made good by annual lump sum deficit repair payments currently spread over an 18-year period.

The amount of £93k was recognised in the statement of financial activities as expenditure for the year under FRS 102 as Net interest on defined benefit pension plan liability. The total amounts recognised in the statement of financial activities for the year were as follows:

Recognised in:	2018	2017
	£'000	£'000
Expenditure:		
Interest income	299	321
Interest on liabilities	(392)	(419)
Net interest on net defined benefit liability	(93)	(98)
Other recognised gains/(losses):		
Actual return on scheme assets (excluding interest income)	(162)	1,402
Actuarial loss on liabilities		(1,973)
Remeasurement (loss)	(162)	(571)
The amount recognised in the balance sheet was as follows:		
-	2018	2017
	£'000	£'000
Fair value of scheme assets	10,598	10,897
Present value of defined benefit obligations	(14,102)	(14,268)
Defined pension scheme liability at 31 March	(3,504)	(3,371)
Reconciliation of funded status:		
Accondition of funded status.	2018	2017
	£′000	£'000
(Deficit) as at 1 April 2017	(3,731)	(2,821)
Employer contributions	122	119
Net interest on net defined benefit liability	(93)	(98)
Remeasurement (loss)	(162)	(571)
(Deficit) as at 31 March 2018	(3,504)	(3,371)
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21. PENSIONS (Continued)

Changes in the fair value of the pension scheme assets were as follows:		
changes in the rail value of the pension scheme assets were as follows.	2018	2017
	£'000	£'000
Opening fair value of scheme assets at 1 April	10,897	9,210
Interest income	299	321
Actual return on scheme assets (excluding interest income)	(162)	1,402
Employer deficit repair payment	122	119
Benefits paid to members	(558)	(155)
Closing fair value of scheme assets at 31 March	10,598	10,897
Changes in the present value of the defined benefit obligations were as follows:		
	2018	2017
	£′000	£′000
Opening present value of defined benefit obligations at 1 April	(14,268)	(12,031)
Interest on liabilities	(392)	(419)
Actuarial losses	-	(1,973)
Benefits paid	558	155
Closing present value of defined benefit obligations at 31 March	(14,102)	(14,268)
The amount of each major class of pension plan assets within the total fair value of t	he scheme assets	was as follows:
	2018	2017
	£′000	£′000
Bonds	4,227	4,251
Equities	6,065	5,995
Annuities	251	269
Cash	55	382
	10,598	10,897
The total return on scheme assets was as follows:		
	2018	2017
	£'000	£'000
Interest income	299	321
Actual return on scheme assets (excluding interest income)	(162)	1,402
Total return on scheme assets	137	1,723
The principal actuarial assumptions used were as follows:		
	2018	2017
Discount rate	2.8%	2.8%
Rate of increase in pensions in payment	3.6%	3.6%
Rate of increase in pensions in deferment	2.3%	2.3%
Inflation assumption	3.3%	3.3%
Average life expectancy, after retirement at age 65:	2018	2017
The age are expectancy, after retirement at age of.	No of years	No of years
Male - at the valuation date	22.3	22.5
Male - retiring in 20 years' time	24.1	24.2
Female - at the valuation date	23.8	24.0
Female - retiring in 20 years' time	25.1	25.2
•		

The British Trust for Ornithology Supporters For the Year Ended 31 March 2018

We are very grateful for the generous support that we have received, both in time and money, in the past year. In addition to members and other fieldworkers, there are many other individuals and companies who support the work of the BTO with financial contributions. The Trust is particularly pleased to acknowledge the following corporate and other supporters.

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Trusts 2017/18

The AEB Charitable Trust, Banister Charitable Trust, The Downton Banister Trust, The Rowan Bentall Charitable Trust, The Cameron Bespolka Trust, The Brocklebank Trust, The Edward Cadbury Trust, The Chapman Charitable Trust, Marjorie Coote Animal Charity Trust, Keith Ewart Charitable Trust, Esmée Fairbairn Charitable Foundation, The Gatliff Trust, The Gilander Foundation, The Helen & Horace Gillman Charitable Trusts, Goldcrest Charitable Trust, The Deo Gratias Charitable Fund, The Alan & Karen Grieve Charitable Trust, Peter & Teresa Harris Charitable Trust, Harris Charitable Trust, The Heritage Lottery Fund, The Ernest Kleinwort Charitable Trust, A G Leventis Foundation, John Spedan Lewis Foundation, The Charles Littlewood Hill Trust, The Lizandy Charitable Trust, The Marsh Christian Trust, The Mitchell Trust, The Moneybury Charitable Trust, The Oakdale Charitable Trust, The Cecil Pilkington Charitable Trust, Mr & Mrs Philip Rackham, The Roger Raymond Charitable Trust, The John & Pamela Salter Charitable Trust, The Sandra Charitable Trust, The Saxham Trust, The Peter Smith Charitable Trust for Nature, The Southampton Row Trust, John Swire 1989 Charitable Trust, The Tobit Trust, The Alan Turner Trust, Udimore Charitable Trust, The Emily Weircroft Charitable Trust, The Whaites Charitable Fund, The Whitaker Charitable Trust, The Maldwyn Williams Charitable Trust, H D H Wills/Martin Wills Fund, The J & J R Wilson Trust

Legacies 2017/18

Martin Henry Percival Baker, Peter Beaney, June Peggy Carter, Avril Anne Critchley, James Arthur Cowlin, Beryl Foote, Beatrice Gillam, Frank Colin Gribble, Eileen Gladys Littler, David George Lloyd, Gwen Macnair, Albertine Malham, William Moss, Susan Ceridwen Perucki, Henry Robb, Mark Rookes, Charles Edward Victor Saxton, Gillian Marjorie Stewart, Sir John Anthony Swire

In Memoriam 2017/18

Ken Ayres, Mr P J Barrow, Gary Caine, Moria Cody, Joy Eileen Connolly, Robin Cross, Suzanne Diggle, James Andrew Durston, David Evamy, Pam Forster, Paul Garrard, Rosemary Garrod, Julian Greenwood, Dr Ian Hampton, Etain Mary Hatfield, Mike Hounsome, Michael Irwin, Peter Charles Keat, John Kneale, James Ferguson-Lees, Jean R May, Michael Palles-Clark, David Peace, Trevor Poyser, Michael Reynolds, Jonathan Edward Ridge, Alan John Seager, M Smith, Mike Summers

Funders of BTO Work 2017/18

Amec Foster Wheeler Environment and Infrastructure UK Ltd., Anglian Water Group, Anglian Water Flourishing Environment Fund, APEM Ltd., Bat Conservation Trust, British Dragonfly Society, Bureau Waadenburg bv, Butterfly Conservation, Cairngorm National Park, Cambridge Conservation Initiative, Catalonian Forest Institute, Centre for Ecology & Hydrology, Dartmoor National Park Authority, Department of the Environment, Food and Rural Affairs, Department for Business, Energy and Industrial Strategy, Devon Wildlife Trust, DONG Energy, Ecological Planning and Research Ltd., eleQtra Ltd., Elliott Environmental Surveys Ltd., Eneco — Netherlands, Environment Agency, Environment Resources Management, EURING, European Commission, Forestry Commission, Forestry Commission England, Forestry Commission Scotland, Forest Research, Foster & Partners, Game & Wildlife Conservation Trust, Grosvenor Estates, Hartley Anderson Ltd., Israel Nature & Parks Authority, James Hutton Institute, Joint Nature Conservation Committee (on behalf of the statutory nature conservation agencies: Natural England, Natural Resources Wales, Scottish Natural Heritage and the Department of the Environment Northern Ireland), Manx Bird Life, National Trust, Natural England, Natural Resources Wales, Natural Environment Research Council, The Nature & Biodiversity Conservation Union, Newcastle University, NIRAS Consulting Ltd., North York Moors National Park Authority, Northern Ireland Environment Agency, /continued.

The British Trust for Ornithology Supporters For the Year Ended 31 March 2018

Funders of BTO Work 2017/18 (Continued)

Northern Ireland Raptor Study Group, Outdoor Alternative, Rentokil, Royal Society for the Protection of Birds, Scottish Government, Scottish Natural Heritage, Scottish Raptor Study Group, Scottish Ornithologists' Club, SMRU Ltd., Sound Approach, Stichting Rubicon, Sussex Ornithological Society, State of Delaware (DNREC), Syngenta, Tesco Bags of Help, Tidal Power Lagoon, Trunk Road Agency, University of Bristol, University of Cambridge, University of East Anglia, University of Edinburgh, University of Exeter, University College London, University of Stirling, University of York, Welsh Government, Wildfowl & Wetlands Trust, The Wildlife Trusts, Waste Recycling Environmental Ltd., Zoological Society of London.