

## Expertise Brochure

**The British Trust for Ornithology (BTO) is one of the world's leading scientific research organisations specialising in birds and habitats. We are based in Thetford, Norfolk, England, with offices in Scotland, Wales and Northern Ireland.**

We undertake impartial research and analysis, relating to birds, other wildlife and habitats, to advance the understanding of natural systems. The BTO provides high quality, impartial and policy-relevant data and information, relied upon for informed decision making. We work in partnership with the academic and conservation science communities, with Government Departments and Agencies, and with the private and voluntary sectors. The BTO has a unique combination of professional scientists and volunteers, and undertakes modern statistically robust surveys with web-based on-line data entry and retrieval. We add value to data through high powered analysis and a strong modelling capability.



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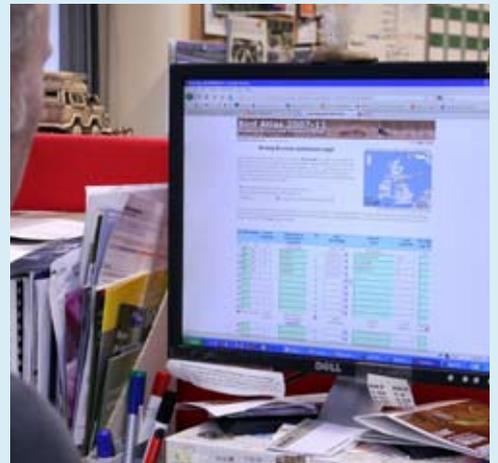
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## BTO Strategy

The BTO has a vision of a world in which nature conservation and sustainable development are founded on evidence-based decision-making, and in which society understands, values and contributes to that process. We are in a time of unprecedented awareness and acknowledgement of environmental change, and the human response to that change must be informed by knowledge and understanding of species and habitats - the ecosystems that underpin our planet's life support. The BTO has a vital role to play in the provision of that knowledge, with citizen science being core to the delivery of the BTO strategy.

## BTO Science Themes

### Monitoring changing bird populations

Our ability to coordinate thousands of motivated and skilled volunteers, together with professional expertise, enable us to track many aspects of birds' lives. We provide facts, figures and indicators that Government and decision-makers use to inform policy, and which is the context for measuring change in our environment.

### Population dynamics and modelling

We integrate records collected by volunteers from many aspects of birds' life-cycles, through nest recording, ringing, and survey monitoring. This integrated population modelling means we are well placed to investigate the effects of environmental change on bird populations.

### Ecosystems: from territories to landscapes

We are at the forefront of land-use issues in ornithology, with unique expertise of studying bird ecology in farmland, woodland, upland and urban habitats at multiple spatial scales. We employ traditional field approaches, innovative technology and state-of-the-art analytical techniques to investigate the consequences of land-use change.

### Migration and the ecology of migrant birds

Understanding the ecology of migration, as birds move between habitats and countries is important if we are to understand the effects of environmental changes at a global scale. Our underpinning knowledge comes from a century of bird ringing and nest recording, and we are now using modern transmitter technology to unravel the ecology of migrant birds.

### Climate change

Climate change impacts on biodiversity become apparent over long timescales, and the BTO's long-term datasets are ideally suited to understanding the underlying processes. We develop indicators and provide advice to Government, international and national bodies to inform policy.

### Wetland and marine research

Inland, coastal and marine waters of the UK all hold internationally important bird populations. BTO is at the forefront of delivering information on waterbirds in response to the requirements of legislation, infrastructure development and policy development. We are actively investigating energy developments offshore.



Black-tailed Godwit being colour-marked as part of an international migration project



Dr Phil Atkinson Head of International Research demonstrating research results to, the BTO's Patron, HRH The Duke of Edinburgh KG KT during a visit to BTO HQ

## Volunteer Engagement and Management - Big Society Birdwatching

**Birds are important barometers of change – they are colourful, vocal and highly visible components of British wildlife which respond, through their numbers, to changes in the conditions they encounter. The British Trust for Ornithology (BTO) draws on people’s inherent interest in birds to help map these changes on a national and, more frequently, international scale.**

### Volunteer Monitoring of Birds

The BTO works through a combination of the efforts of 40,000 volunteer bird recorders across the UK, rigorous survey design, and intelligent, modern data analysis. Interpretation by our professional scientists, means we can contribute solid evidence-based science to Government and society in a remarkably cost-effective manner. We employ cutting-edge technological innovations to harness people’s inherent interest in birds and other wildlife, and to underpin our scientific research into the populations and ecology of wildlife.



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*'We employ cutting-edge technological innovations to harness people's inherent interest in birds and other wildlife, to underpin our scientific research into the populations and ecology of wildlife.'*

### Long-term monitoring by volunteers shows the impact of cold winters on Grey Herons



### BTO's Garden BirdWatchers record a range of wildlife in their gardens



## Using technology to capture volunteer-gathered data

Innovative development of online systems is now a pivotal part of the work we carry out involving volunteers. Current systems utilise the latest mapping technologies, to allow users to select their own survey areas and to download information for those areas. We have pioneered methods for providing instantaneous feedback to observers and for delegating validation of data remotely to survey organisers and local experts. Our systems allow information to be shared rapidly and easily between volunteer survey organisers, to help ensure consistency across our work and within the birdwatching community.

## Building participatory monitoring networks

Volunteer BTO birdwatchers contribute an estimated £36m annually to bird recording in the UK. We have established a successful network of 'Regional Representatives' who recruit, organise and support volunteers on a regional basis. These super-volunteers are also involved in validating the data submitted by volunteers, to ensure that records are reliable and accurate. We provide guidance, training and support to our Regional Representatives via online forums and face-to-face meetings. The network is managed by a committee composed of staff and experienced RRs.

## Volunteer-led recruitment and promotion

Our volunteers also contribute through recruiting new members and volunteers for the organisation and through carrying out general promotional work at events, conferences and meetings. We encourage and maintain this contribution by providing guidelines, induction days and support materials. Our Lottery-funded Garden BirdWatch Ambassador Scheme provides an excellent example of how volunteers can contribute, by promoting our work to others.

## Encouraging and empowering volunteers

Volunteers input to the BTO at a strategic level through participation in steering groups and committees and are frequently invited to present their work at our conferences and in our magazines and journals. By providing platforms to share experiences and expertise, disseminating information and providing small research grants we aim to help volunteers bring their work to a wider audience through posters, papers and talks.

## Monitoring Changing Bird Populations

**Monitoring is a cornerstone of our science. Through BTO's unique partnership between skilled volunteer birdwatchers and professional scientists, we are able to monitor changes in bird numbers, in distribution, and in productivity and survival, and this work has, for example, underpinned Government's knowledge of the Farmland Birds Index. In partnership with other organisations our expertise is being applied additionally to mammals, reptiles, amphibians and insects.**

### Surveys

Our core surveys are: the Breeding Bird Survey (BBS\*) where volunteers make breeding season counts, annually, of birds in 3,000 randomly-selected locations across the UK, and; the Wetland Bird Survey (WeBS\*) where volunteers make monthly counts of the UK's wintering waterbirds on key sites. These surveys are complemented by a suite of special surveys aimed specifically at riverine birds (the Waterways Breeding Bird Survey), herons and egrets (the Heronries Census), garden birds (Garden BirdWatch) and periodic national surveys of species as diverse as Barn Owl, Nightingale and Goosander.



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### UK Wild Bird Indicator



*'Birds can be valuable indicators of change in other wildlife and in the state of the countryside, due to their position in the food chain'*

### The breeding range of the Redshank has declined dramatically



1970



2009



### Muntjac deer from China now established



## Biodiversity Indicators

Birds can be valuable indicators of change in other wildlife and in the state of the countryside, due to their position in the food chain, their widespread occurrence and their high profile in the public eye. This has led to the development of a suite of bird indicators used by Government to measure progress towards biodiversity targets and sustainable management of our farmland, waterways and forests. For many years, England's Farmland Bird Index, a composite index of changes in abundance of familiar farmland birds, such as Skylark and Lapwing, has been the key measure of progress towards sustainable agriculture in the country. Similar bird indicators have been developed across Europe, and regionally within the UK, aimed at measuring the effects of a range of potential threats from climate change to land use.

## Setting conservation priorities

Knowing which species are most in need of conservation action is critical to setting priorities. BTO monitoring programmes provide the evidence through a system of 'alerts', triggered by significant declines that highlight vulnerable populations and species. This information is used by those responsible for managing sites (e.g. Special Protection Areas) or species (e.g. those in the UK's Biodiversity Action Plan).

## Bird atlases

BTO atlases display results from complete stock-takes of British and Irish birds. Bird Atlas 2007-11 will be completed in 2011, and the book's publication is expected early in 2013. Achieving comprehensive summer and winter coverage, the Atlas provides clear evidence of dramatic change. These data will help set conservation priorities for a decade.

## Monitoring other wildlife

We are sharing our expertise in survey design, mobilising volunteers and capturing, analysing and interpreting data to enable organisations monitoring wildlife other than birds to improve knowledge. Breeding Bird Survey volunteers already collect mammal data and this, for example, has informed our knowledge of the dramatic spread of Muntjac deer in a decade. Closer to home, thousands of participants in the BTO's Garden BirdWatch faithfully record a range of wildlife including toads, hedgehogs, butterflies and dragonflies in their gardens, providing an invaluable picture of how wildlife is making use of our increasingly urban environment.

*\* Partners: The Joint Nature Conservation Committee (JNCC) (on behalf of the Council for Nature Conservation and the Countryside, the Countryside Council for Wales, Natural England and Scottish Natural Heritage), RSPB and WWT.*

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## Population Dynamics Research

**Our 40,000 volunteers collect data from sites across the country that allow us to quantify variation in bird productivity and survival. A unique strength of the BTO is to integrate these data to enable us to build up a detailed picture of the ecology of bird populations, and the factors that cause them to change. Such information can help reverse species declines or lessen the impacts of human actions.**

In particular we organise the British and Irish Ringing scheme, enabling 2,500 volunteers to ring and record over 800,000 birds annually; organise the national Nest Record Scheme, recording the outcome of over 30,000 nesting attempts each year; provide information on population dynamics of a wide range of bird species, particularly those of conservation concern, and; collaborate with biostatisticians to develop and evolve sophisticated analyses of bird population data.



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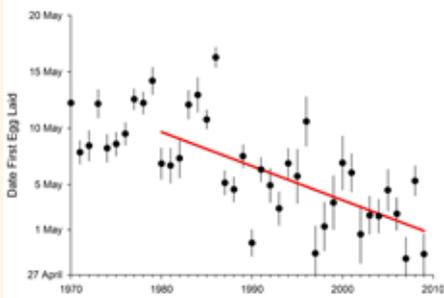
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[www.bto.org/science/population-dynamics](http://www.bto.org/science/population-dynamics)



*'We apply novel statistical techniques to provide a complete picture of the species life-cycle at population-scale'*

### Chaffinches nesting earlier since 1980



### Winter food supplies vital for Yellowhammer



## Understanding Management Actions

Our research is frequently applied to understanding the impacts of developments and land-use interventions on species and habitats. For example, UK estuaries are internationally important for waterbirds that rely on the high densities of invertebrate food species present. For example, Oystercatchers on the Wash rely on cockles and mussels that are also harvested commercially. An analysis of the survival rates in relation to shellfish availability has helped develop a sustainable management strategy for the fishery. Similarly, a study following displaced Redshank in the Cardiff Bay barrage development demonstrated a marked reduction in their survival. These two cases illustrate our rigorous, evidence-based approach.

## Documenting Environmental Change

The environment in which birds live is continually changing. The Nest Record Scheme has shown that many bird species are now nesting up to two weeks earlier than they were 30 years ago. Current research is exploring how the timing of nesting may be starting to be decoupled from peak food supplies. Data from the Ringing Scheme highlighted the importance of winter food supplies for farmland seed-eating birds, the Yellowhammer and Reed Bunting. By understanding how changes in the environment affect survival and productivity of birds, we can document current change and predict how populations might change in the future.

## Integrated Population Analyses

We continue to develop the framework that enables integrated analyses of all our datasets on population dynamics. We apply novel statistical techniques to provide a complete picture of the species life-cycle at population-scale. Such analyses have been influential in understanding the decline of farmland birds, and are beginning to shed light on those of our migratory birds too. Most of the information we generate on bird population dynamics is available on our website ([www.bto.org/birdtrends](http://www.bto.org/birdtrends)) and this provides an important resource for understanding the context of local population changes. A key aim of this work is to provide the best possible information on the status and threats to our bird populations, informing the public and supporting decision-makers.

*Partners: JNCC is the statutory adviser to Government on UK and international nature conservation, on behalf of the Council for Nature Conservation and the Countryside, the Countryside Council for Wales, Natural England and Scottish Natural Heritage.*

## Ecosystems: from Territories to Landscapes

**The BTO is able to study pure and applied bird ecology at a variety of geographical scales, from landscapes to an individual bird's territory. Declines in farmland birds were first identified by analyses of BTO datasets and we have diagnosed causes of population change, and tested management solutions. We are currently exploring the drivers of change in woodland bird numbers and the conservation value of urban landscapes.**

### Testing Agri-Environment Schemes (AESs)

Agri-environment Schemes (AES) are the main tools for resolving the biodiversity crisis in farmland. BTO field experiments and monitoring have contributed to the design of specific AES management options that benefit birds. We have combined field research and Breeding Bird Survey analysis to assess the effectiveness of Entry Level Stewardship in addressing farmland bird declines.



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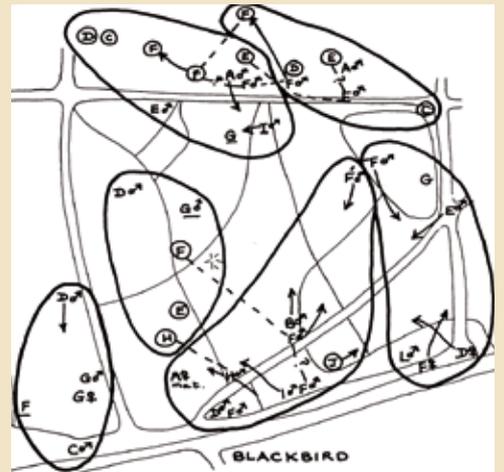
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*'BTO ecological studies are using new nest camera technology to explore predation risk in relation to human disturbance. Results can inform urban and rural planning'*

### Nightjar nest camera in Thetford Forest

23:04:57 Camera #1 1048D6B8



### Human habitats are very important for several species of conservation concern



## How Habitat Affects Abundance

Predictions of the effects on birds of changes in land-use such as afforestation, shifts in cropping or habitat creation for climate change mitigation require prior knowledge of the influences of habitat variation. Data sets such as the BBS combined with habitat information such as the CEH Land Cover Map, provide a unique resource for the investigation of relationships like these. We have investigated relationships between bird abundance and habitat composition/configuration across all of the UK's lowland farmland, identifying the influences of cropping, field boundaries and landscapes, as well as habitat heterogeneity *per se*.

## Disturbance, Management and Rare Species in Forestry

Thetford Forest is a commercial woodland and a public open space, but also an important habitat for birds, notably nationally scarce species such as Woodlark and Nightjar. Using a combination of volunteer and professional surveys, and GIS analysis, BTO research (in collaboration with the University of East Anglia) has identified the types of forest management that these species prefer. New work using remote nest camera technology has identified the wide range of nest predators of these species and has allowed us to explore the effects of human disturbance. The results inform forest managers' efforts to reconcile commercial production, public access and conservation.

## Ecological Importance of Garden Feeding

Data collected by volunteers contributing to Garden BirdWatch provide an invaluable resource for researching the birds in our villages, towns and cities. By combining professional analyses of these data with 'citizen science' experiments conducted by volunteers in their own gardens, we have investigated how birds, mammals, amphibians and reptiles use 'human habitat' and how we can improve the conservation value of current and proposed urban development.

*Partners: Food & Environment Research Agency (Fera), RSPB, Syngenta, University of Birmingham, Macauley Land-use Research Institute (MLURI), Forest Research, University of Nottingham, Farming & Wildlife Advisory Group (FWAG)*

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## Migration and the Ecology of Migrant Birds

**BTO has a long history of migration research underpinned by over a century of bird ringing and 70 years of nest-recording. Rapid declines in the number of long-distance migrants point to an urgent need for research with a strong international dimension. We are using recent technological developments to give new impetus to migration research.**

### Monitoring bird movements and habitat use in West Africa

BTO, in partnership with RSPB and the Ghana Wildlife Society and Naturama (Birdlife partners in Ghana and Burkina Faso), has developed a research programme on the ecology of Palaearctic-African migrants on their wintering grounds in West Africa. Many of these species are declining across Europe, potentially as a result of changes in land-use or climate in West Africa. To understand the possible causes of decline we are studying the ecology of migrants and monitoring patterns of bird movements and habitat use from the arid Sahel in northern Burkina Faso to the humid rainforests of southern Ghana.



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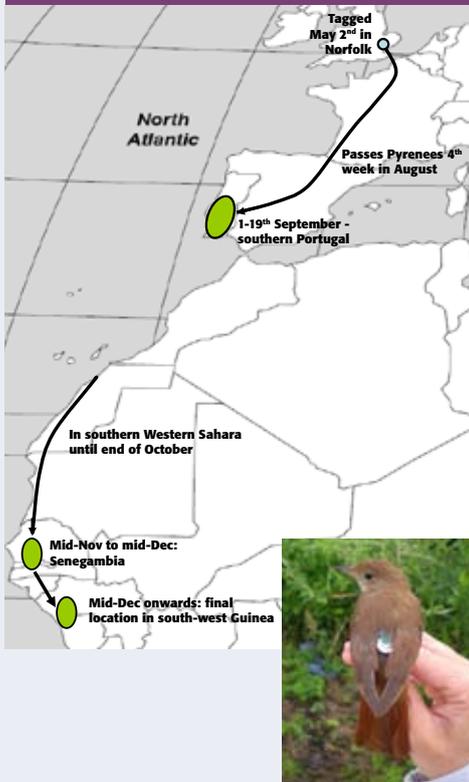
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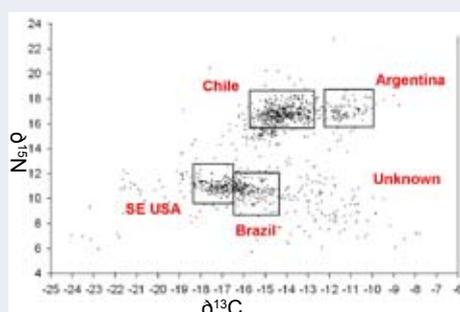


*'We are using our expertise to undertake detailed ecological studies on individual species as well as tracking and following migrants to understand the factors in Europe and Africa that could be causing rapid declines in many of our long-distance migrants'*

### The journey of the tagged Nightingale



### Using a small wing feather from a Knot we can find out where it spent the winter



### Migrants in the UK

Many of our summer migrants are decline in number. Unusually, Willow Warblers are declining in southern Britain, but increasing in the north. This difference in population trajectories has provided the opportunity for a BTO/University of East Anglia research student to use BTO data to help to understand why Willow Warbler numbers are falling and to help us to explore causes of broader declines.

### Tracking migration routes and wintering locations in long-distance migrants

Tracking devices are getting smaller and smaller and are revolutionising our understanding of migration. Nightingale populations are in rapid decline and, in partnership with the Swiss Ornithological Institute, we have used remote tracking devices ('geolocators', which are day-length monitoring cells), to track the migration routes of Nightingales and their winter movements in Africa. This knowledge will help us to understand environmental or anthropogenic pressures on migrants, target our research effort and to provide appropriate conservation advice.

### Understanding the migration ecology of waders in Delaware, USA

Red Knot in Delaware Bay rely on the eggs of Horseshoe Crabs for fattening on their northward spring migration to Arctic breeding grounds. Overharvesting of Horseshoe Crabs has reduced food availability for birds and their survival rate has fallen. Understanding the migration ecology of Knot, using technological advances in the form of stable isotopes to identify and model shorebird wintering populations, has contributed to the development of an adaptive management plan for Horseshoe Crab fishery incorporating bird conservation.

The graph shows we can confidently use Carbon and Nitrogen stable isotope ratios in flight feathers to determine the wintering area of most knot passing through Delaware Bay. The main clusters are in Bahia Lomas (Chile), Rio Grande (Argentina), south-east USA and Brazil.

### Looking to the future

With technology moving on apace there are tremendous opportunities to use satellite tracking and geolocators to finally unravel such mysteries as where species like Cuckoos and House Martins go in winter, and we welcome partnerships to develop this work further, leading to exciting new opportunities for research into migration and migrant ecology.

Partners: State of Delaware; US Fish & Wildlife Service

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## Climate Change Research

**Climate change has been widely cited as one of the most significant threats to biodiversity and its impact is projected to be increasingly severe during the course of this century. The BTO gathers evidence to describe species and population responses to climate change, and this information contributes to adaptation policies and action. BTO research on climate change documents the impacts, predicts the future, and informs adaptation.**

### Documenting Impacts

BTO long-term datasets have: identified how warming conditions are leading to earlier nesting in birds; described distributional shifts of up to 150 km in wintering waterbirds; reviewed how changes in temperature and rainfall are driving population changes of a wide-range of taxa as part of the BICCO-Net project ([www.bicco-net.org](http://www.bicco-net.org)).

### Projecting the future

BTO analysts are developing models to: project how species distributions and population sizes may change in response to climate change and; assess which species are likely to decline through effects of climate change on survival and productivity.



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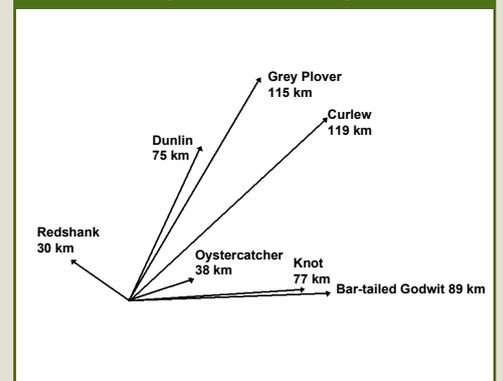
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### Wader centres of distribution change in NW Europe with warming winters

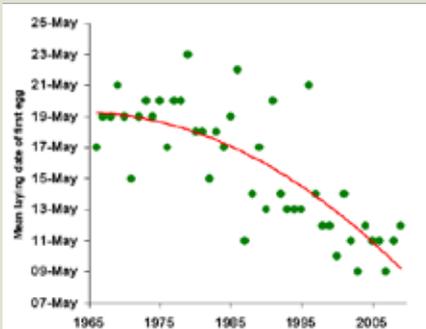


*'BTO analysts are developing models to: project how species distributions and population sizes may change in response to climate change'*

### **Pied Flycatcher are now nesting earlier than they used to**



*BTO is currently examining whether these changes have been sufficient for them to adapt to warmer spring conditions*



### **Little Egret provisional results Nov 2010**



*Breeding*



*Winter*



## **Informing Adaptation**

Projected changes in species distributions and populations are being used to assess the resilience of the UK Special Protection Area (SPA) network to climate change. In addition, analyses of Common Bird Census (CBC) and Breeding Bird Survey (BBS) data on birds and mammals are testing evidence underpinning adaptation principles.

## **Phenological Change**

BTO research first reported advances in the timing of egg-laying in UK bird species from 1971-1995. A subsequent BTO study has shown that these changes are related to increases in temperature as a result of climate change.

Recent analysis of broad phenological data found that different taxa respond to increases in temperature at different rates. Plants have advanced their phenology more rapidly than invertebrates, and invertebrates respond more rapidly than vertebrates. This may cause a mismatch for species that rely on seasonal peaks in food abundance, such as insectivorous birds. There is some evidence that phenological mismatch has reduced the productivity and abundance of a number of insectivorous and migratory bird species in Europe. BTO research is examining the evidence for similar impacts on the UK's avifauna.

## **Changes in Bird Distribution**

Wetland Bird Survey (WeBS) counts show that the distributions of wintering waders have shifted eastwards. Warmer winters enable birds to take advantage of greater food resources on east coast estuaries. The forthcoming Bird Atlas 2007-11 will highlight distributional changes in other species. Previous atlases, for example in 1998-91, recorded few if any Little Egrets. Provisional results from Bird Atlas 2007-11 show their widespread range in winter and many breeding records, a colonisation perhaps facilitated by climate change.

Changes in bird distribution as a result of climate change may have implications for the network of protected areas. We are working with DEFRA to examine the implications of these for the UK Special Protection Areas.

*Partners: JNCC is the statutory adviser to Government on UK and international nature conservation, on behalf of the Council for Nature Conservation and Countryside, the Countryside Council for Wales, Natural England and Scottish Natural Heritage.*

## Wetland and Marine Research

**The inland, coastal and marine waters of the UK support internationally important bird populations. BTO is at the forefront of waterbird monitoring and research, and our work has informed the designation of protected areas and helps to assess their condition.**

### Waterbird & Seabird Populations

We organise 3,000 Wetland Bird Survey (WeBS\*) volunteers to systematically monitor the UK's non-breeding waterbirds. In collaboration with statutory agencies, we are enhancing this and other schemes to improve monitoring coverage of all UK breeding and non-breeding waterbirds and seabirds. Using data from WeBS and other surveys we report on the condition of important waterbird and seabird features in protected areas. Our research explores the key drivers of waterbird and seabird population change, including climate change, habitat loss, disturbance and the impacts of non-native species.



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*'Our advisory work has included assessments of the potential impacts of tidal power schemes on estuarine waterbirds and guidance on survey and Environmental Impact Assessment methodologies for offshore windfarm developments'*

## Renewable Energy



## Tidal power options under the Strategic Environmental Assessment



*red = barrage options;  
blue = lagoon options.*



## Providing the Evidence Base on Marine Issues

The BTO contributes waterbird and seabird evidence on marine issues for multidisciplinary Governmental and inter-Governmental initiatives including: the Oslo-Paris Convention (OSPAR), the mechanism by which fifteen Governments of the western coasts and catchments of Europe, together with the European Community, cooperate to protect the marine environment of the north-east Atlantic; Charting Progress, a comprehensive report on the state of the UK seas, published by the UK Marine Monitoring and Assessment community, which has over 40 member organisations; and the United Kingdom Marine Climate Change Impacts Partnership (MCCIP) which brings together scientists, government, its agencies and NGOs to provide coordinated advice on climate change impacts around our coast and in our seas.

## Renewable Energy

Our advisory work has included assessments of the potential impacts of tidal power schemes on estuarine waterbirds and guidance on survey and Environmental Impact Assessment methodologies for offshore windfarm developments. Our research uses new tracking technology to investigate the interaction of seabirds with offshore windfarms, and modelling to better understand factors affecting how birds use the marine environment. We currently provide strategic ornithological support services to the offshore wind industry on behalf of The Crown Estate.

## The Severn Tidal Power Strategic Environmental Assessment

BTO has provided advice on the potential effects of tidal power schemes on estuarine waterbirds since the 1980s. Our involvement in the recent Severn Tidal Power Strategic Environmental Assessment included leading on the waterbirds and biodiversity topic papers informing the study. Using Wetland Bird Survey counts and modelling we provided an assessment of the potential effects of tidal power scheme options on the estuarine environment. Our understanding of the potential effects of tidal power schemes is enhanced by previous BTO research into the impacts of intertidal habitat loss on the waterbirds of Cardiff Bay.

*\*A partnership between the BTO, JNCC (on behalf of the Council for Nature Conservation and the Countryside, the Countryside Council for Wales, Natural England and Scottish Natural Heritage), RSPB and in association with WWT.*

## International Research

**BTO's international research cuts across many of the organisation's research themes and has a broad remit, taking in classical ecological studies, as well as incorporating elements from the social and economic sciences. We operate in three broad areas – research into the ecology of long-distance migrant birds, technology transfer and capacity building, and researching links between biodiversity, the natural environment and livelihoods in developing countries.**

### Out of Africa

Since 2009, BTO has operated a field project 'Migrants in Africa (MiA)' in Ghana and Burkina Faso together with RSPB and two BirdLife partners, the Ghana Wildlife Society and Naturama. BTO research has shown that UK migrants wintering in the humid zones of West Africa are in rapid decline. The field project, spanning habitats from the arid Sahel in Burkina Faso to the humid rainforests in Ghana, is investigating the wintering and stop-over ecology of migrants and how changes in land use and climate are impacting upon their populations.



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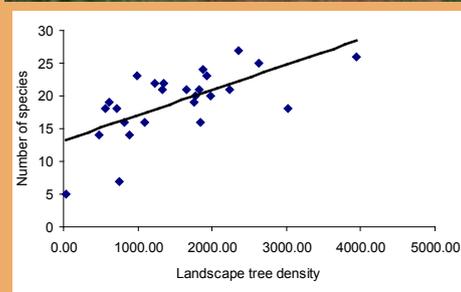
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[www.bto.org/science/international](http://www.bto.org/science/international)



*'The BTO's independent non-campaigning stance has led to impact assessment work and the provision of impartial advice to regulatory institutions'*

### Forest birds impacted by farming intensification and loss of trees



## Biodiversity and livelihoods in the modernising farmed landscapes of Uganda

Across much of the developing world, biodiversity underpins the livelihoods of the rural poor. In a four year project, funded by the Darwin Initiative, BTO led an ecosystem service and livelihood project in the banana/coffee production area around Lake Victoria that showed that landscape management was critical for both farmers and biodiversity (see figure to the left). In landscapes that were heavily farmed there was too little fallow land for pollinators. Allowing one third of the land to remain fallow led to improved coffee production, led to increased yields of other crops and supported more diverse populations of bees, butterflies and birds. This study showed how landscapes can be optimally managed for farmer income and biodiversity.

## Capacity building, technology transfer & working with industry

BTO regularly provides advice or training in how to establish and run monitoring schemes outside the UK, whether they are new national bird monitoring projects or the setting up of bird ringing schemes. We also undertake specific, often multi-disciplinary, research projects and are currently working on projects in Africa, Continental Europe, the Middle East, Central Asia and the USA.

The BTO's independent, non-campaigning, stance is seen as important by many organisations and we regularly undertake impact assessment work and provide impartial advice to regulatory institutions. Examples include reviewing a waterbird monitoring scheme in Kazakhstan, providing advice on Environmental Impact Assessment approaches to the offshore wind industry in the United States, setting up of a Mangrove Centre in Oman, advising on a canal development in Australia and the provision of advice to Unilever on how to improve the environmental sustainability of crops grown in developing countries. These types of project sit alongside our own research, such as the migrants and ecosystem service work in Africa.

### Helping design the Middle East Mangrove Centre, Oman

