

## 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.



**Please contact to discuss how BTO can help you:**

Dr David Noble (david.noble@bto.org)

British Trust for Ornithology (BTO)  
The Nunnery  
Thetford  
Norfolk  
IP24 2PU

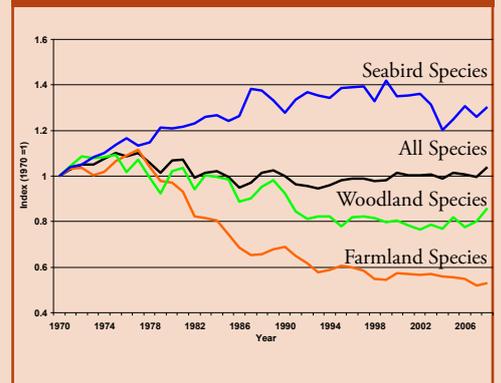
**Tel:** 01842 750050

**Fax:** 01842 750030

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



### 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



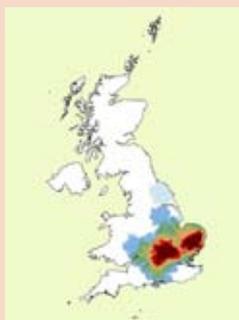
1970



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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## 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.



**Please contact to discuss how BTO can help you:**

Dr Mark Rehfisch, Director of Development ([mark.rehfisch@bto.org](mailto:mark.rehfisch@bto.org)) *or*

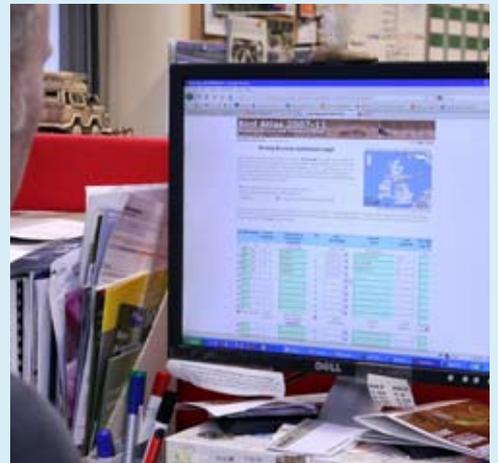
Dr Nigel Clark, Head of Projects ([nigel.clark@bto.org](mailto:nigel.clark@bto.org))

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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