

Monitoring terrestrial biodiversity

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Biodiversity monitoring



Photo: Emma Bramley

Biodiversity monitoring



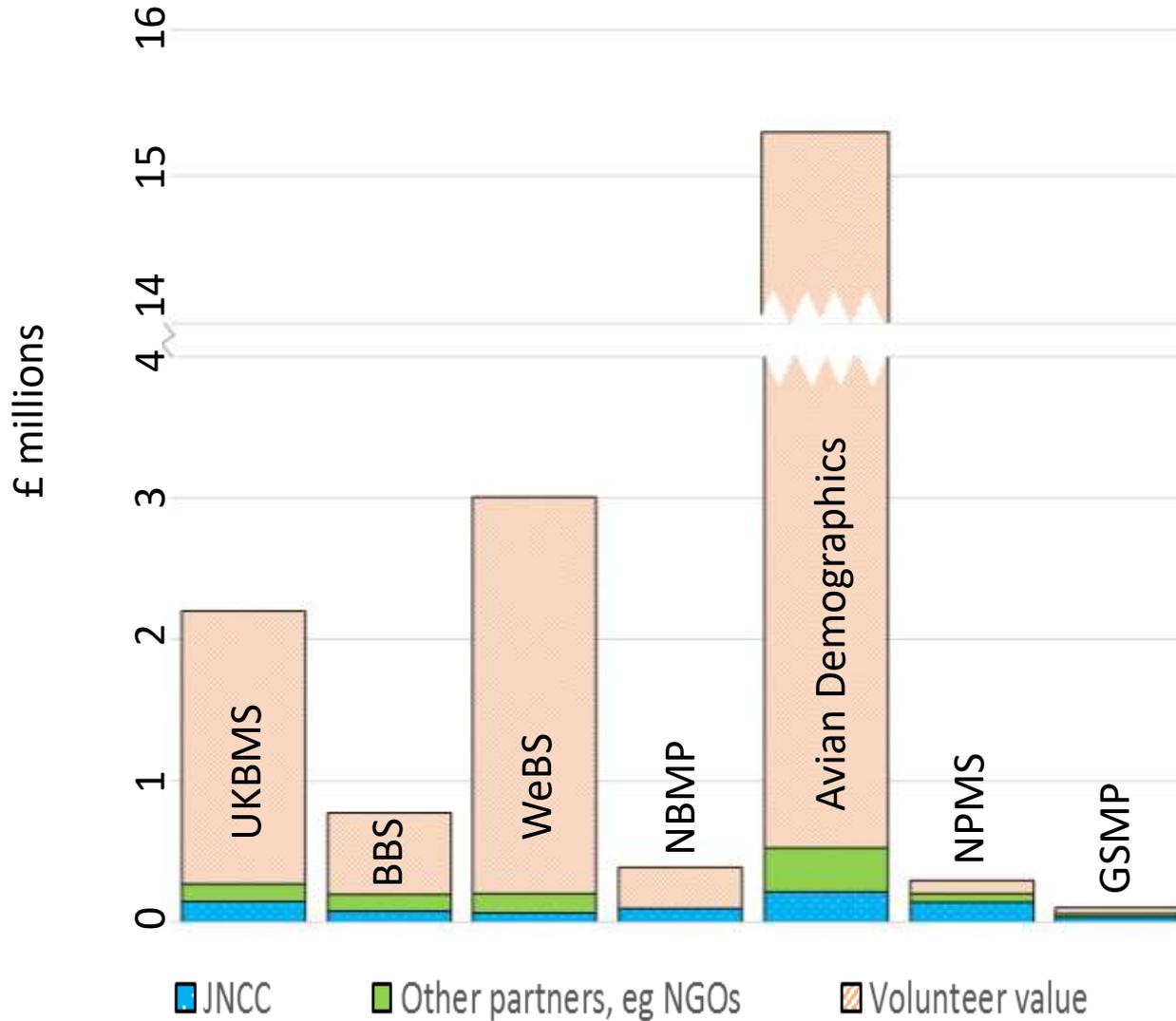
Natural England/Michael Hammett, 1998

Our approach

- Partnership approach
 - NGOs
 - Research organisations
 - Other environmental public bodies
 - Citizen scientists
- Scientifically robust
 - Peer reviewed protocols
 - Participant support and training
 - Massive sample size



Great value



Citizen science is not free...

but there is a high return on JNCC and partner investment

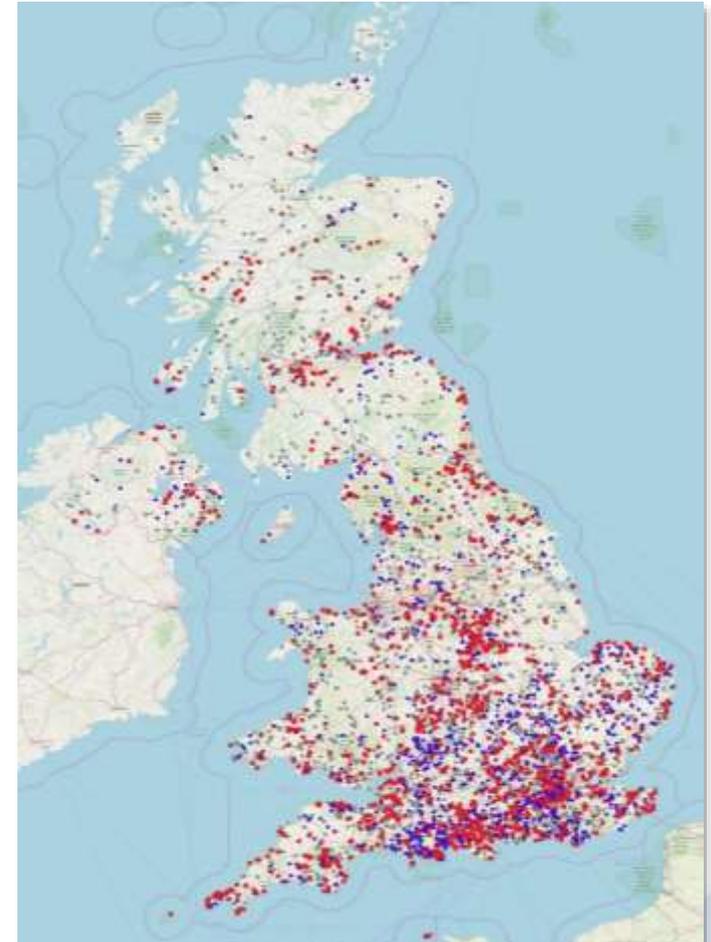
UK Butterfly Monitoring Scheme

Improving
representativity



- Partners: BC, UKCEH, BTO, JNCC
- 57 species trends
- 2500+ volunteers
- 2868 locations

- Transect based recording since 1979
- Wider Countryside Butterfly Survey introduced 2009



Traditional UKBMS sites (red circles)
WCBS squares (blue circles)
<https://www.ukbms.org/reportsandpublications>

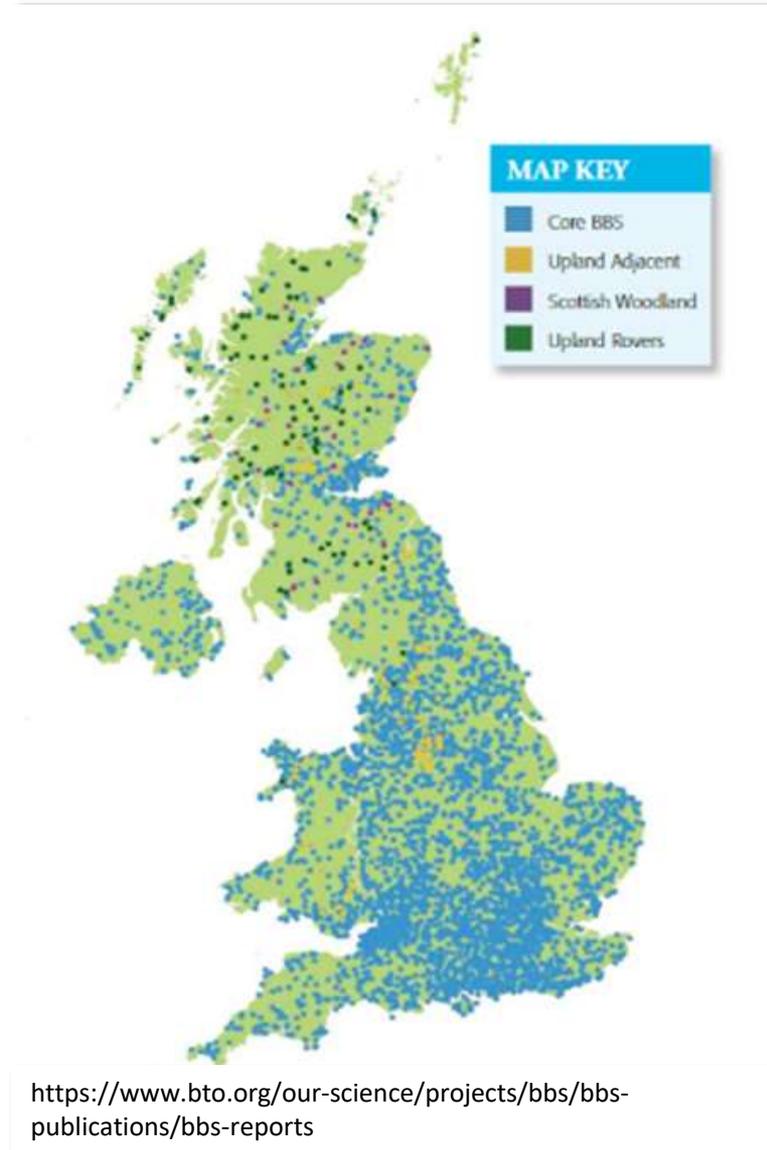
Breeding Bird Survey

Best coverage!



- Partners: BTO, JNCC, RSPB
- 234 species
- 4022 sites
- 2738 volunteers

- Random stratified sample network
- Filling coverage gaps



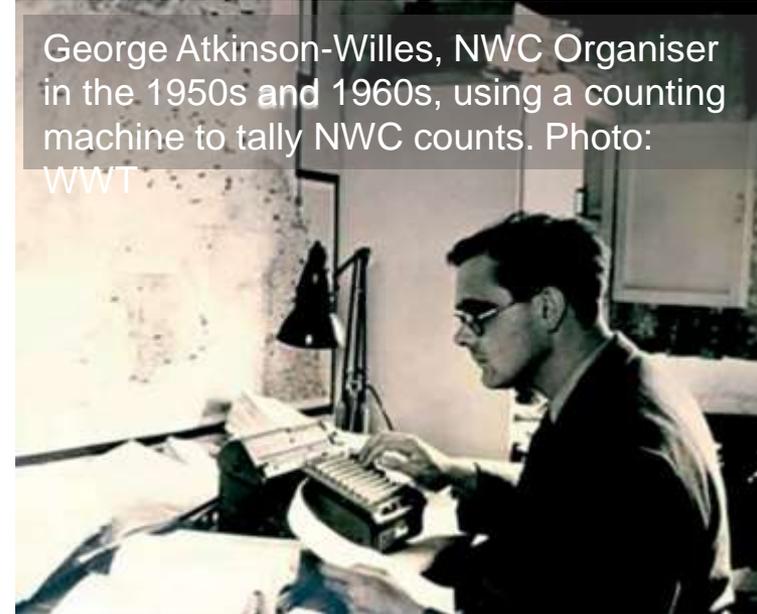
Wetland Bird Survey

Longest running!



- Partners: BTO, JNCC, RSPB, WWT
- Over 100 species
- 2847 wetlands
- 3195 volunteers

- Monitoring since 1947!
- Coordinated monthly 'core counts' and additional 'low tide counts' on estuaries



George Atkinson-Willes, NWC Organiser in the 1950s and 1960s, using a counting machine to tally NWC counts. Photo: WWT



WeBS 70th anniversary celebration

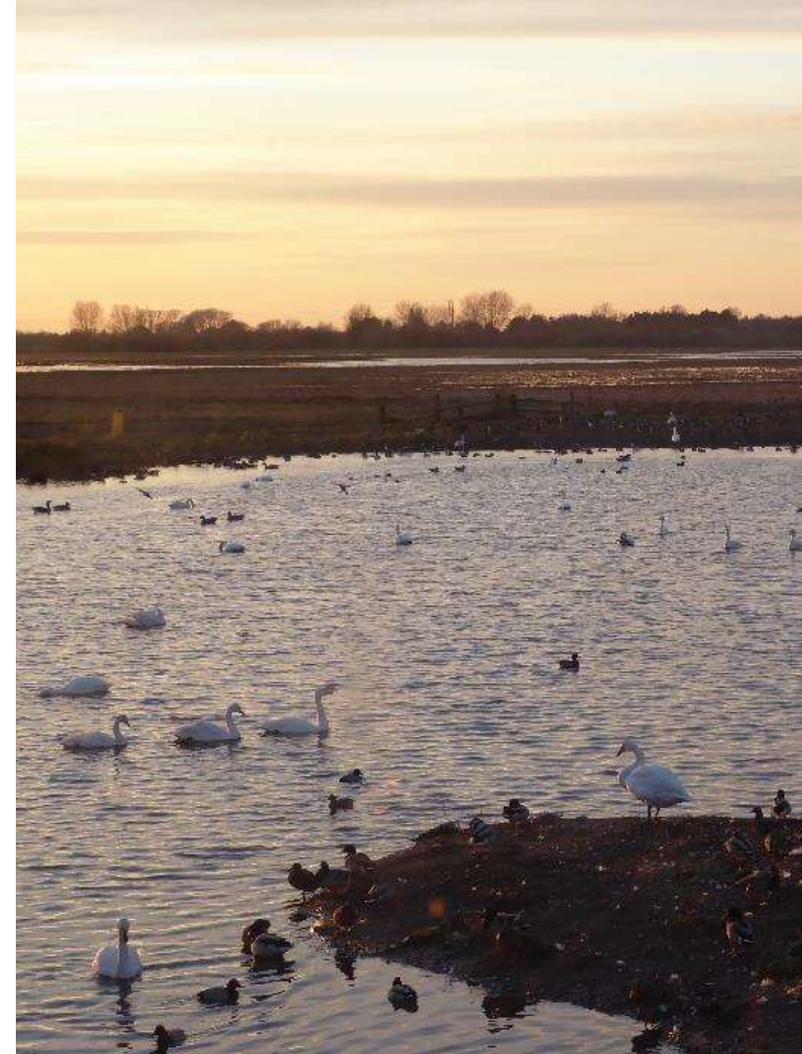
Goose and Swan Monitoring Programme

International
coordination



- Partners: WWT, JNCC, SNH
- 13 species native geese and swans
- Monitoring since 1950s

- Coordinated censuses on selected dates
- International coordination for some species



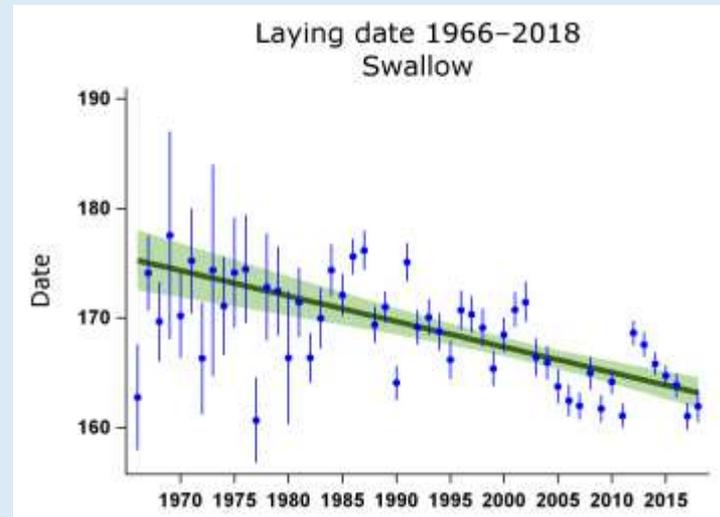
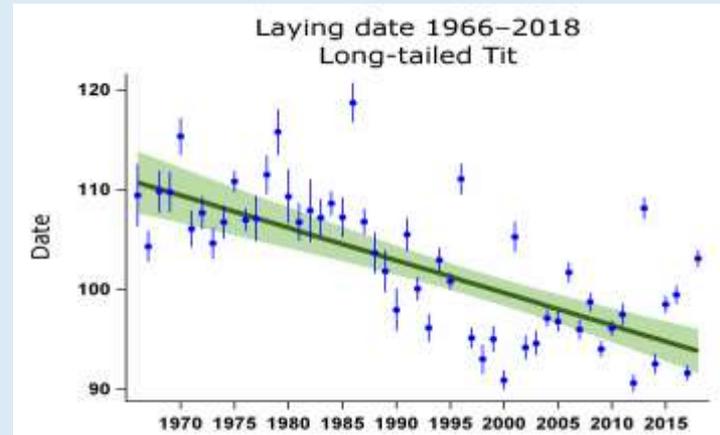
Avian Demographics Scheme

Most time
volunteered!



- Partners: BTO, JNCC
- Time input from volunteers worth over £15 million per year!

- Nest Record Scheme
- National Ringing Scheme



From: Bird trends online report
<https://app.bto.org/birdtrends>

National Bat Monitoring Programme

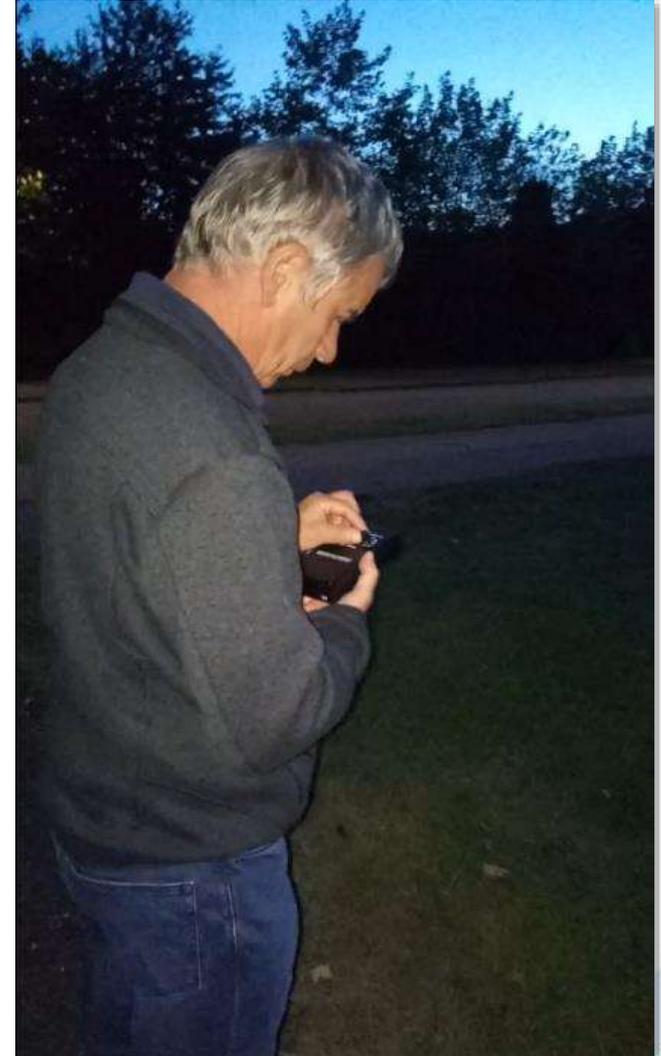
Making use of
technology



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Partners: BCT, JNCC,
NRW
Population trends for
11 of the UK's 17
breeding bat species
Since 1996

- Four surveys:
 1. Field Survey
 2. Waterways Survey
 3. Roost Counts
 4. Hibernation Survey
- Developing new multispectral static bat detector approach



Newest scheme!

National Plant Monitoring Scheme



- Partners: Plantlife, BSBI, UKCEH, JNCC, NIEA
- 11 broad habitats
- 872 squares with data so far...

- Newest scheme - 5 years old!
- Launched following several years of development to ensure scientifically robust and 'volunteer-friendly'



Unstructured recording

Biological Records Centre

- UKCEH and JNCC
- Over 80 schemes
- Over 15,000 species



Rare Breeding Birds Panel

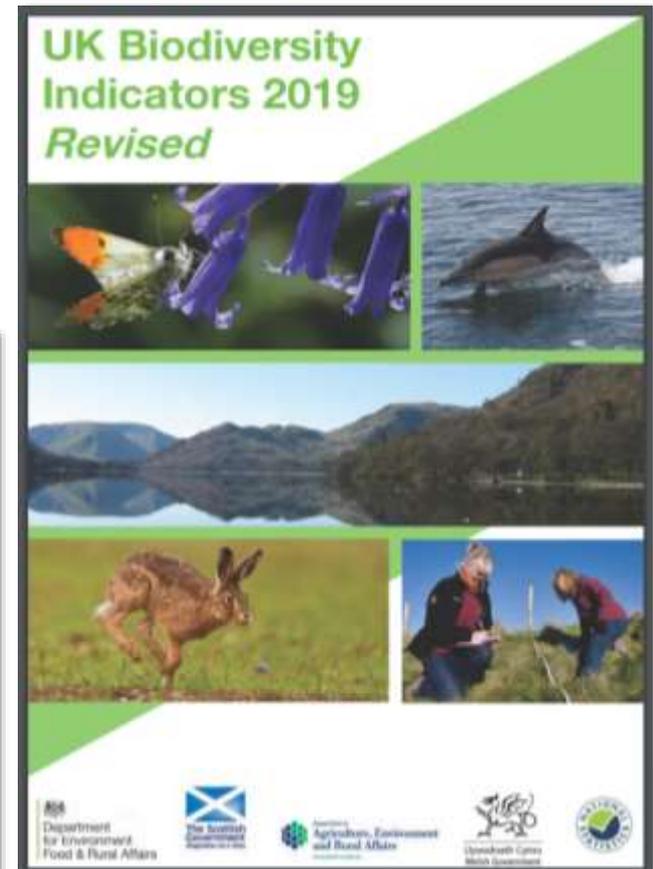
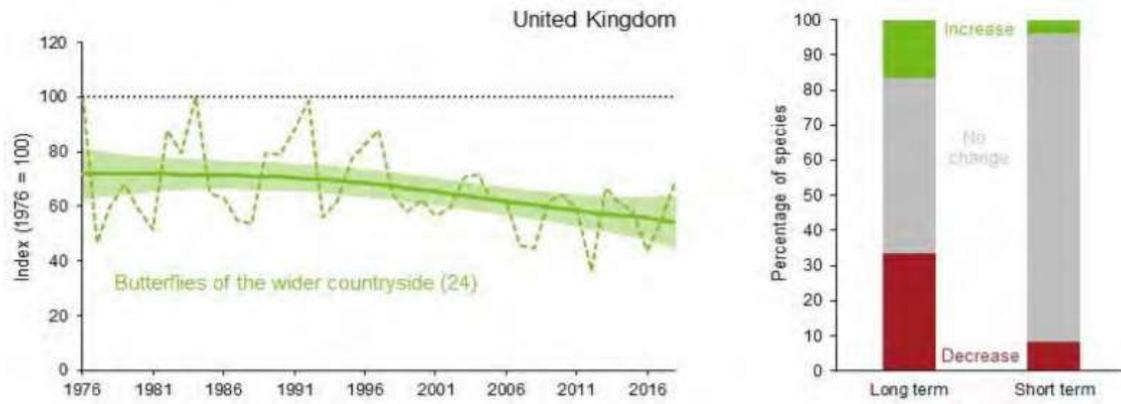
- Collates and manages records of rare and scarce breeding birds



Statistics and indicators

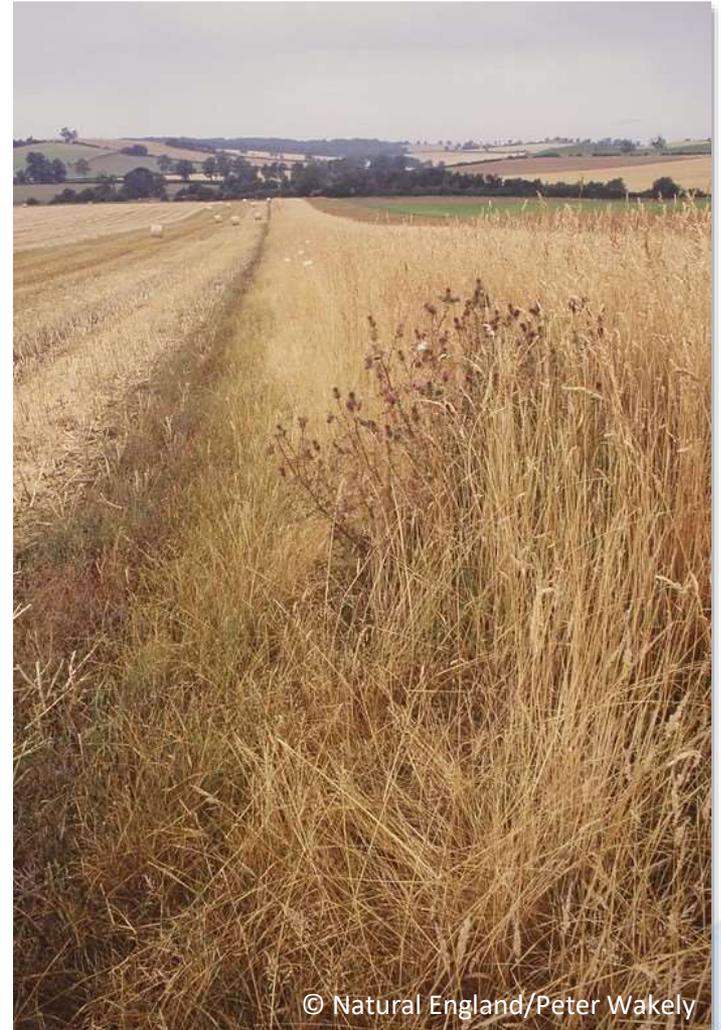
- Official Statistics
- Trends at UK and country level where possible
- UK biodiversity indicators

Figure C6bi. Trends for butterflies of the wider countryside in the UK, 1976 to 2018.



How are results used?

- Influences policy
- Helps meet reporting requirements
- Local land management
- Scientific research



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Future priorities...

- Maintain the evidence base
- Improving the evidence base
 - Make better use of the data we have through analytical developments
 - Making better use of new technologies, e.g. new acoustic monitoring approaches
 - Better integration with other data sources, e.g. Earth Observation

Thank you for listening

Thank you to all our partners

Thank you to all citizen scientists who contribute

Keep in touch
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