

UK Nature Barometer



Surveillance and Monitoring Schemes

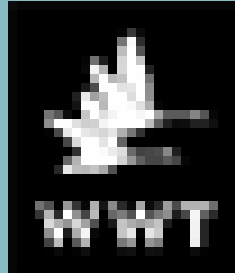
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Joint Nature Conservation Committee

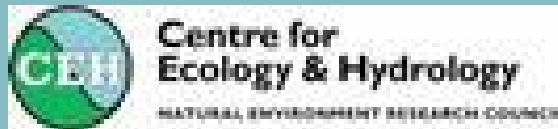
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Acknowledgements



M TRACKING
Mammals
PARTNERSHIP



Plantlife International
The Wild Plant Conservation Charity



- **Partners**
 - NGOs
 - Agencies
 - Government
- **Volunteers**
 - Many 1000s
 - Centuries
- **Publications**
 - For primary results
 - Usually available from partners websites

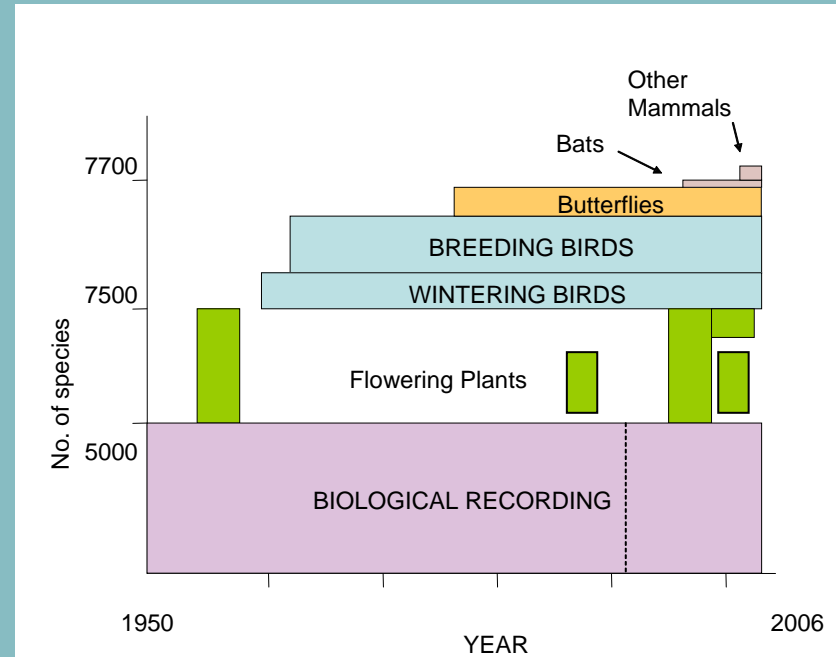
Species Schemes

Primary Purpose

- **Restricted to the scope of each monitoring scheme**
- **Status and trends**
- **Conservation planning**
- **Indicators**

Secondary use

- **To act as a proxy to fill gaps**
- **To address issues that cut across the individual schemes**



Scope

- **Geographic Coverage**
 - Blanket coverage at basic level of biological recording
 - Less for more systematic schemes
 - More variable the smaller the geographic area
- **Biodiversity**
 - Comprehensive at simplest level
 - Birds, butterflies, moths and some mammals have systematic long time series.

Surveillance schemes

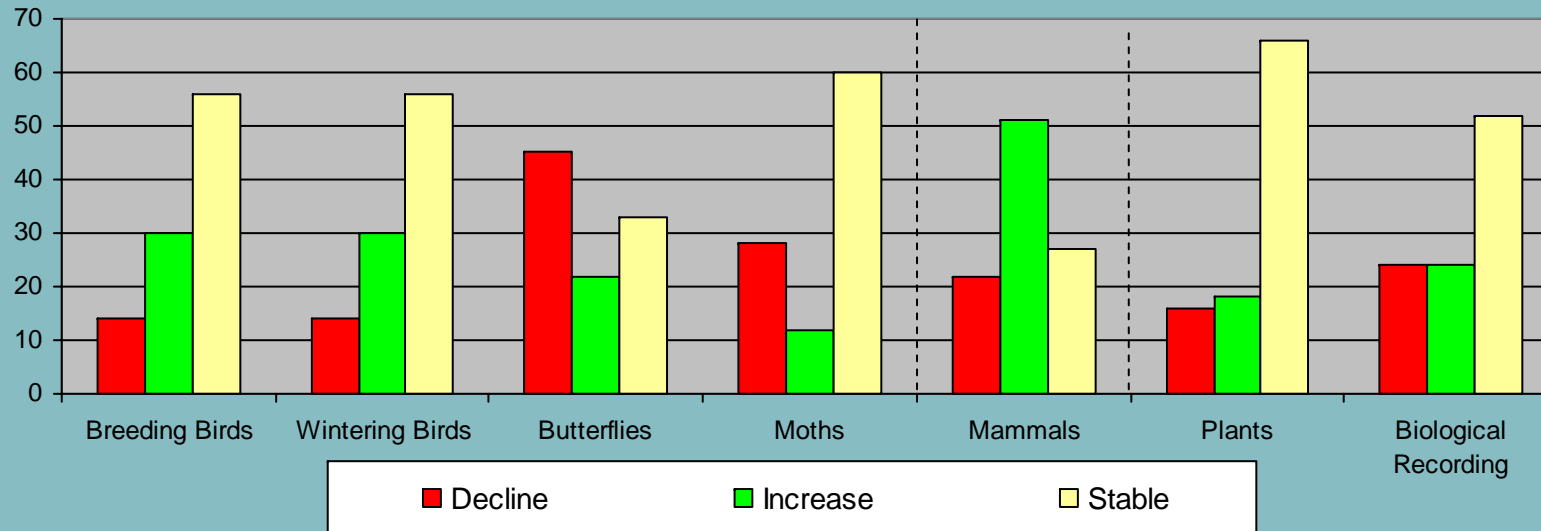
Butterfly Monitoring Scheme
Other butterfly transects
Rothamstead light traps
Wetland Bird Survey
Breeding Bird Survey (Mammals)
Breeding Bird Survey
National Bat Monitoring Scheme

National Recording Schemes

Crayfish Recording Scheme
British Conchological Society
Crane-fly Recording Scheme
Aquatic Heteroptera Recording Scheme
Carabid Recording Scheme
Orthopteroid Orders Recording Scheme
Spider Recording Scheme
Hoverfly Recording Scheme
British Dragonfly Society
British Bryological Society
Botanical Society of the British Isles



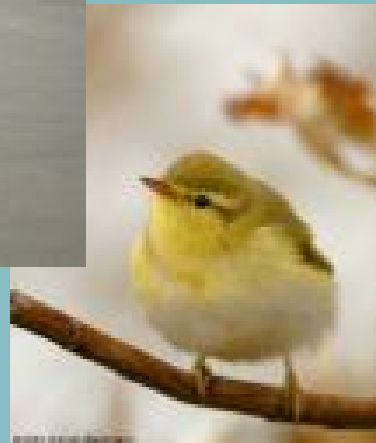
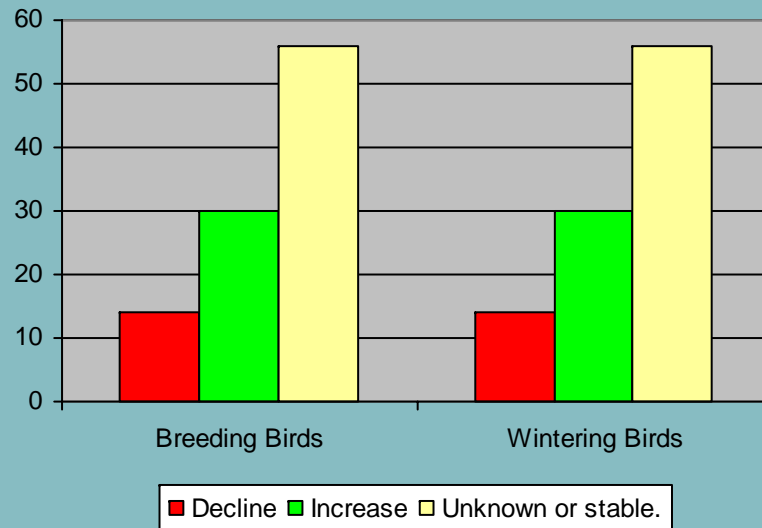
Results – Trends (last ten years)



- **Rapidly changing species (>25% change in 10 years) are selected as a means of comparing across schemes.**
- **For plants and mammals statistically significant declines are selected as opposed to declines over 25%.**
- **Trends for plants and from biological recording are based on distributional change which is generally less sensitive and are based on longer time series (25 years for biological recording and 17 years for plants).**
- **The proportion of species with unknown trends varies greatly for each species group.**
- **14% - 45% declined rapidly over the last 10 years.**

Results – Birds

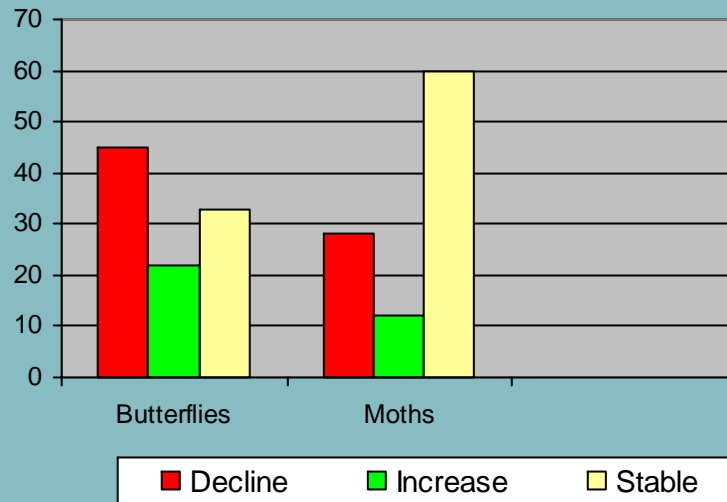
BTO, RSPB, WWT, JNCC



- The majority of species are stable or increasing which is very good news
- Long term declines in farmland and woodland species have largely halted
- Some species e.g. Grey Partridge and Lesser Spotted Woodpecker continue to decline.
- Trends in waterbirds and seabirds might have a strong climate change component

Results – Butterflies/Moths

BCS, Rothampstaed, CEH

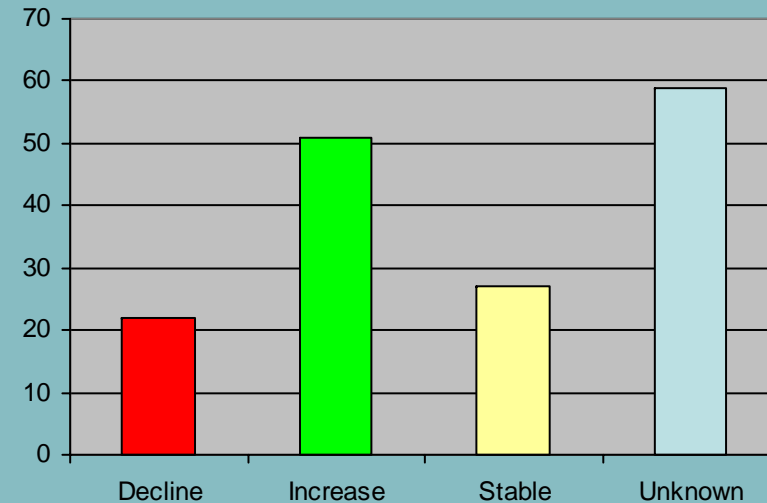


- In general butterflies and moths have a larger proportion of declining species than other groups.
- Declines in moths are more pronounced in the South and especially the South-east.
- Habitat loss is the most common factor causing decline
- Widespread butterfly species have fared better than habitat specialists.
- Climate change could be a significant factor if trends are investigated more fully.

Results – Mammals

TMP, BCT

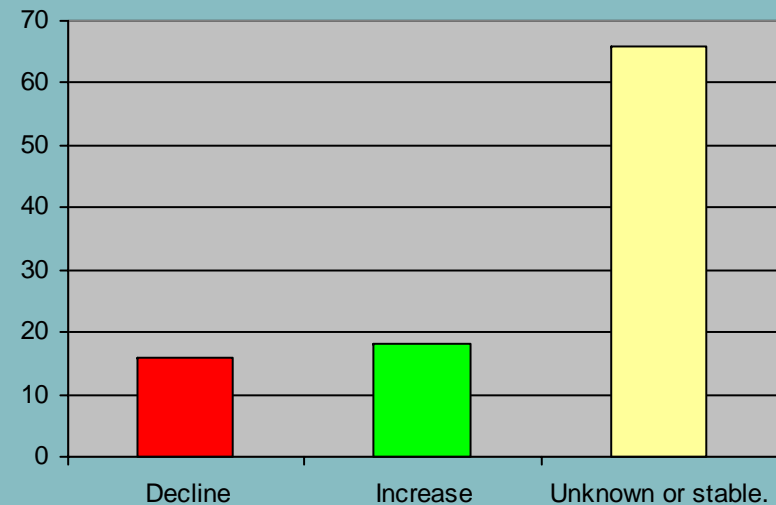
- Long term declines in mammals appear to have largely reduced over the last 10-15 years.
- Habitat loss and alien species are thought to be the main pressures
- Some species such as dormouse and red squirrel continue to decline despite considerable conservation effort.



Vascular Plants

BSBI, Plantlife

- Long term declines in arable species have slowed recently.
- Readily dispersed southern species are moving north in response to climate change
- Eutrophication and inappropriate grazing are other major pressures.
- Species of low nutrient habitats such as heathland, acid grassland and calcareous grassland have fared relatively badly.
- Many species suffer from overshading in woodlands



Habitats

Countryside Survey and UK BAP

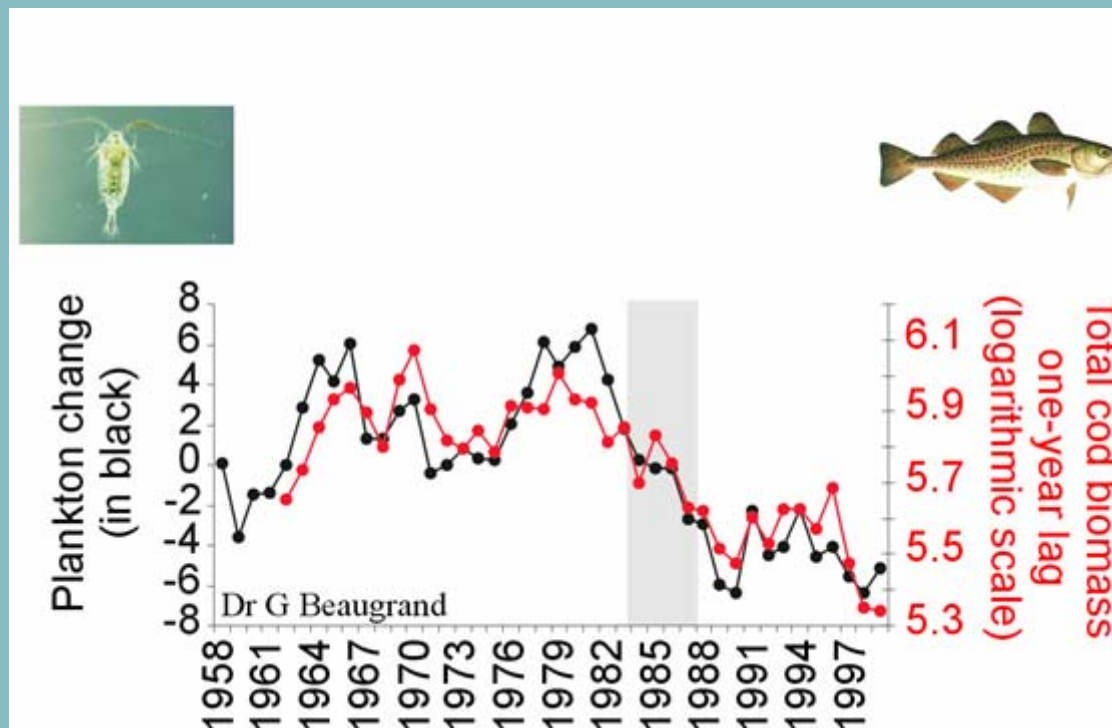


- **UK BAP**
 - 45 Priority habitats of which trends estimated for 34
 - 28 show signs of recovery or stability and 6 continue to decline.
- **CS2000**
 - The rate of loss of semi-natural habitat area is decreasing.
 - There is some evidence that habitat quality continues to decline.
 - Eutrophication particularly diffuse nitrogen deposition is a major pressure.
- **Protected Sites – later presentation**

Marine

- Messages tend to be ambiguous
- An integrated monitoring strategy is being developed
- Mapping seabed habitats is a critical first step to monitoring
- Climate Change and over fishing are thought to be the major pressures.

Long-term changes in plankton and total cod biomass (with a one-year lag)



Gregory
Beaugrand, Keith
M. Brander, J.
Alistair Lindley,
Sami Souissi &
Philip C. Reid.
Nature. 426 pp
661-664. 2003

Using schemes together

- **Be creative!**
- **Explore other dimensions**
 - Ecosystem functions?
 - Environmental pressures
 - Different spatial scales
- **Think of species as ecosystem and habitat components**
 - Develop ecological profiles for the species we monitor
- **Do justice to the volunteer contribution**
- **Ask the questions you need answered not those that fit the data**
- **Share your results**
- **Play with the data**

Results – Common Messages

- **Evidence that the 1980s decline is slowing for most terrestrial species in the 1990s**
 - The declines do not yet seem to have reversed. 24% of nearly 4000 species declining long term as opposed to 20% of 1288 species monitored over the last 10 years.
 - Differences between widespread versus localised/rare species
 - Declines slowing for woodland and farmland dependant species but nutrient poor habitats such as heathlands not faring so well
- **Conservation action seems to be working in most cases but some exceptions e.g. for some mammals**
- **Climate change and overfishing are thought to be the main pressures within the marine environment**
- **Information on habitat quality and the marine environment is less comprehensive**
- **By pulling all of our efforts together – The nature barometer, we can obtain an overview of the state of UK nature and the pressures it faces.**

Conclusions

- **Dealing with Mixed Messages**
 - NBN, Indicators, Nature Barometer all help to bring together different formats and types of biodiversity data and results.
 - This helps to support multiple needs, obligations and reporting requirements
- **Policy Relevant Information**
 - In order to report and inform remedial action we need to be able manipulate data quickly. Indicators, new analytical techniques and research all speed up the use of data.
- **We need to halt the decline in UK biodiversity quickly.**
 - The next task will be to enhance and accelerate restoration where necessary and the longer biodiversity continues to decline the more this will be needed.
- **JNCC's work on Wildlife Statistics contributes some of these aspects to the barometer**