

u3a Hunstanton Environment Group

Bird population change index as indicator of environment change.

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Introduction and conclusions

This review of current reports on bird population changes is used to establish how useful the data is as an indicator of environment change. This article considers bird population changes and their habitats.

The principal conclusions of this review are:

The total bird population of the UK has declined by about 18% from 1970 to 2025. This single geographical indicator however hides a significant variation in the species and environments.

The population changes in England for the following environments are a better guide to the changes taking place in England

Farmland: 62% decline

Woodland: 36% decline

Wetland: 11% decline

Seabirds: 14% decline

Upland birds: 13% decline

Wintering waterbirds: 92% increase

The overall population changes in Scotland indicate an increase of 12% with the following environmental variations:

Woodland: 62% increase

Urban: 25% increase

Farmland: 10% increase

Upland: 20% decline.

UK and England

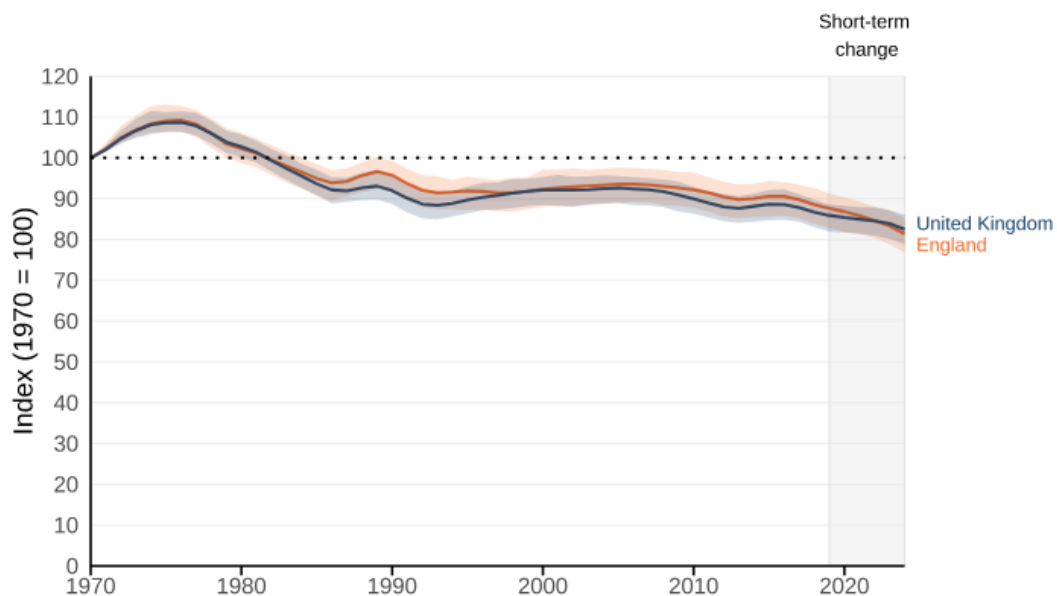
Department of the Environment, Food and Rural Affairs (DEFRA) publish an annual report on wild bird population changes in the UK and England. The latest report is Wild bird populations in UK and England 1970 to 2024 ⁽¹⁾.

The following chart refers to 130 wild bird species in the UK and 118 in England, from 1970 to 2024.

The overall trend is a short increase from 1970 to about 1975 then a relatively steep decline to about 1990 then a slow decline thereafter with the UK and England data following the same pattern.

Reading from the chart the overall decline in wild bird populations in the UK from 1970 to 2024 is 18%.

Figure 1.1: Populations of 130 wild bird species in the UK and 118 in England, 1970 to 2024



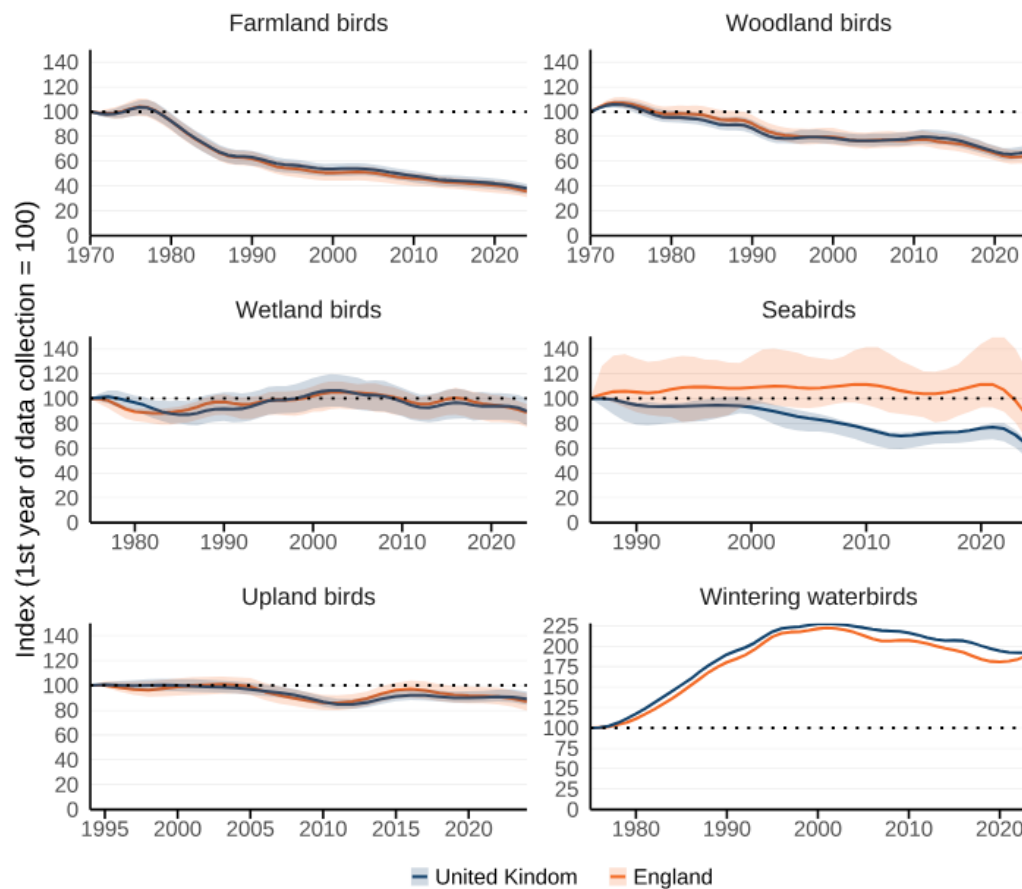
Source: British Trust for Ornithology (BTO), Royal Society for the Protection of Birds (RSPB), and the Joint Nature Conservation Committee (JNCC).

The all-species data disguises the fact that for some species and some habitats significant increases do occur and for some habitats very significant declines are recorded.

The report includes population changes in six different habitats;

- Farmland birds,
- Woodland birds,
- Wetland Birds,
- Seabirds,
- Upland birds,
- Wintering waterbirds.

Figure 1.2: Populations of wild birds in the UK and in England by habitat, 1970 to 2024



Source: British Trust for Ornithology (BTO), Royal Society for the Protection of Birds (RSPB), and the Joint Nature Conservation Committee (JNCC).

The following notes refer to changes in England. The data for Scotland follows and contrasts significantly with respect to some species.

Farmland

The farmland species show the greatest decline with 62% since 1970. Note that 67% of the land in England is devoted to agriculture. The greatest decline was between 1970 and 1980 in response to rapid changes to farmland management practices. The rate of decline has slowed but for some species that are specialised farmland birds the decline is still quite severe, e.g. turtle dove and tree sparrow.

Woodland

The woodland birds show a 36% decline over the period, although there are signs that woodland birds are recovering with a 6% decline in recent years.

Wetland

The wetland birds show a decline of 11% in England over the period with most of this in the early years with the current rate now at 7%. This indicator is less reliable because the nature of the habitats varies considerably from inland water ways to ponds and wet marshes. Some species are abundant while others are showing steep declines, e.g. yellow wagtail and Cetti's warbler, respectively.

Seabirds

The seabird population in England has declined by 14% since 1986 and some evidence that a steeper decline since 2019. Covid affected the collection of data and confidence in the statistic is not high. Since 2020 Highly Pathogenic Avian Influenza (HPAI) also influences the data.

Upland

Upland bird populations have declines by 13% in England but recent levels have stabilised. Some species, e.g. red kite are increasing whereas red grouse are declining.

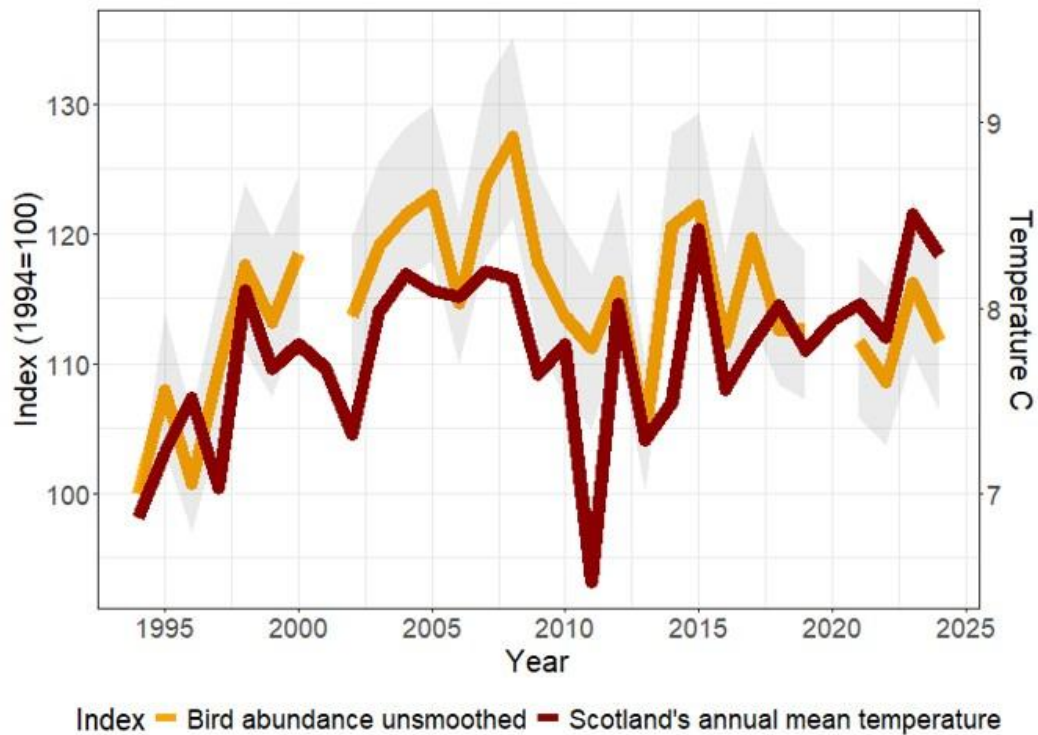
Wintering waterbirds

There has been a 92% increase in wintering waterbirds over the period. This is measured from September to March. The level has stabilised over the last 5 years with little or no change.

Scotland

One significant factor that emerges from the Scottish ten-year report ⁽²⁾ is that bird populations are sensitive to temperature. The following graph taken from that report shows a correlation between the overall population and temperature.

Figure 2.1



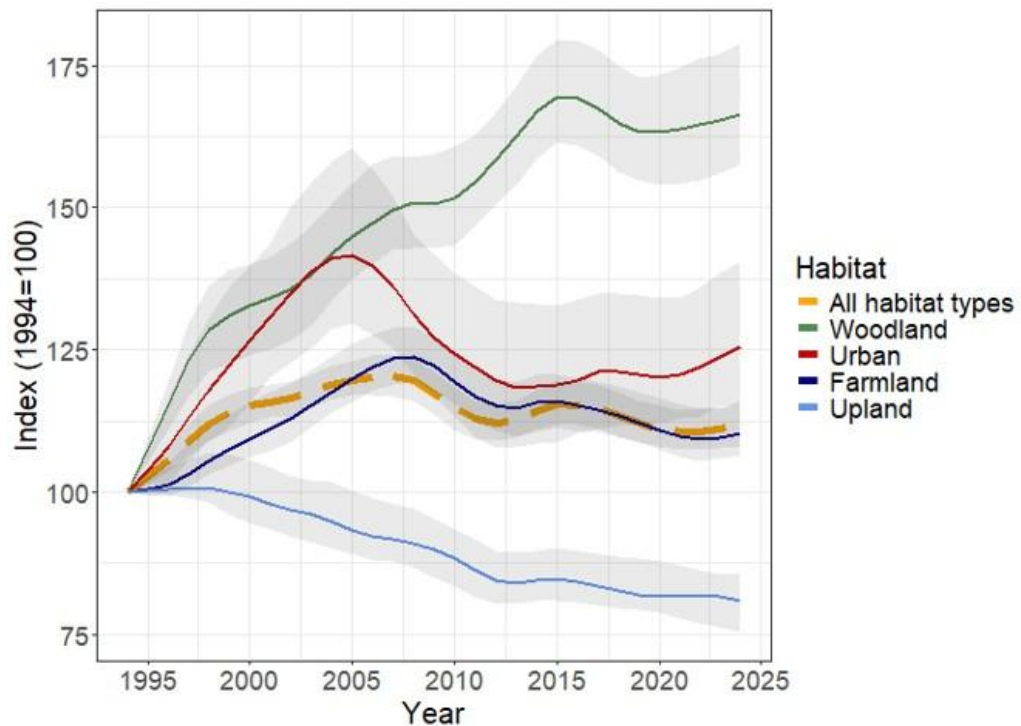
The temperature is given on the right of the chart and confirms an increase of about 1°C over the 30-year period. The breaks in the bird population are years where there is no or insufficient data. The temperature is the average from the June to the May of the period prior to the bird count. The bird count includes the survival rate over the winter period.

The index given on the left-hand side of the chart indicates the overall bird population relative to 1994 when data collection started. In general, the bird population in Scotland in 2025 is a healthy 15% above the level counted in 1995.

However, a closer examination of the graph shows that there was a significant increase in the bird population up to about 2007 but since then there is a downward trend. This implies that there are factors other than temperature that affect the result.

The report provides data on the bird population by environmental types, as illustrated in the following chart.

Figure 2.2



The all-habitat types yellow-dotted line on the chart is a smoothed average figure and shows the increase and downward trend.

The woodland (green line) shows a continued increase in woodland bird population.

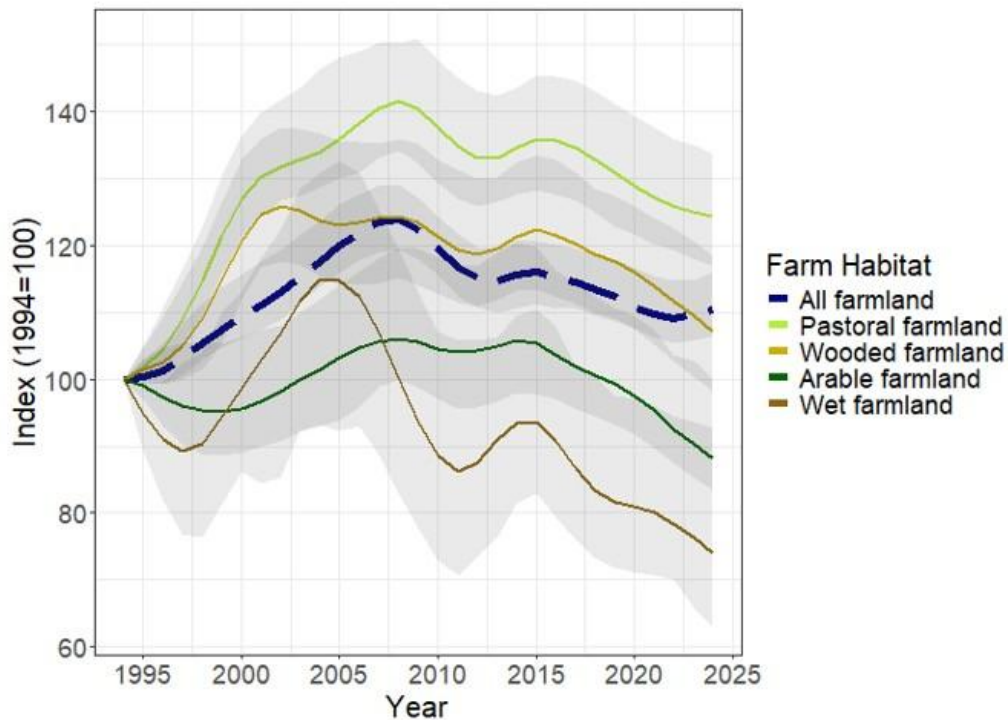
The red urban line increases then declines rapidly but is now showing a slight increase. It is believed that the decline may be related to bird feeders spreading disease among the urban species.

The upland birds have a long-term decline, the reasons for which are not yet understood.

The farmland dark-blue line again shows an increase followed by a decline which may be levelling out. It is suggested that the decline in the farmland population is due to changed farming practices, for example, increased use of pesticides.

Farmland by farmland types

Figure 2.3



The Joint Nature Conservation Committee (JNCC) report: Official statistic on population trends for breeding birds in the UK⁽³⁾ summarises the drivers for the change in bird population as follows:

Agri- environmental

Many of the significant changes to farmland bird populations are historic and related to changes in farmland management practices in mid-20th century. In particular, the reduction of hedgerows and suitable nesting places and food sources in early spring.

Colonisation

Examples of birds taking advantage of new habitats are the red kite and the ring-necked parakeet.

Climate change

Climate change has been implied in the change in abundance of the willow warbler and the divergence in the trends of several birds between Scotland (increase) and England (decline) may also be climate change related.

Disease

Trichomoniasis, Usutu virus and Highly Pathogenic Avian Influenza (HPAI) are affecting a number of species.

Migration routes

The cuckoo and the nightingale populations are dependent on suitable locations for over wintering and flight paths.

Insect abundance

The abundance of insects at the breeding time can be critical.

The Royal Society for the Protection of Birds (RSPB) annual Big Garden Birdwatch⁽⁴⁾ provides data on a habitat that is not covered by the major bird reports. To see the trends, it is necessary to view the past annual reports although each report indicates where the trend is up or down.

References and Resources:

The first three are refer to in the article, the fourth and fifth references provide useful background data.

(1) <https://www.gov.uk/government/statistics/wild-bird-populations-in-the-uk/wild-bird-populations-in-the-uk-and-england-1970-to-2024>

(2) <https://www.nature.scot/doc/official-statistics-scottish-terrestrial-breeding-birds-1994-2024>

(3) <https://www.jncc.defra.gov.uk/our-work/official-statistic-on-population-trends-for-breeding-birds-in-the-uk/>

(4) <https://www.rspb.org.uk/whats-happening/news/the-big-garden-birdwatch-twentysix-results-are-in>

The following link is to a report that gives detailed information on individual species and habitats.

(5) <https://www.bto.org/sites/default/files/BBS-Report-2024.pdf>

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