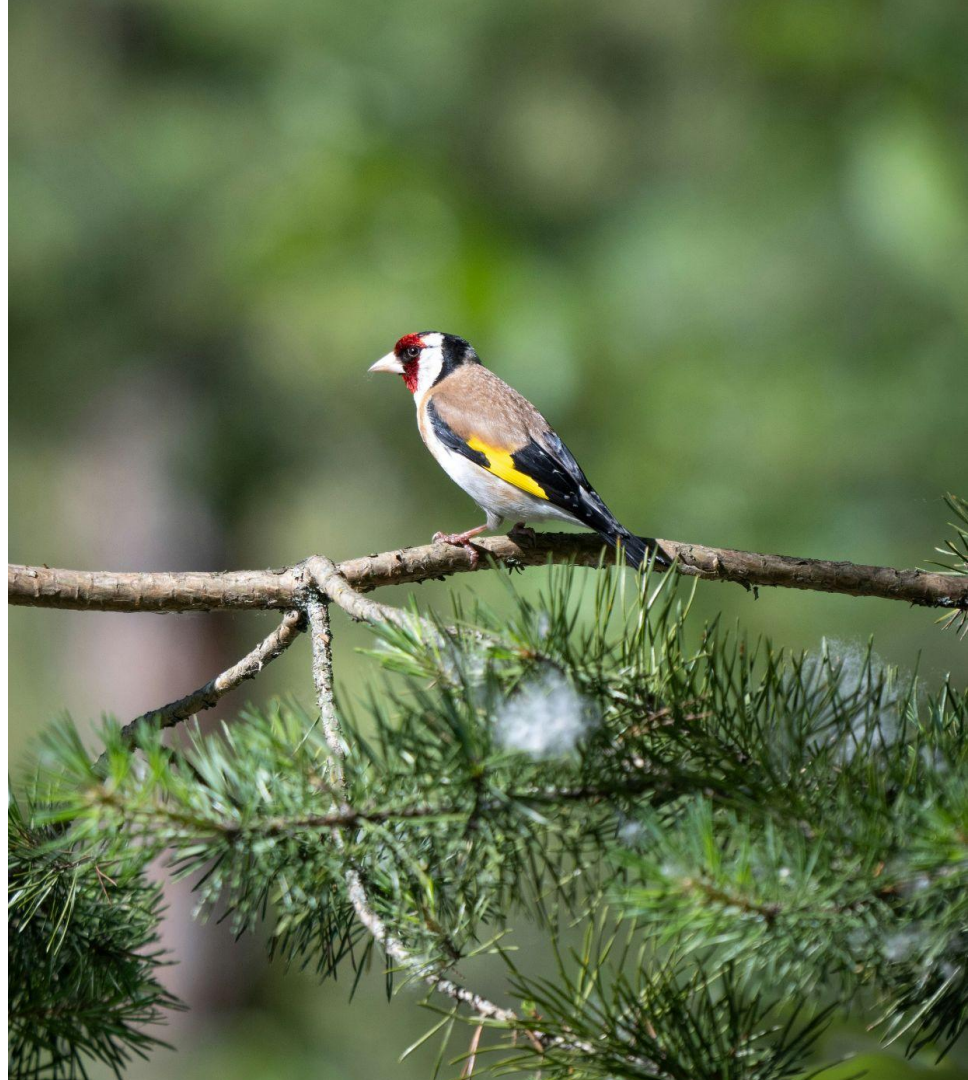


Birds as environmental indicators

How to get to know them and why it is important



What is an indicator?

An indicator is a measurable variable that provides insights into a specific complex phenomenon or process.

In environmental studies: an organism or ecological community so strictly associated with particular environmental conditions that its presence is indicative of the existence of these conditions.



Why do we need indicators

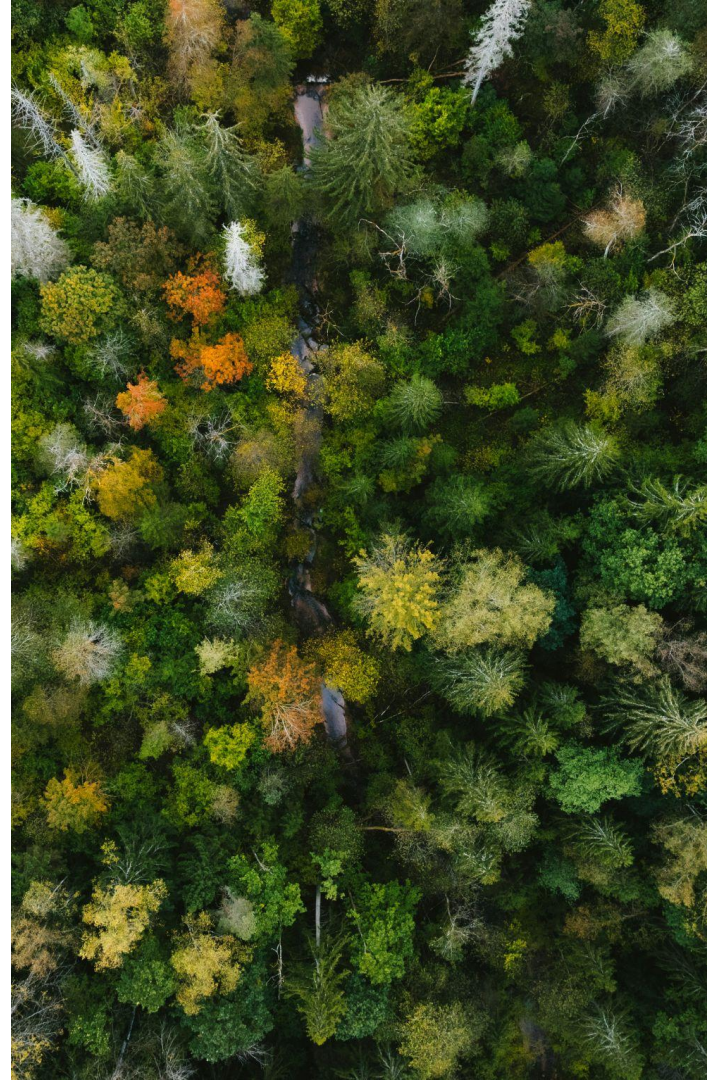
- Indicators are meant to quantify and communicate complex phenomena, trends and patterns in a simple manner.
- Their intention is to help decision makers formulate policy and then modify it in response to changes of the indicators.
- Public access to indicators allows the public to judge the success of decision making.
- Indicators are not a substitute for the detailed knowledge needed to assess the causes of changes or to formulate strategies or plans in response.



Biodiversity indicators

Like all indicators, they need to have a variety of properties which are often conflicting:

- *Quantitative* – so that they can be formally measured
- *Simplifying information*
- *User driven*
- *Scientifically credible*
- *Responsive to changes* – so that trends are picked up without undue delay
- *Easily understood*
- *Realistic to collect*
- *Susceptible to analysis* – so that the data can be disaggregated in pursuit of possible causes of trends



Biodiversity indicators

Species-Based Indicators

Species richness: the number of species present within a given area.

Species abundance: the number of individuals within a species.

Community composition: the relative abundance of different species.

Ecosystem-Based Indicators

Ecosystem services: the benefits that humans derive from functioning ecosystems, such as clean water, pollination, and climate regulation.

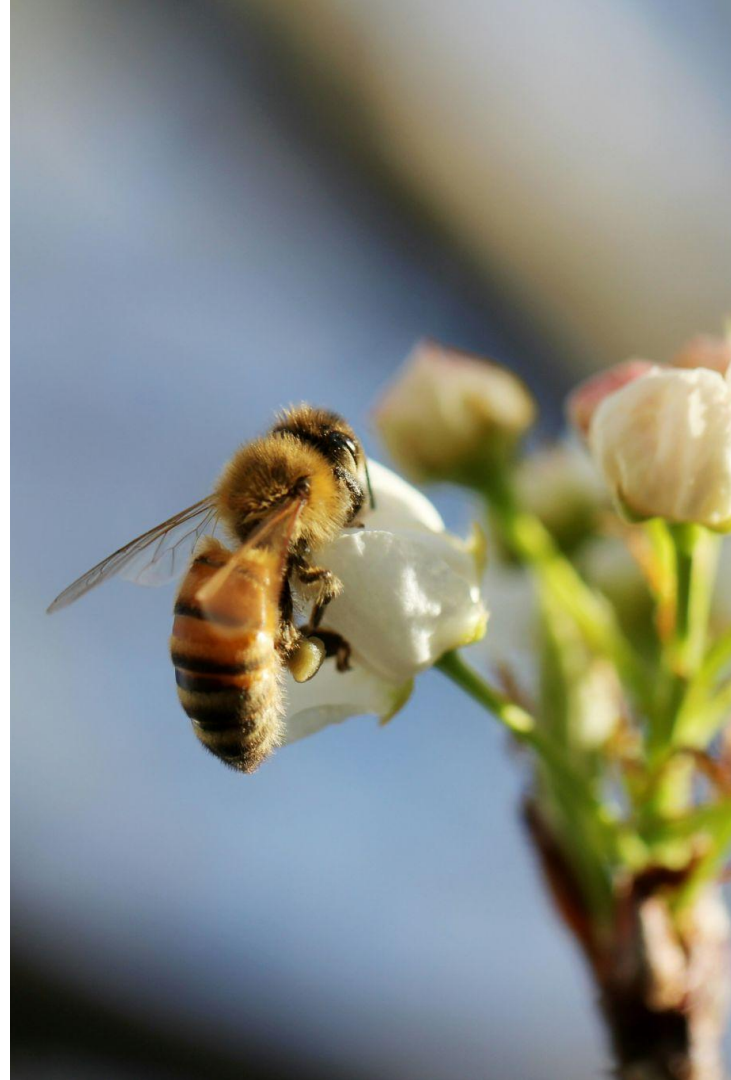
Habitat quality: the condition and integrity of habitats.

Landscape connectivity: the degree to which habitats are connected, enabling species to move and interact.

Genetic Indicators

Genetic diversity: the variety of genetic traits within a population or species.

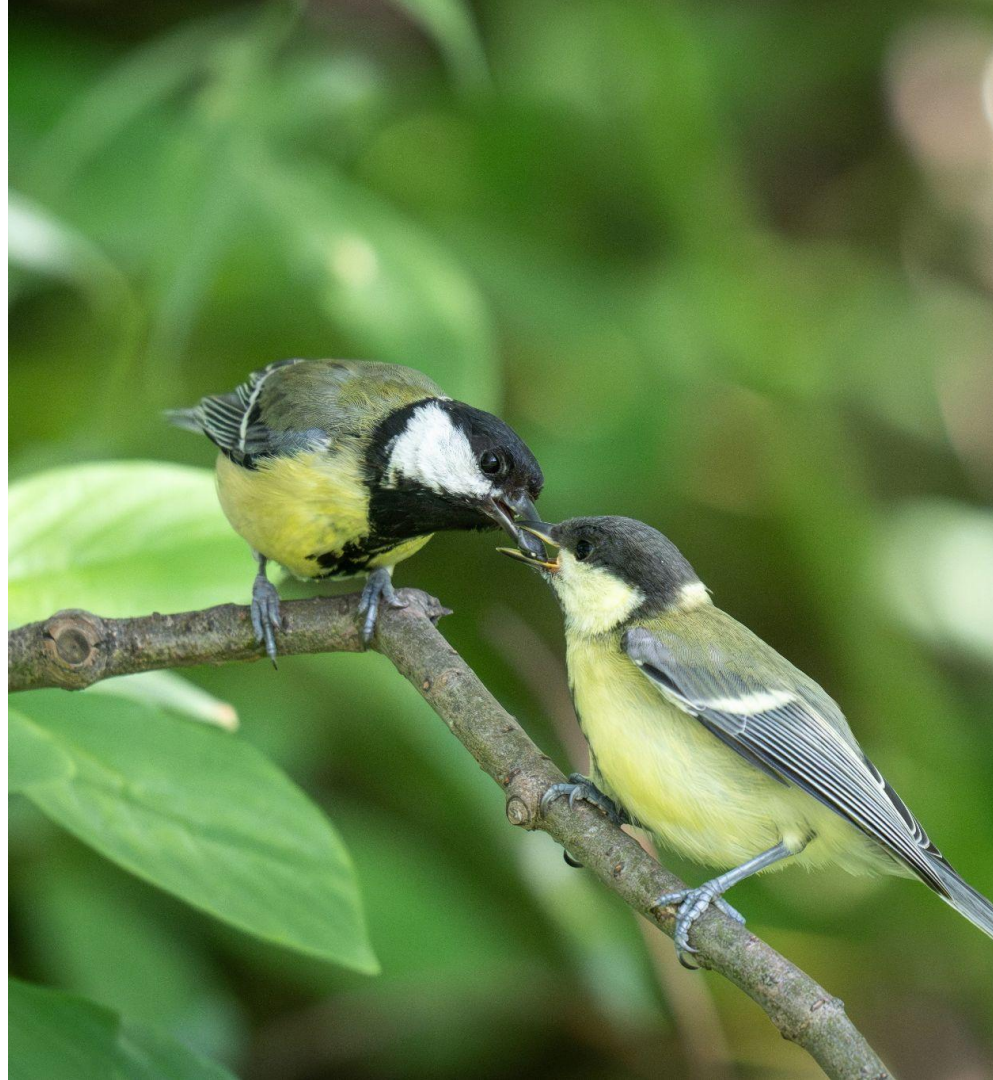
Genetic erosion: the loss of genetic diversity over time, often due to factors such as habitat fragmentation or inbreeding.



Birds are not perfect environmental indicators:

- they are generally less specialised within microhabitats than, for example, insects or plants
- on a local scale, patterns of bird distribution may not always match well with distribution patterns of other taxa
- birds are likely to work better as biodiversity indicator taxa in terrestrial habitats (especially well-vegetated ones) than in either freshwater or marine habitats

But on a larger scale, birds are very useful indicators of species richness and endemic patterns.



But still very good: in terms of reflecting ecosystem condition

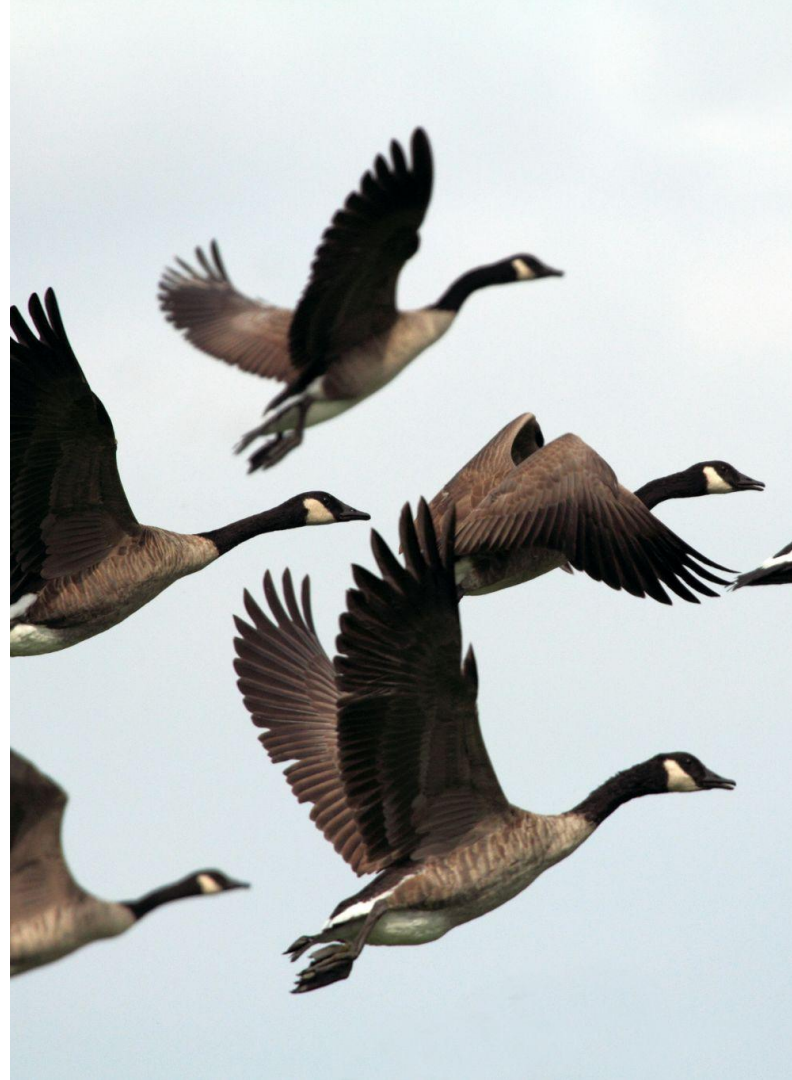
Bird taxonomy is well known and relatively stable.

Bird distribution, behaviour and ecology are much better known than for other comparable taxa.

Bird population trends often mirror those of other species. As birds generally occupy high trophic levels in food webs and are sensitive to environmental change, their population trends often reflect those of other taxa.

Birds are mobile and responsive to environmental change. Birds are often highly sensitive to changes in their environment, and can therefore act as early warning systems of threats to nature.

Bird distribution generally reflects that of many other wildlife groups. Areas that support a high diversity of birds are often also important for other groups of species.



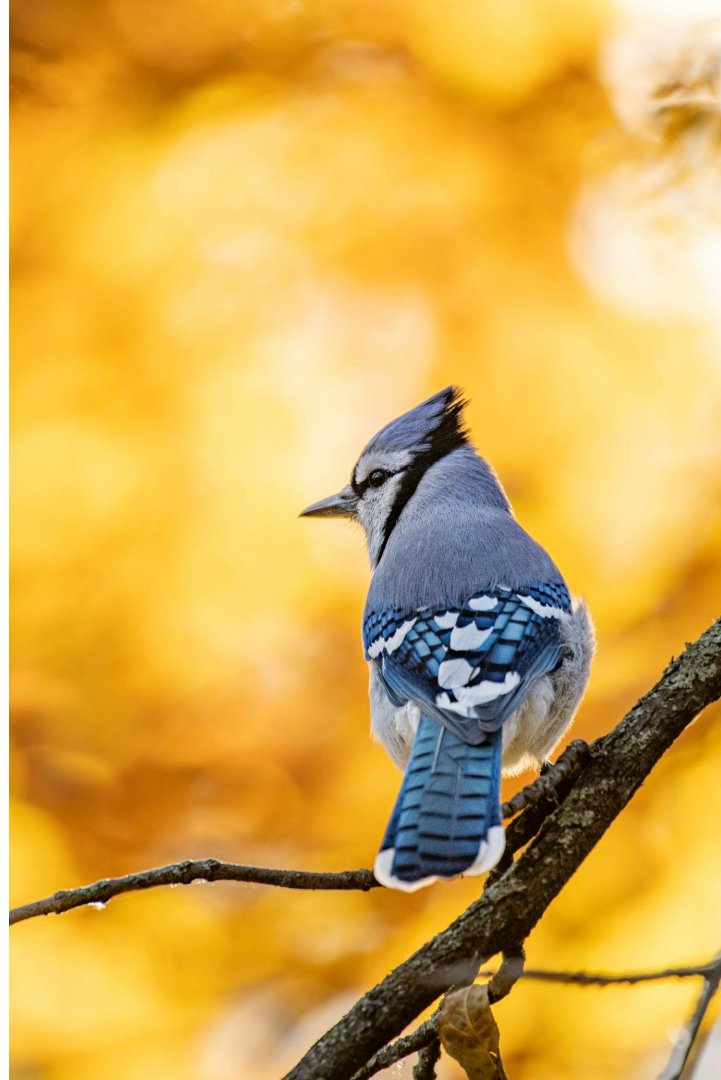
But still very good: in terms of collecting and processing the data

Birds are widespread, occurring almost everywhere around the globe. Birds are found in every country in the world, and nearly every habitat.

Birds are better monitored than any other taxa, being generally easy to detect, identify and count. Birds are conspicuous, largely active during the day, and generally occur in numbers that can be counted with relative ease.

There are enough bird species to show meaningful patterns, but not so many as to make field identification a significant challenge. There are currently just over 11,000 recognised living bird species, the vast majority of which can be identified in the field with relative ease through observation alone.

Birds are unparalleled in their popularity, with experts in every corner of the world.



Collecting data on birds = bird
observation + bird identification

In other words: welcome to
birdwatching



Not only scientific work, but also a hobby



Why do people watch birds

What you can give via birdwatching:

- citizen science data
- raising awareness of biodiversity matters
- educating people around you
- ecosystem monitoring

What birdwatching can give you:

- more time outdoors
- mental health benefits
- new acquaintances
- experiencing nature on a whole new level
- cognitive training
- and much more



What you need to start:

- bird identification guide
- notebook
- binoculars

Also helpful:

- camera
- birding apps
- spotting scope
- additional literature



Bird ID guides



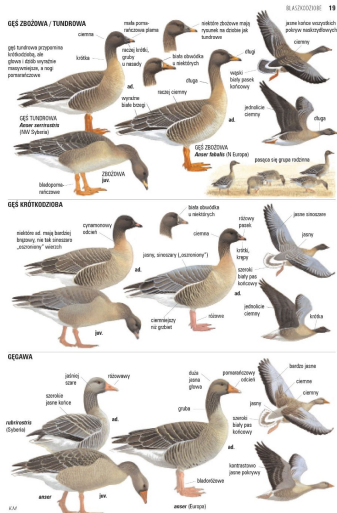
Collins Bird Guide
The Most Complete Guide to the
Birds of Britain and Europe
Lars Svensson, Killian Mullarney,
Dan Zetterström

Europe's Birds
An Identification Guide
Andy Swash, Rob Hume, Hugh
Harrop, Robert Still

PTAKI EUROPY
Przewodnik do rozpoznawania



Rob Hume, Robert Still, Andy Swash, Hugh Harrop



Binoculars

Main dimensions are: magnification
x lens width

Optimal magnification: 8-10

Optimal lens width: 36 - 42



Merlin BirdID



Download for free!



No AI – made for
humans by
humans

Never report an
observation based
solely on app
identification!

Who's singing?

Merlin Bird ID
can tell you

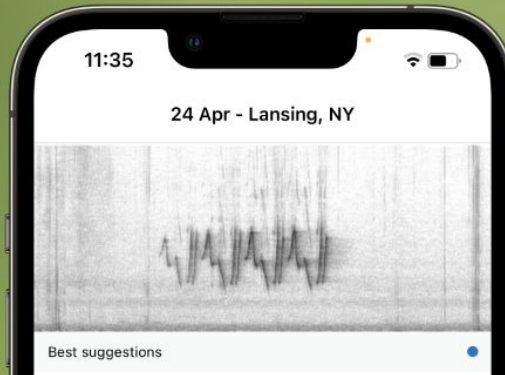


Photo by Brad Imhoff / Macaulay Library



Practice, practice and more practice

- anywhere
- anytime
- as much as you want

Find people with similar interests and go with them!

Definitely try:

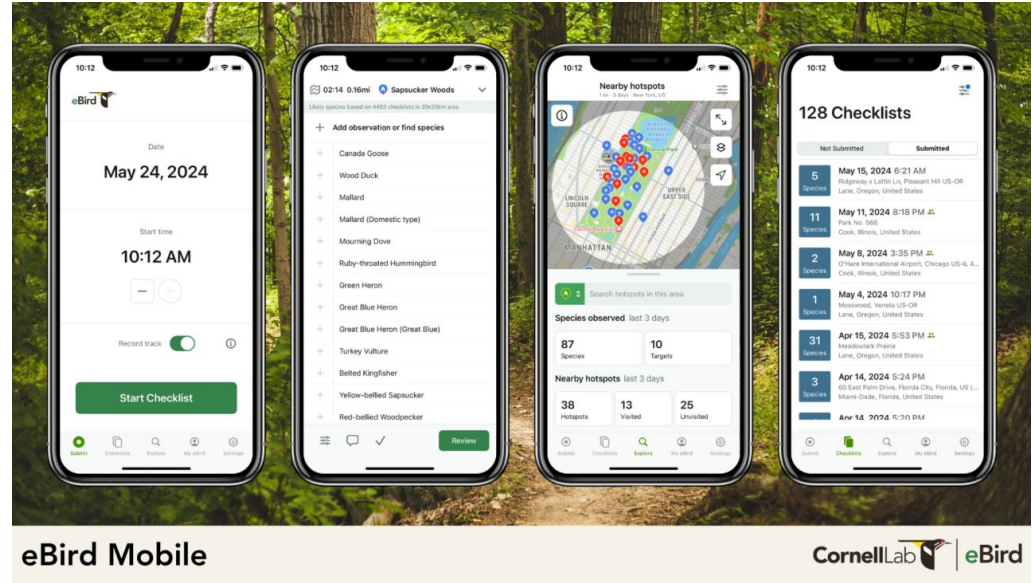
- guided birding tours
- bird ringing camps/stations



How to collect and transfer bird data: eBird (global)

eBird is among the world's largest biodiversity-related science projects.

eBird data document bird distribution, abundance, habitat use, and trends through checklist data collected within a simple, scientific framework. Birders enter when, where, and how they went birding, and then fill out a checklist of all the birds seen and heard during the outing. eBird's free mobile app allows offline data collection anywhere in the world, and the website provides many ways to explore and summarize your data.



How to collect and transfer bird data: OrnithoPL (Poland)

Ornitho.pl is a website design for sharing, collecting and illustrating animal observations for the whole Poland. Observations can be submitted through the website or NaturaList mobile application.



The image shows a screenshot of the Ornitho.PL website. At the top is a banner with a duck and the logo. Below it is a navigation bar with language options (fr, de, en, pl) and a user profile (Jacek Betleja). The main content area is divided into three columns. The left column contains a sidebar with links to the main page, partners, and a list of observation filters. The middle column features a welcome message, a QR code, and a map of Poland with colored dots representing bird sightings. The right column displays a list of recent observations, including dates, locations, and species names.

Strona główna

Partnerzy

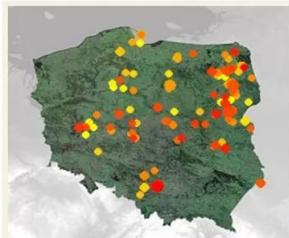
Przegląd obserwacji

- Obserwacje
 - Ostatnie 2 dni
 - Ostatnie 5 dni
 - Ostatnie obserwacje rzadkości
 - Wszystkie moje obserwacje
- Do weryfikacji
 - Wyszukiwarka
 - Podsumowanie dzienne
- Rozmieszczenie
 - sieweczka obrożna 2023
 - łabędź krzykliwy 2023
 - przepiórka 2023
 - pliszka górska 2023
 - brodziec piskliwy 2023
 - pełzacz leśny 2023
 - pełzacz ogrodowy 2023
 - orlik krzykliwy 2023
- Galeria zdjęć i dźwięków

Witaj na www.ornitho.pl

ornitho.pl to internetowa baza danych działająca w celu gromadzenia i udostępniania obserwacji zwierząt w Polsce. Obserwacje można przekazywać za pomocą niniejszego portalu lub aplikacji na smartfony działającej pod nazwą NaturaList (dostępnej w sklepie Play i App Store).





świergotek polny
(*Anthus campestris*)

Mapa występowania gatunku w kraju, w oparciu o dane wpisane do ornitho.pl (1 maj 2023 - dziś). Aktualizuj mapę o swoje obserwacje i pomóż nam uzyskać pełniejszy

Chorzów
sobota 12 sierpień 2023
Przed nowiem (25 dni)
Brak zachodu Księżycy, wschód Księżycy o 18h39
Słońce: wschód o 05h28, zachód o 20h09
Dzień: świt o 04h52, zmierzch o 20h46

Ostatnie dodane obserwacje w tej minucie i moje ostatnie obserwacje 2 godziny temu.
Obecnie 275 użytkowników korzysta z portalu.

Ostatnie obserwacje ptaków : [XML](#)

[\[pokaż nowe obserwacje\]](#)

[\[pokaż ostatnie obserwacje\]](#)

sobota 12 sierpień 2023

Dębówiec [D8U3A3]
≥35 ślepowron

Gieraltówce [D8I2Z2]
1 czapla purpurowa
1 pójdzia

Pszczyna [D8O3U1]
1 kormoran mały

Żory: Stawy na Wygodzie
2 ślepowron

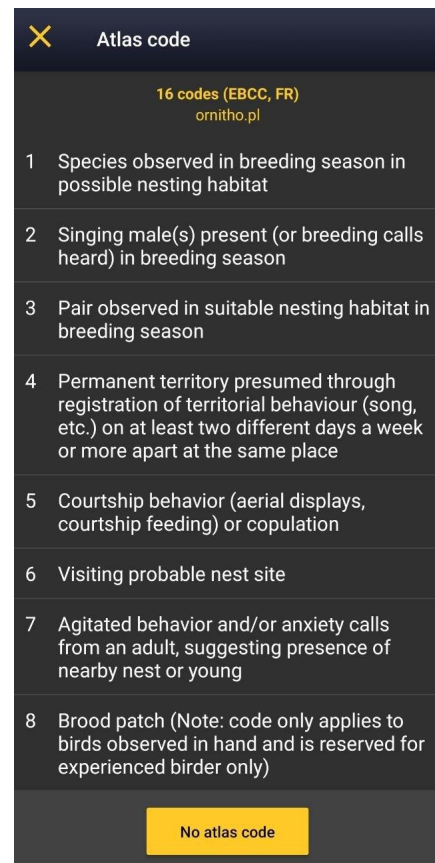
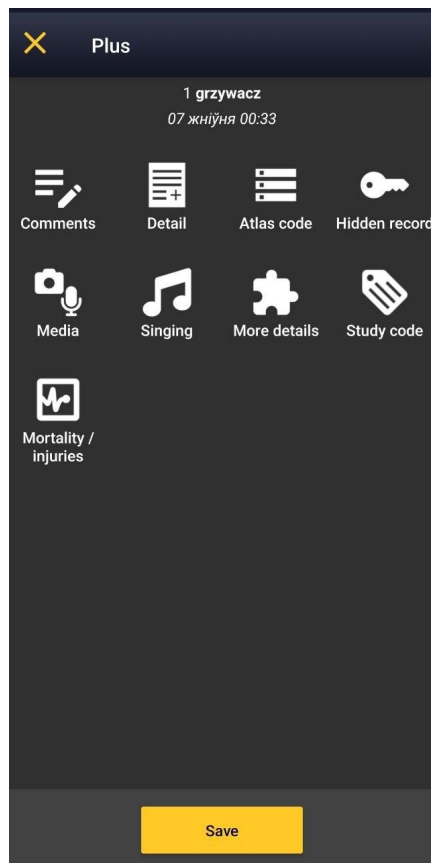
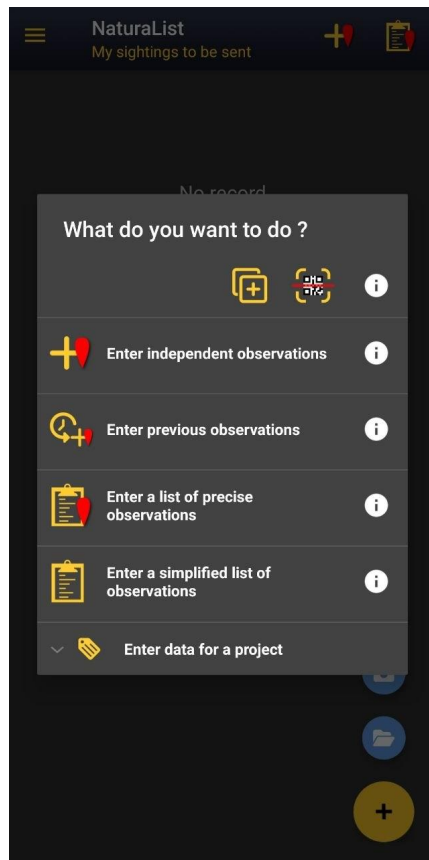
piątek 11 sierpień 2023

Dębówiec [D8U3A3]
1 czapla purpurowa

Goczałkowice-Zdrój [D8U1D1]
13-15 ohar

Pszczyna [D8O4M4]
1 ślepowron

How to collect and transfer bird data: OrnithoPL (Poland)



Bird ringing and monitoring programmes



Ethical bird observations

- When birdwatching (and/or taking photos) **keep interference to a minimum**. Avoid disturbing birds, especially in areas frequently visited by other birdwatchers, where the impact of multiple people is cumulative.
- In the vicinity of nests, lek sites, roosting sites and important feeding areas, observe from a distance that does not disturb the birds.
- Don't use vocal stimulation and other methods of attracting birds.



Bird ID – basics

What to pay attention to while observing a bird:

- environment
- overall appearance
- voice
- behavior
- number of individuals



Bird ID – basics

Bird appearance - details:

- feather coloration
- beak (bill), feet, eye coloration
- size of the bird
- form of the bird
- flight



Bird ID – important tips

What may impact your observations:

- lighting conditions
- time of the day
- season
- weather
- noise
- distance
- device settings and quality (for photo ID)



Bird ID – important tips

- don't rush your identification
- sometimes it's impossible to identify the bird - and it's okay
- start small
- don't postpone learning bird voices
- observe common species consciously



Conclusions

1. We need reliable indicators to successfully monitor the well-being of our environment.
2. Birds are good environmental indicators due to many reasons both in terms of reflecting ecosystem condition and collecting and analyzing the data.
3. In order to contribute to collecting data on birds you need to study and practice bird identification (in other words – birdwatching).
4. Birdwatching is highly beneficial to both citizen science and individuals conducting it.



Thank you for your attention!

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Photos: unsplash.com, shutterstock.com, private archives

