

How Everyone Can Support Nature Through Citizen Science



This evening we will (hopefully!):

- Find out what Citizen Science is
- Think about why it is valuable
- Look at a range of local, national and global Citizen Science projects
- Break for refreshments
- Practice some nature observation skills
- Carry out hands on data gathering
- Q&A



Bird quiz!

- Why birds?
- Bird populations provide a good indication of the broad state of wildlife in the UK.
- Let's go! Identify these top ten garden birds:























Bird quiz cont.

2. Having named the top ten birds, now put them in order of frequency of last Big Garden Bird Watch
3. Which of these first appeared in the top 10 in 2023 and has remained there in 2024?
4. Which two species featured here have declined in numbers so much they are now on the Red (at risk) List?



Bird quiz answers

1. Blackbird (5)
2. Longtailed tit (10)
3. Sparrow (1)
4. Goldfinch (8)
5. Robin (6)
6. Blue tit (2)
7. Starling (3)
8. Magpie (9)

9. Great tit (7)
10. Wood pigeon (4)



What is Citizen Science (CS)?



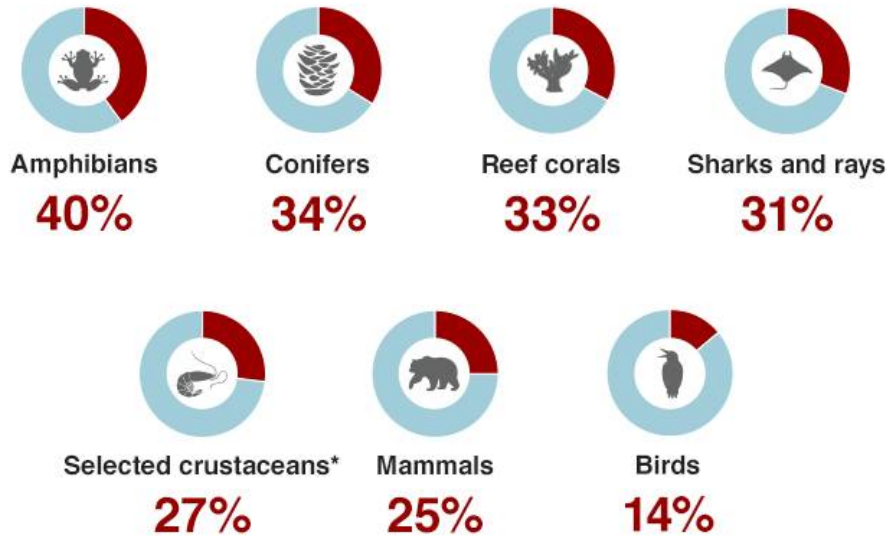
- We are born scientists!
- CS is voluntary public participation in research to increase scientific knowledge.
- People share and contribute to data monitoring and collection programs.



Why is environmental research needed even more now?

One in four species are at risk of extinction

Species assessed by the IUCN Red List



- Biodiversity globally has declined dramatically in recent decades, with many species at risk of extinction.
- This is due to human activities such as habitat loss, pollution and climate change
- Since 1970, the abundance of UK species has declined by 19% on average.
- Only 14% of habitats that are important for wildlife are in a good ecological state.
- The distribution of pollinators, including bees, hoverflies, and moths, has decreased by 18% on average.
- The loss of predators, such as ladybirds, has allowed pest populations to multiply.
- The Environment Act 2021 is a UK law that aims to improve the environment & halt biodiversity loss

How could it be valuable to you?



- Helps connect you with nature & increases your awareness of biodiversity
- Time spent in nature improves wellbeing – green therapy
- You become part of valuable research and can make a difference by contributing to environmental protection



How can you get involved?

- You can engage anywhere, anytime, for as little or much time as you have
- Pick a project by location - online, home garden & nearby, further afield
- Pick a project by interest – mammals, birds, insects, plantlife, forests, waterways, seashore



Walrus in Space Detectives (online)



- 'Walrus in Space' in partnership with British Antarctic Survey & World Wildlife Fund
- Walrus are being impacted by climate crisis, affecting their numbers and distribution
- Public are asked to become 'Walrus Detectives'
- Search for and count walrus in thousands of satellite images taken from space of Canada, Greenland and the Norwegian Arctic coastline



MammalWeb (online and in nature)



- Collate data from motion sensing "camera traps", set up to photograph and monitor wild mammals
- Gain understanding of size & distribution of populations of mammals
- People needed to set up camera traps in their area & upload images, Mammal 'Trappers'
- As there are thousands of photos, Mammal 'Spotters' are needed to observe & report on the images

Zooniverse (online)



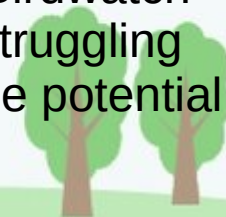
- Zooniverse is the world's largest online platform for citizen science / research.
- Has almost 3,000,000 participants
- Currently 80 projects from mapping galaxies to counting penguins (450 projects throughout the year)
- This has led to new discoveries, policy impacts, and research publications.



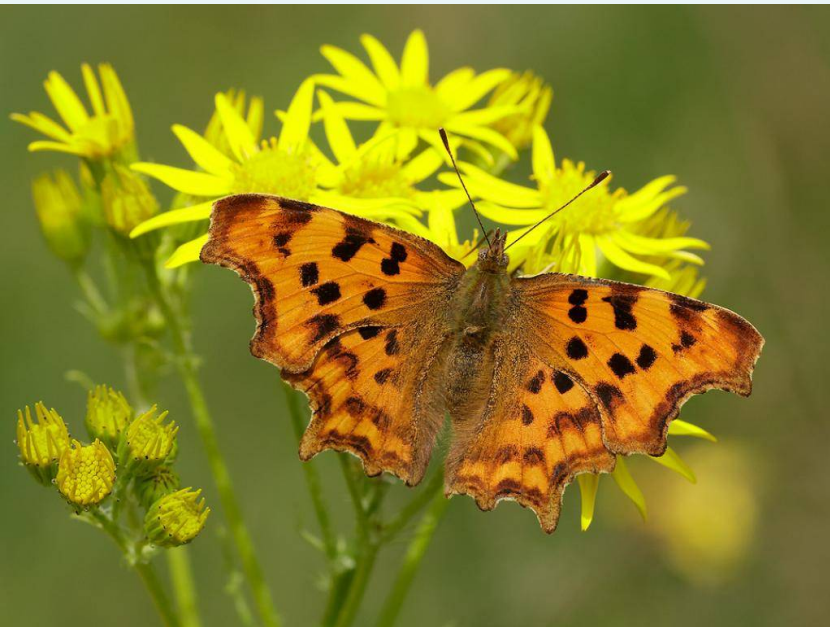
Big Garden Birdwatch (garden)



- BGBW is the biggest CS activity in UK (if not the world) with over 600,000 participants in 2024 & has been running since 1979
- Big Garden Birdwatch provides a snapshot in time of how garden birds are doing in the UK.
- Held last weekend in January (data published in April) - when garden birds need us most & most likely time birds will come into gardens looking for shelter and food.
- Observe & count occurrence and frequency for one hour
- BGBW has played a crucial role in raising awareness about the decline of certain bird species.
- The data gathered through Big Garden Birdwatch not only helps conservationists identify struggling species but also provides insights into the potential causes of their decline.



Big Butterfly Count (garden & nearby)



- Butterflies are beautiful! But also vital parts of the ecosystem as pollinators and components of the food chain.
- Butterflies are key biodiversity indicators for scientists; they react quickly to environmental changes
- Butterflies (and moths) are under threat, numbers down significantly since the 1970s.
- Big Butterfly Count takes place across July & August, observe for 15 minutes.
- Following the results of the Big Butterfly Count 2024, Butterfly Conservation declared a butterfly emergency
- Government responded by banning use of neonicotinoid pesticide for 2025.
- Critically need data this year to justify continuing the ban.



Bugs Matter (car number plate)



- Insects underpin our natural world; their numbers can help us to better understand what's happening in our wider environment.
- Bugs Matter measures insect splats on vehicle number plates as a marker of insect abundance.
- 78% decline in flying insect numbers between 2004 and 2023 across the UK
- Insects are also a good indicator for measuring the success of conservation work



Recent news – potential devastation to Yorkshire Marine & Shoreline Wildlife



- Yorkshire Wildlife Trust care for large stretches of the coast in the area where the accident happened.
- Both Wildlife Trusts are deeply concerned about the potential impact that resulting pollution could have on internationally important seabird colonies, grey seals and the wealth of other marine life such as harbour porpoise, fish and minke whale that live beneath the waves.
- East Yorkshire's coast is home to protected and significant colonies of seabirds including puffins, razorbills, gannets and kittiwakes.
- Many birds are gathering offshore on the sea ahead of the nesting season



Yorkshire Wildlife Trust Shoresearch



- Shoresearch is an ongoing eCS project where volunteers identify and record wildlife in the intertidal zone
- Using quadrats and corers, data is collected on species abundance and habitat
- Data collected helps monitor sea life and understand the effects of climate change, pollution, and invasive species
- Data has helped designate Marine Conservation Zones - nature reserves of the sea
- Surveys are carried out at Runswick Bay, Flamborough South Landing and Filey Rigg
- YWT train volunteers to become expert observers and data recorders of marine wildlife
- Data collected contributes towards better understanding of the impacts of pollution, climate change, and invasive species on marine life.



The Great UK Waterblitz (out & about)

- Our rivers and freshwater habitats are at crisis point and urgent action is needed.
- The Great UK WaterBlitz is a biannual campaign calling on everyone to go out and test the quality of their local freshwater including rivers, streams and lakes.
- Last year over 4,500 people measured the water quality of their local rivers, streams, lakes and ponds.
- With this data an essential snapshot of the health of our rivers throughout the country was captured, providing valuable data to inform action to restore our rivers and freshwater systems.
- 61% of data points across the UK showed poor water quality with significant regional variation
- The Anglian and Thames river basin districts have the worst water quality – over 80% of surveys showed unacceptable nutrient concentrations
- In England, the county of Northumberland has the best water quality



Tees barrage seal monitoring (out & about)



- The Canal and River Trust (CRT) recruits volunteers to monitor the number of grey and harbour seals present in the River Tees at the Tees Barrage and observe their feeding activity.
- The CRT works in partnership with Industries Nature Conservation Association (INCA) to monitor seal numbers at the barrage during the migration of salmon and sea trout.
- Volunteers record the numbers of seals, the species, and the feeding behaviour during high tide times.
- Full training & support is given.



Break for refreshments

- Have a look at the walls!



Butterfly quiz

- The UK has 59 species of butterflies – 57 resident species of butterflies and two regular migrants – the Painted Lady and Clouded Yellow.
- Yorkshire supports 39 butterfly species
- Name the following 10 butterflies



1.



2.



3.



4.



5.



6.



7.



8.



9.



10.



Answers

- 1. Orange tip
- 2. Brimstone
- 3. Ringlet
- 4. Marbled White
- 5. Silver washed fritillary
- 6. Red admiral
- 7. Painted lady
- 8. Peacock
- 9. Comma
- 10. Common blue



Walrus Count & Mammal Web ID

- Lettered photos of walrus haul out areas taken from space are circulating; identify if you can see any walrus, count and record your findings.
- Numbered photos from Mammal Web camera traps are circulating, identify any mammals you can see and record your findings.



Walrus Count A



Walrus count B



Walrus count C



Walrus count D



Walrus from space count answers

- Image A – 74?
- Image B – 25?
- Image C – 48?
- Image D - - 10?

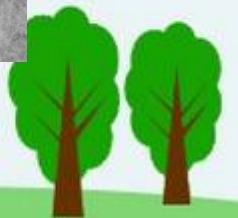


Mammal Web images

- How many did you identify?



1. Male Roe deer



2. Pine marten



3. Beaver kits & mum!



4. Badger



5. Fox



6. Otters



6. Otters



Websites

- <https://bigbutterflycount.butterfly-conservation.org/>
- <https://www.rspb.org.uk/whats-happening/big-garden-birdwatch/info>
- <https://www.buglife.org.uk/get-involved/surveys/bugs-matter/>
- <https://citizenscienceglobal.org/projects.html>
- <https://earthwatch.org.uk/about-us/>
- <https://www.mammalweb.org/en/uae-wwf-project>
- <https://naturescalendar.woodlandtrust.org.uk/>
- <https://www.ywt.org.uk/blog/marine/shoresearch-surveyors>
- <https://www.zooniverse.org/>



Q&A

- <https://casav.uk/citizenscience>

