
WHAT IS CITIZEN SCIENCE?

SCDTP: 'WHAT IS'
KNOWLEDGE EXCHANGE SERIES

Ella Sutton
Thursday 25th May 2023

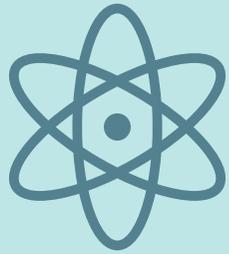
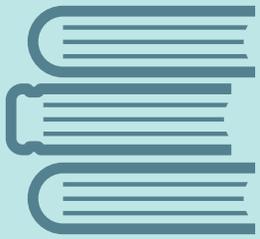
UNIVERSITY OF SOUTHAMPTON

WHAT IS CITIZEN SCIENCE?

A project directed by
scientists

Practically carried out (at least
in part) by volunteering members
of the public

To increase knowledge and
understanding of a specific topic



THE RSPB BIG GARDEN BIRD WATCH

“ We’re so excited that Big Garden Birdwatch 2023 attracted 540,000 nature lovers to actively look out for birds, making the event the UK’s biggest citizen science wildlife survey. If you were one of them thank you, as you helped us build the most up-to-date picture of how our much-loved birds are faring in the face of the nature and climate crisis. ”



Blackcaps wintering in Wales, 1999/2000 – 2020/21

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Crynodeb

Cynyddodd nifer y Teloriaid Penddu sy'n gaeafu yng Nghymru yn ystod ail hanner yr 20^{fed} ganrif, ond heblaw mapiau o bresenoldeb a niferoedd cymharol yn Bird Atlas 2007-11, ychydig sydd wedi ei gyhoeddi sy'n asesu eu statws. Mae'r papur yma yn defnyddio data o nifer o ffynonellau i ddisgrifio'r hyn a wyddom am ddefnydd o erddi a thueddiadau mewn niferoedd Teloriaid Penddu fu'n gaeafu yng Nghymru yn ystod y 21^{ain} ganrif, ac yn ceisio asesu maint y boblogaeth.

Abstract

The presence of Blackcaps wintering in Wales increased during the second half of the 20th century, but aside from the maps of cumulative occupation and relative abundance in Bird Atlas 2007-11, little has been published that assesses their status. This paper uses data from multiple sources to describe what is known about garden-use, trends in numbers of wintering Blackcaps in Wales during the 21st century and attempts to assess the size of the population.



The Joy of birds: the effect of rating for joy or counting garden bird species on wellbeing, anxiety, and nature connection

Maria E. White¹ · Iain Hamlin¹ · Carly W. Butler¹ · Miles Richardson¹

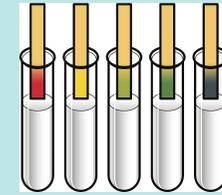
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Abstract

The feeding of garden birds is a popular and accessible means of connecting with wildlife in urban environments in the United Kingdom. Past research has found that the main motivations for feeding birds are psychological benefits, concern for bird welfare, and connecting to nature. This study explores whether a brief birdwatching activity impacts on wellbeing, anxiety, and nature connection. One hundred and fifty-six participants took part in a birdwatching activity, identifying the species that entered their garden during a thirty-minute period. Participants were randomly allocated to the 'joy' group, who rated their feeling of joy on seeing each species, or the 'count' group, who counted the number of birds of each species. Measures of wellbeing, state anxiety and nature connection were completed before and after the observation period. Both groups had improved wellbeing, anxiety, and nature connection, though decreases in anxiety were greatest for those in the joy group. These results suggest that activating a sense of joy heightens the psychological benefits of watching garden birds. These benefits and the strengthening of nature connections highlight the reciprocal relationship between humans and birds and the importance of actions towards healthy, sustainable urban ecosystems.

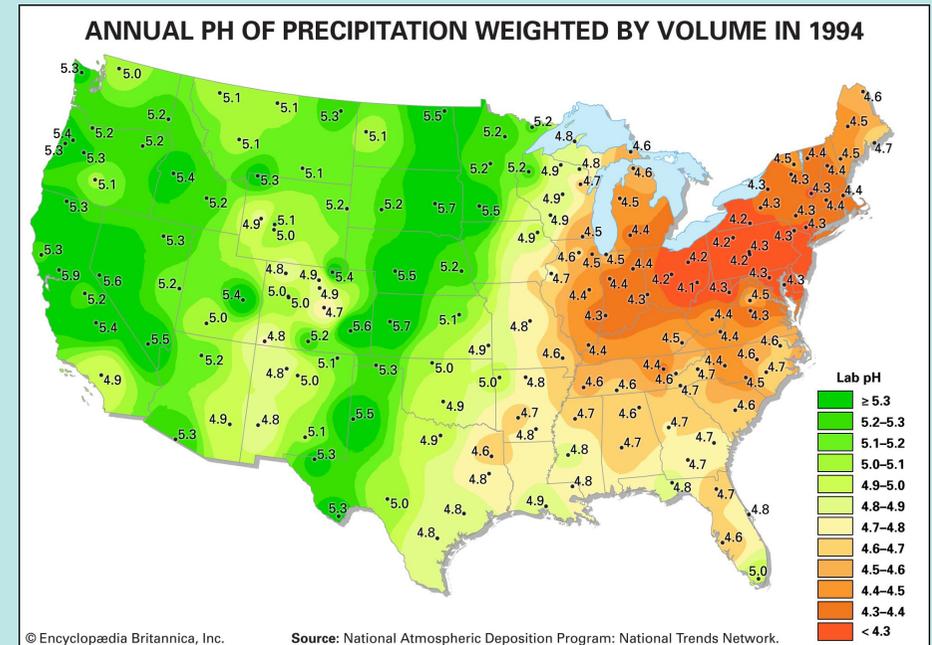
Acid Rain to Be Measured



The National Audubon Society said Tuesday that it is mobilizing members to monitor the acidity of rainfall in an attempt to make a case for new controls on sources of acid rain.

The society, saying it has 550,000 members in 500 chapters, has 60 monitoring stations at work already and expects 200 eventually.

Volunteers will check the acidity of every rainfall, phone results to a central headquarters and try to publicize particularly abnormal acidity in their hometowns, Peter A. A. Berle, president of the society, said at a news conference.



ADVANTAGES

Large quantity of data collected

Benefits participants

Increases knowledge and understanding

Engages members of the public with science

Increases rate of data analysis, therefore advancing science more rapidly

The large spatial extents which would be otherwise difficult to survey for

DISADVANTAGES

Reliability of data

Biases in representation of participants

Public are sometimes seen as 'disruptive' to scientists' activities

Raising community awareness and engagement takes time

The approach is most successful if the task is simple

Can be expensive if equipment is needed

Golumbic et al. (2017)
Hobbs and White (2012)

Pocock et al. (2014)
Vilet and Moore (2016)

10 PRINCIPLES OF CITIZEN SCIENCE

1. CSP's actively involve citizens in scientific endeavour that generates new knowledge or understanding.

2. CSP's have a genuine science outcome.

3. Both the professional scientists and the citizen scientists benefit from taking part.

4. Citizen scientists may, if they wish, participate in multiple stages of the scientific process.

5. Citizen scientists receive feedback from the project.

6. CS is considered a research approach like any other, with limitations and biases that should be considered and controlled for.

7. CSP data and metadata are made publicly available and where possible, results are published in an open-access format.

8. Citizen scientists are acknowledged in project results and publications.

9. CS programs are evaluated for their scientific output, data quality, participant experience and wider societal or policy impact.

10. The leaders of CSP's take into consideration legal and ethical issues surrounding copyright, intellectual property, data-sharing agreements, confidentiality, attribution and the environmental impact of any activities.



Decide and define your project aims and the timescale and budget you have.
E.g. to explore how temperature influences sightings of ladybirds across the UK.

Configure a system to analyse data that is collected.

Design an app that participants can use to record the data they collect.



Announce your study and encourage participants from all geographical and social backgrounds to get involved.

Wait for data to start being collected.

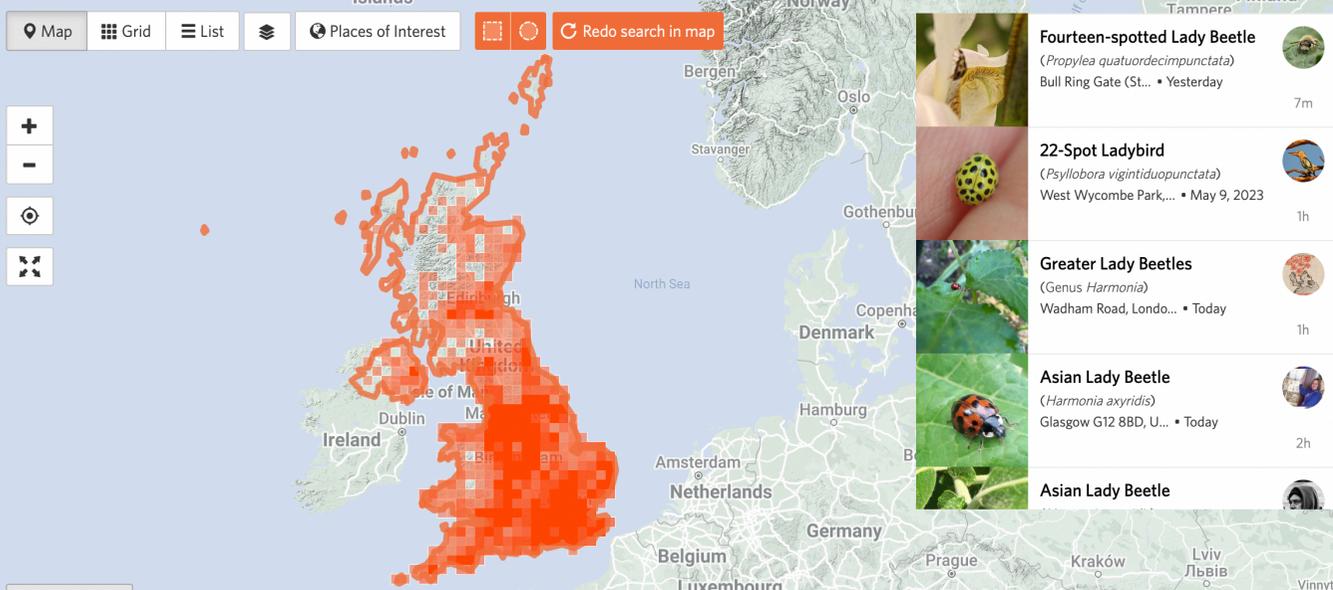


Observations

 Lady Beetles

United Kingdom **43,547** OBSERVATIONS 47 SPECIES 2,326 IDENTIFIERS 10,379 OBSERVERS

Map Grid List Places of Interest



Fourteen-spotted Lady Beetle
(*Propylea quatuordecimpunctata*)
Bull Ring Gate (St... • Yesterday
7m

22-Spot Ladybird
(*Psyllobora vigintiduopunctata*)
West Wycombe Park,... • May 9, 2023
1h

Greater Lady Beetles
(Genus *Harmonia*)
Wadham Road, Londo... • Today
1h

Asian Lady Beetle
(*Harmonia axyridis*)
Glasgow G12 8BD, U... • Today
2h

Asian Lady Beetle



“ If you are interested in wildlife and have a general love of nature, you may want to do something to help conserve it. One really important activity you could take part in is to record and share details of the wildlife that you see. You’d be joining thousands of volunteers across the UK, who are gathering essential information to help protect and restore nature.

Every decision that’s made about the environment – whether it’s where to create a new nature reserve, or where to build a new supermarket – depends on accessible wildlife information. By taking part in wildlife recording, you can help ensure that these important decisions are based on the best and most up-to-date information.

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Additional Reading:

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