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Citizen science in Europe: its impact and development

Lucy Robinson

Natural History Museum, London

Outline

- Introduction to myself and the Natural History Museum, London
- What is citizen science? What is it not?
- Citizen science across Europe
- European Citizen Science Association (ECSA)

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The Natural History Museum, London – 250 years of history

- Over 80 Million specimens
- Major visitor attraction (5 million visitors, over 10 million online visits)
- Global biodiversity research institute (300 scientists, 700 peer-reviewed publications per year)
- Active citizen science projects for over 10 years

Angela Marmont Centre for UK Biodiversity

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Citizen Science in our galleries

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Strategy for NHM citizen science going forward

To create a collaborative centre for citizen science that integrates our science, engagement and education activities and delivers high impact scientific research

• Mass participation ecological survey projects that investigate key questions pertaining to current and future UK biodiversity

• Online crowdsourcing projects that open up our collections for transcription and research

• Enabling projects: products, services & resources that support citizen science practitioners

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Definition of citizen science

*Citizen science is the **involvement of volunteers** in **scientific projects that contribute** to expanding our knowledge of the natural world, through the systematic collection, analysis or interpretation of environmental observations.*

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What is it NOT?

- Science surveys or activities where the data collected, analysed or interpreted are not used or useable at the end
- Science communication – telling people about science/research
- A replacement for existing monitoring activities
- Free – doing citizen science well requires resources

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Past decade has seen a rapid increase in diversity and profile of citizen science projects…

Key drivers:

• Scientific level – large observational datasets, growing trust in data

• Policy level – need to involve citizens in monitoring and protection

• Human level – increasingly aware, interested and willing

• New technologies

Opening up science and sharing knowledge in a way that hasn't previously been possible

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Crowdsourcing, mass participation and community-based projects

BioBlitz: discover and record your local wildlife

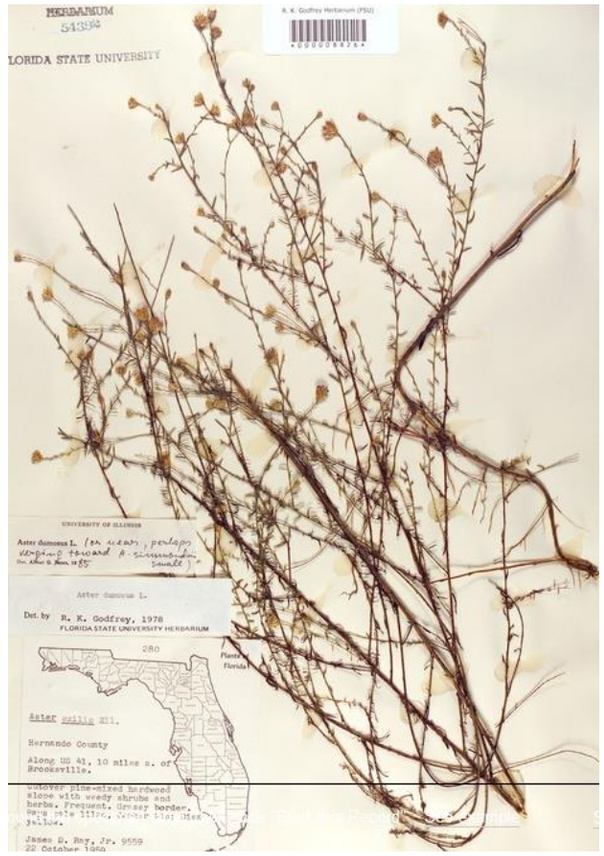
OPAL

EXPLORE NATURE

The Microverse

Revealing invisible urban ecosystems

Collaborate with the museum on our genetic research by collecting micro organisms from a building near your school (UK wide). Free to all and suitable for A-level Biology students.
microverse@nhm.ac.uk



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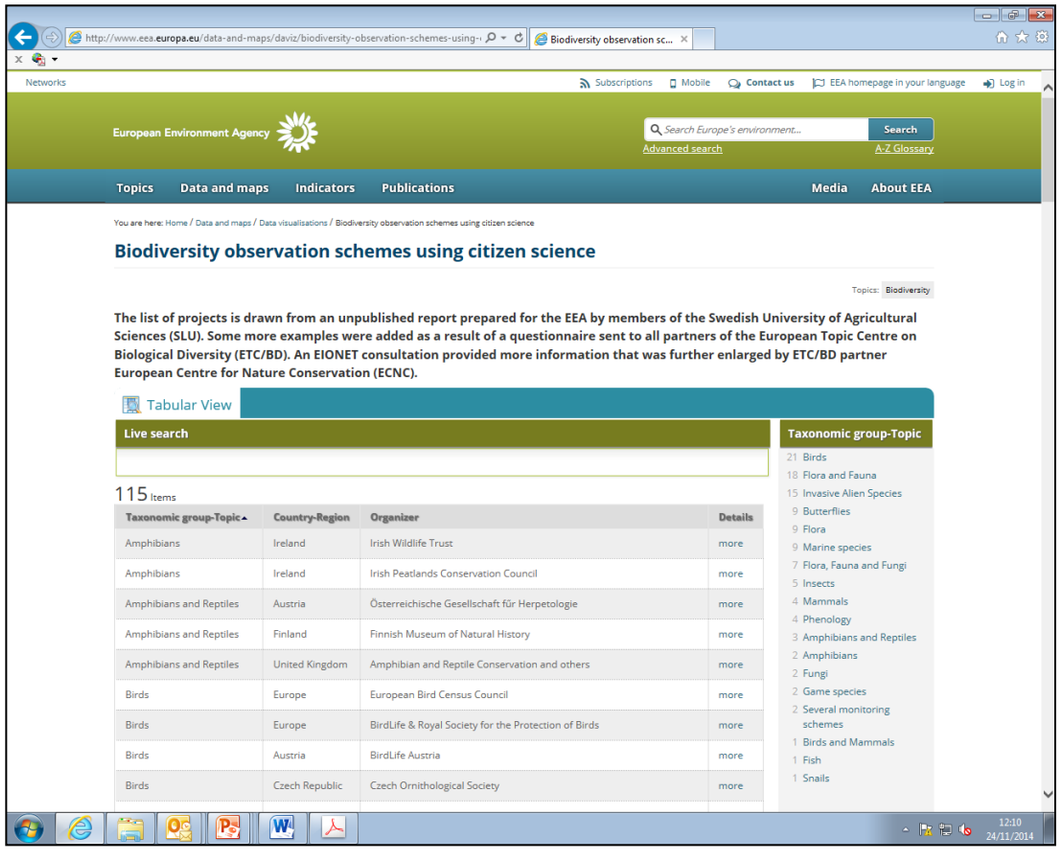
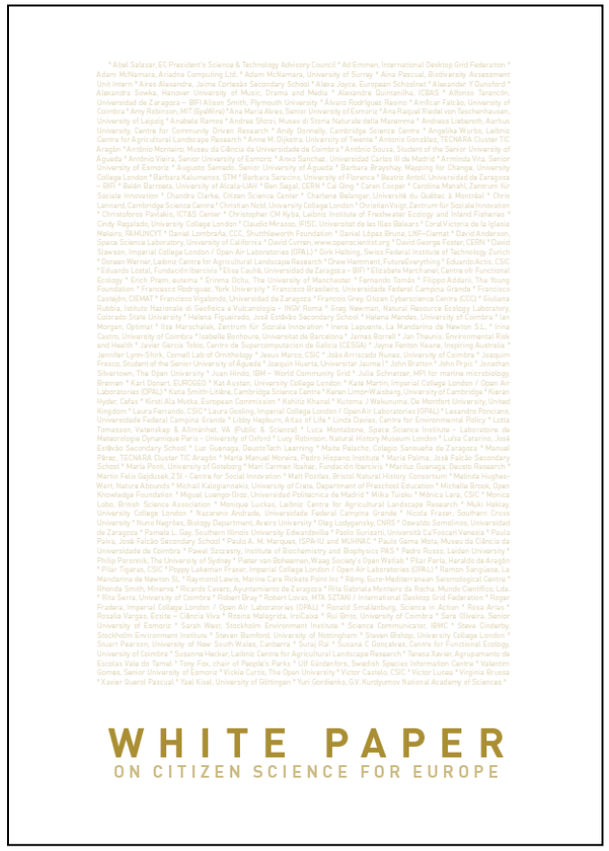
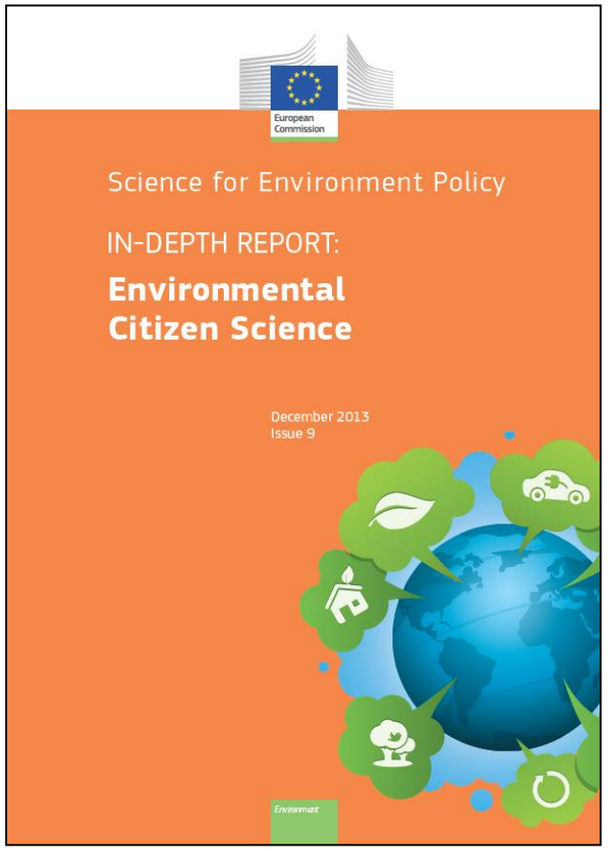
Citizen science across Europe

- Many active citizen science projects / schemes
- H2020: Science with and for Society
- European Natural History Museums Group
- European Citizen Science Association







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European Citizen Science Association

- An association supported by organizations from over 10 EU countries, who are working together with environmental regulators to encourage the growth of the citizen science movement in Europe.

- ECSA will advance and promote citizen science in a Europe where citizens are valued as a key component advancing knowledge about the sustainable development of our world.

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EUROPEAN CITIZEN SCIENCE ASSOCIATION

European Citizen Science Association: objectives

- To support the growth of national citizen science communities across the EU
- To share knowledge and skills on citizen science
- To develop EU wide citizen science programmes
- To identify, develop and promote best practice and excellence in citizen science
- To collaborate with the growing international citizen science community

EUROPEAN CITIZEN SCIENCE ASSOCIATION

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European Citizen Science Association: working groups

1. Principles and standards in citizen science: sharing best practice and building capacity

2. Projects, data, tools and technology

3. Policy, strategy, governance and partnership

4. Membership, communication, marketing and events

Sharing best practice

Successful projects tend to have:

- Clearly articulated, agreed goals
- Sufficient resourcing – it's not free
- User testing
- Reward mechanisms
- In-built evaluation
- Data validation/verification methods
- Learnt from others!

Currently collating best practice relevant to the field of citizen science – please email any suggestions to j.cawthray@nhm.ac.uk

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Ten principles of citizen science

1. Citizen science projects actively involve citizens in scientific research. *Citizens can act as contributors, collaborators, or as project leader and have a meaningful role in the research project.*

2. Citizen science projects have a genuine research question or goal.

3. Citizen scientists benefit from taking part. *Benefits may include learning opportunities, social benefits, community cohesion, gathering evidence for a local issue, or the opportunity to influence policy.*

4. Citizen scientists may, if they wish, participate in multiple stages of the scientific process. *This may include developing the research question, designing the method, gathering and analysing data, and communicating and publishing the results.*

5. Citizen scientists receive feedback from the project. *For example, how their data are being used and what the research, policy or societal outcomes are.*

Ten principles of citizen science

6. Citizen science data are considered as valuable a contribution as traditionally collected data.

7. Citizen science project data and meta-data are made publically available, and results are published in an open access format. *Data sharing may occur during or after the project, unless there are security or privacy concerns that prevent this.*

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

9. Citizen science programmes are evaluated for their scientific output, data quality, participant experience and wider societal or policy impact.

10. Citizen science is a flexible concept which can be adapted and applied within diverse situations and disciplines. *Citizen science lends itself to cross-disciplinary work, bringing new perspectives and skills to a research project.*

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Questions?

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