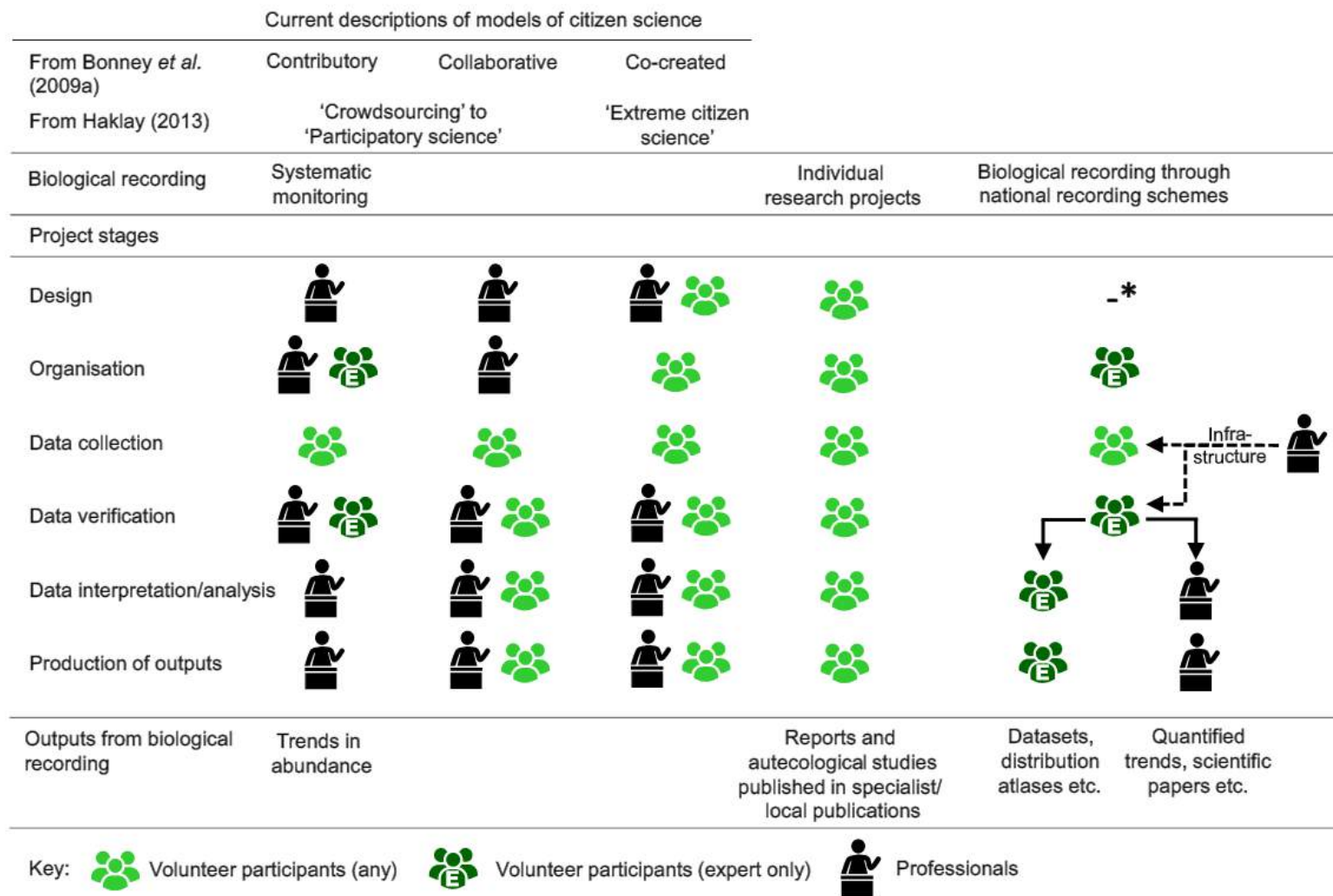


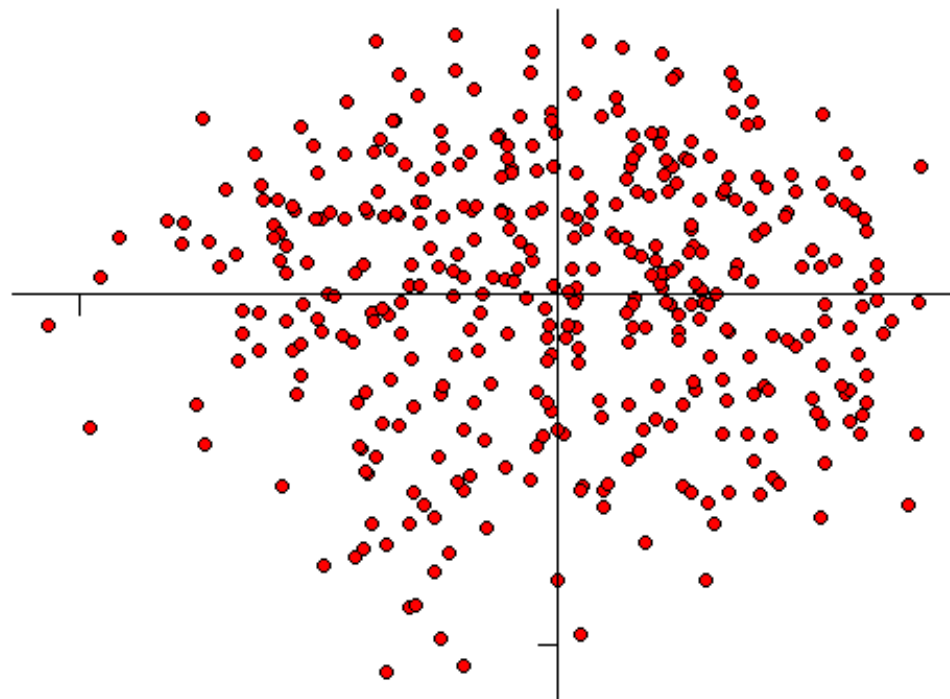
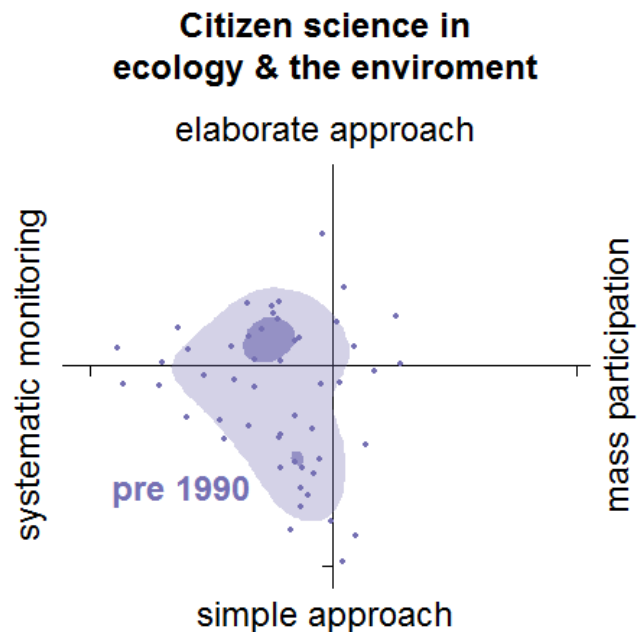
# Contribution of citizen science towards biodiversity monitoring

Helen Roy  
(and about 19 000 others)

# Defining citizen science...



# The landscape of citizen science



No clustering;  
there are no discrete 'types' of projects

# Wonderful life of citizen science

Biodiversity indicators →



Department  
for Environment  
Food & Rural Affairs

Legislative  
monitoring →



**‘Elaborate’**

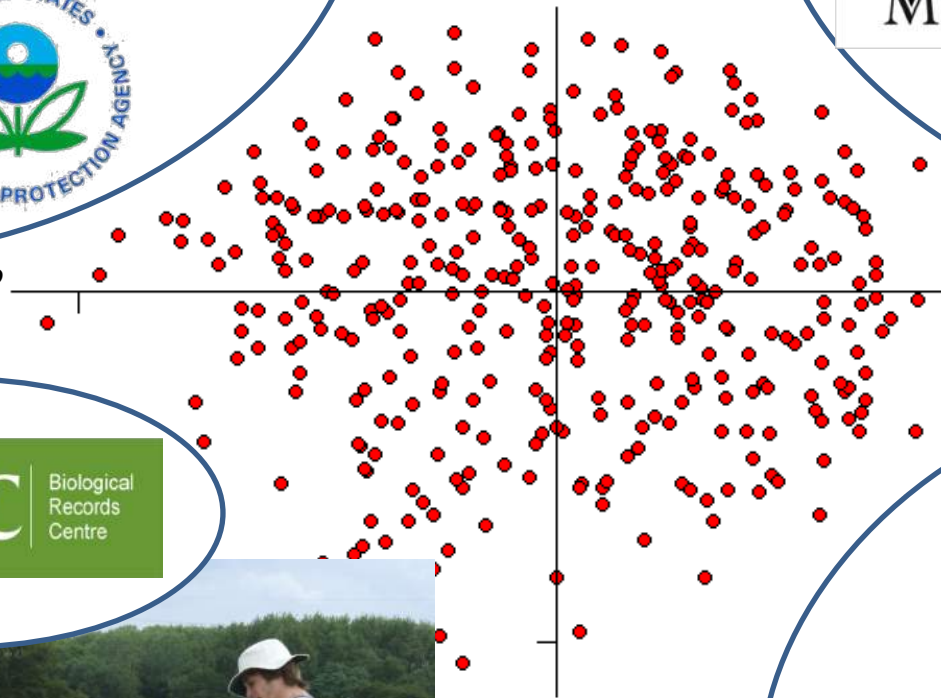
Hypothesis-led  
science

Evolution  
MegaLab



**Conker  
Tree  
Science**

**‘Scientific sampling’**



**‘Mass participation’**



**‘Elemental’**



**PlantTracker**



# Biological Records Centre

[Home](#) [Recording](#) [Research](#) [Resources](#) [Links](#) [Staff](#) [Contact](#)



Contribute  
butterfly  
records with  
iRecord

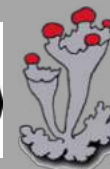
## Key themes

[Recording Schemes](#)

[Atlases](#)

[Datasets](#)

[Red Listing and Indicators](#)



A booklet reviewing the first 50 years of BRC can be download [here](#).

BRC is supported by the [Joint Nature Conservation Committee](#) and the [Centre for Ecology & Hydrology](#) within the [Natural Environment Research Council](#).

The work of BRC is a major component of the [National Biodiversity Network](#).



[mobile app](#)



[Improving Plant Monitoring](#)



[more](#)

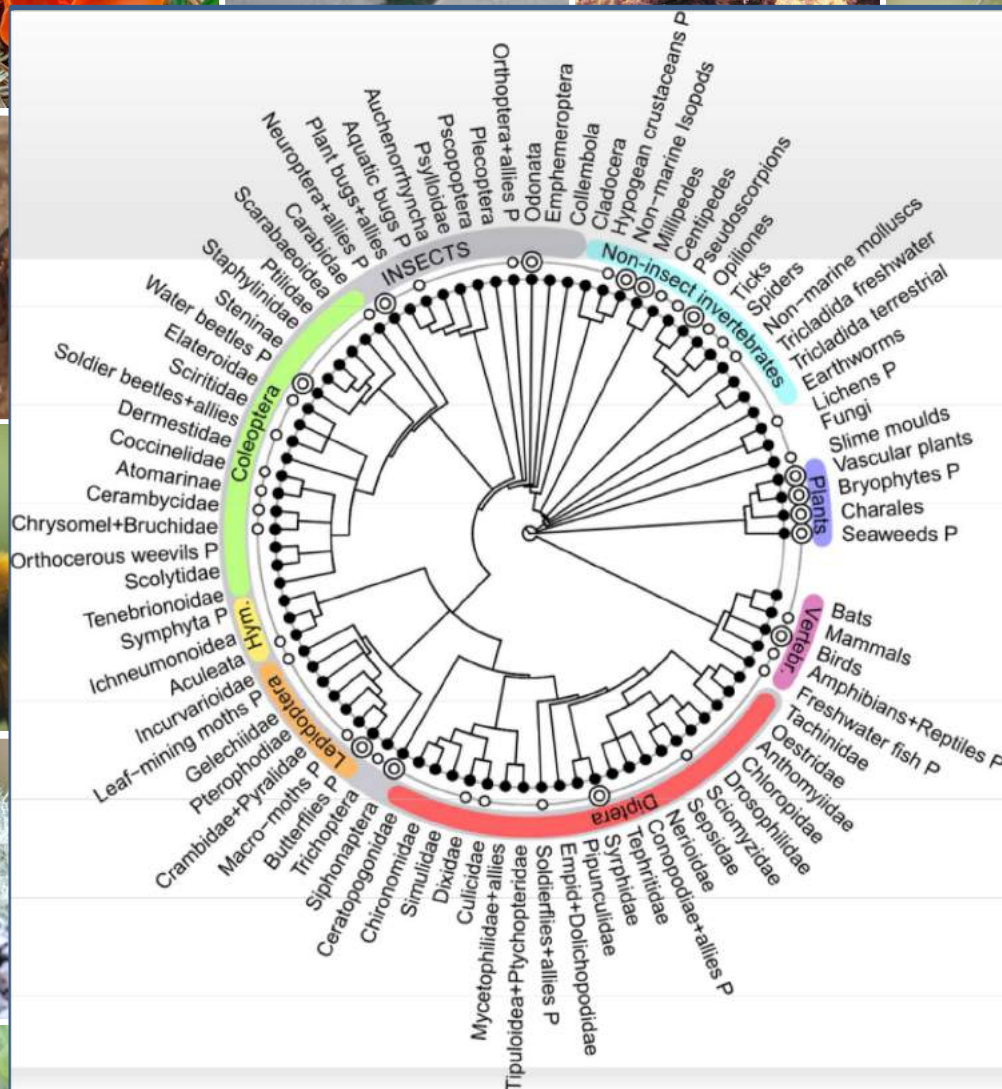
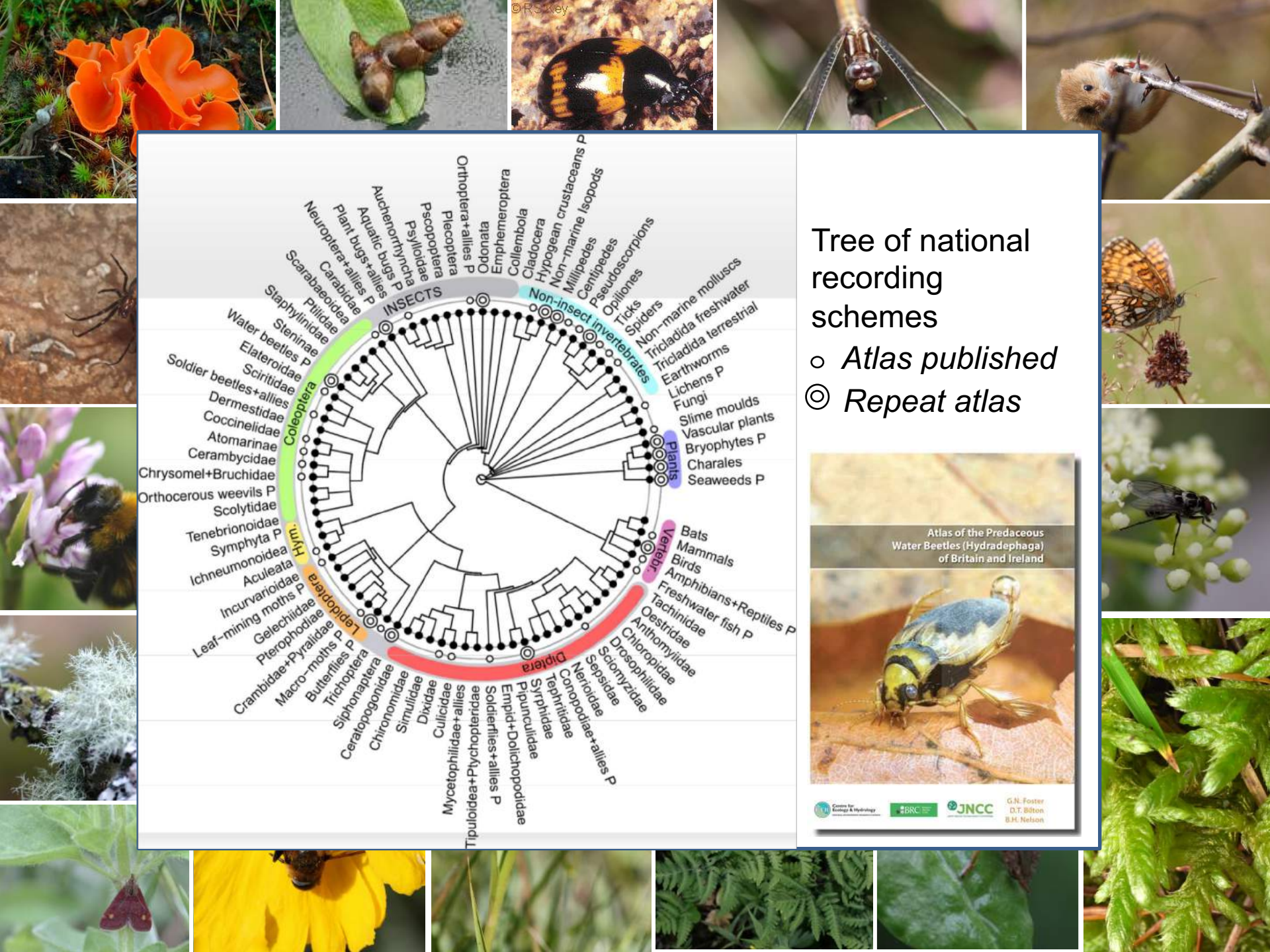
[Citizen Science](#)

[History of Recording](#)

[Developing BRC](#)

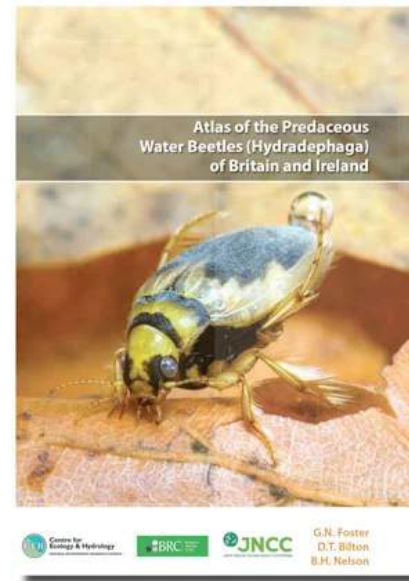
[Partnerships](#)

[Follow @BRC](#)

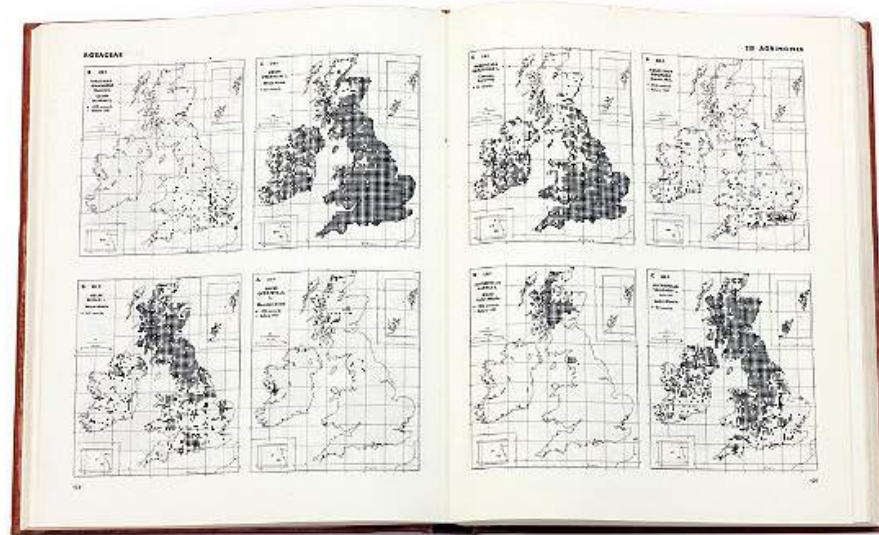


## Tree of national recording schemes

- *Atlas published*
- © *Repeat atlas*



# Celebrating centuries of recording wildlife

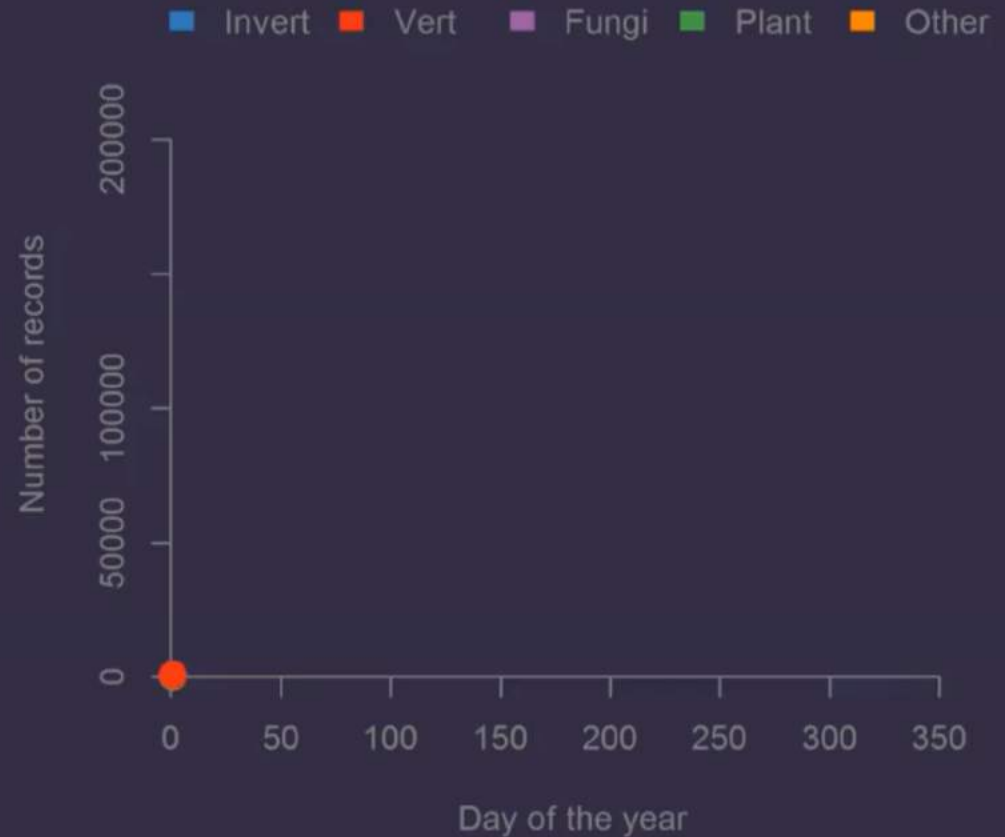




Every record counts - download a FREE app:  
<https://www.ceh.ac.uk/citizen-science-apps>

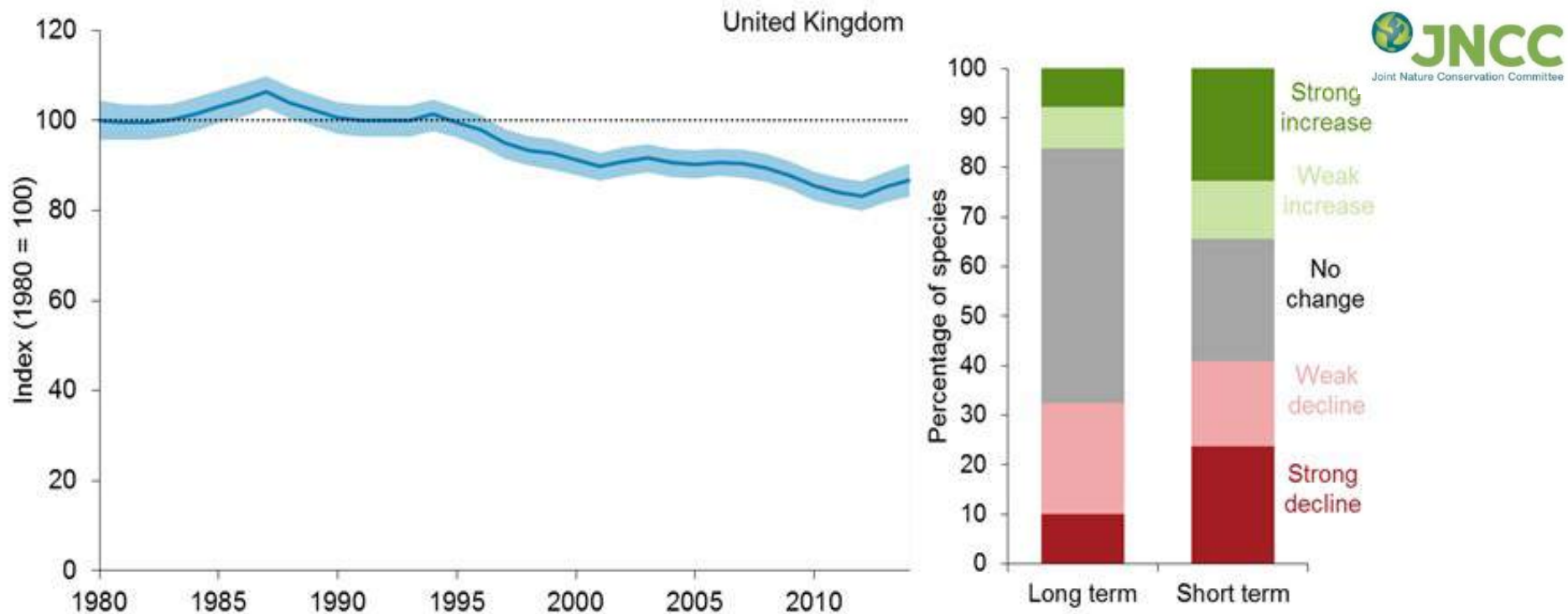
# Celebrating one year of recording wildlife

January



[www.brc.ac.uk/irecord](http://www.brc.ac.uk/irecord)

# Informing policy...



Average relative change in distribution of **389 species of wild bee and hoverfly** using 1km occurrence records

- Does the Indicator reflect changes in **abundance** of different groups?
- Can we improve these trend estimates with structured surveys?

# ...underpinning strategy



## Pollinator Monitoring Scheme: Flower-Insect Timed Count

Many wild and cultivated plants depend on insects to pollinate their flowers, with successful pollination leading to successful seed or fruit production. There are concerns that numbers of pollinating insects such as bees and flies may be declining, but we need more data to be able to track any changes in abundance across the country. The Flower-Insect Timed Count (FIT Count) is designed to collect new data on the numbers of flower-visiting insects, as part of a wider set of studies for a national [Pollinator Monitoring Scheme](#) (PoMS).



UK Research  
and Innovation



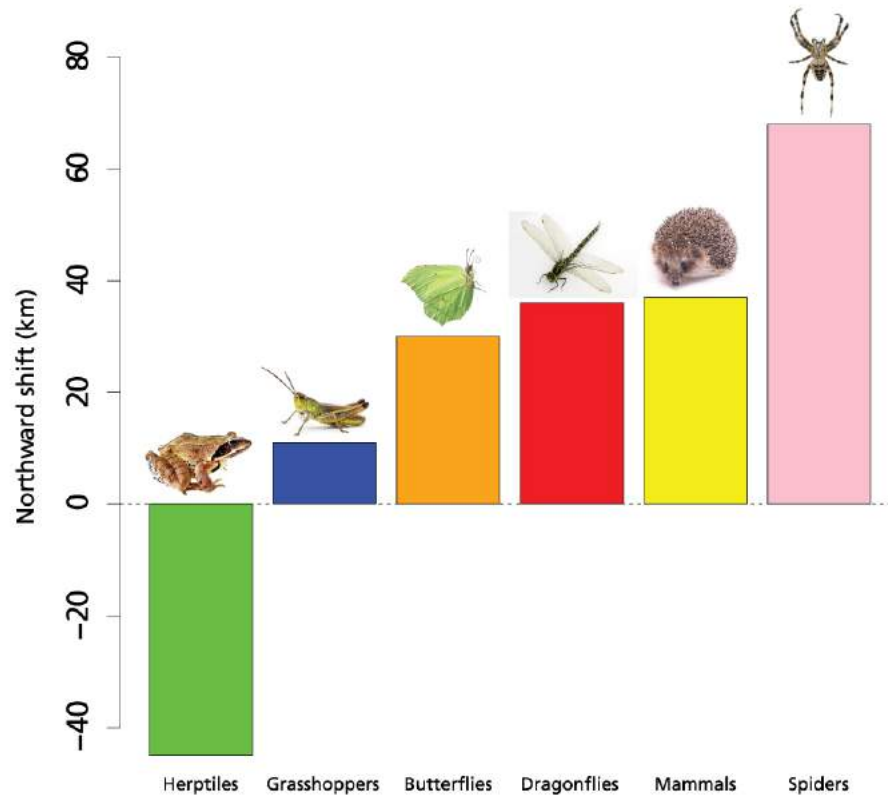
# Non-native species surveillance



# Informing conservation...



# Climate change and wildlife...



# New discoveries on your doorstep...

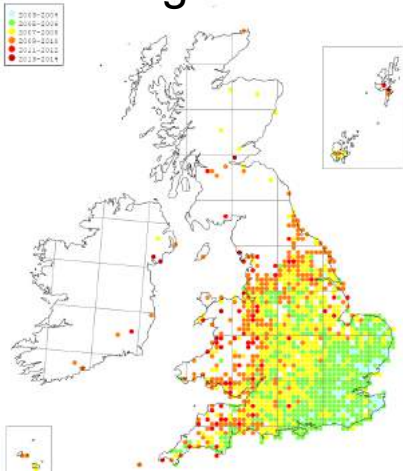


*Scymnus interruptus*

First county record for Oxfordshire  
(May 2013)

# The joy of wildlife recording

Big data



Engaging



Inspiring



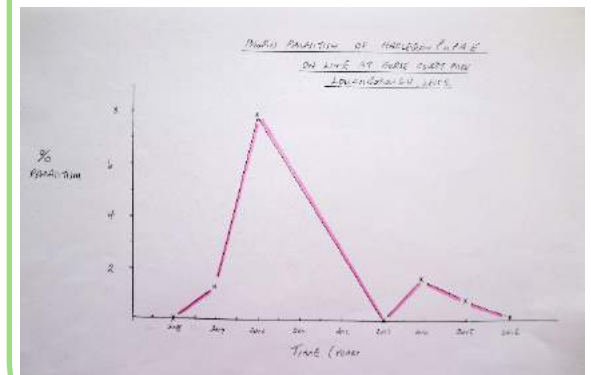
Fun and creative



Captivating



Collaborative



...a ladybird perspective



Jennifer Lewington

**UK Ladybird Survey**  
**[www.ladybird-survey.org](http://www.ladybird-survey.org)**





You Retweeted  
**St Marys CIW School** @StMarysCIW · Jun 20

Replying to @UKLadybirds @Natures\_Voice @GwentWildlife  
 What do ladybirds drink?



# Sharing excitement @UKLadybirds

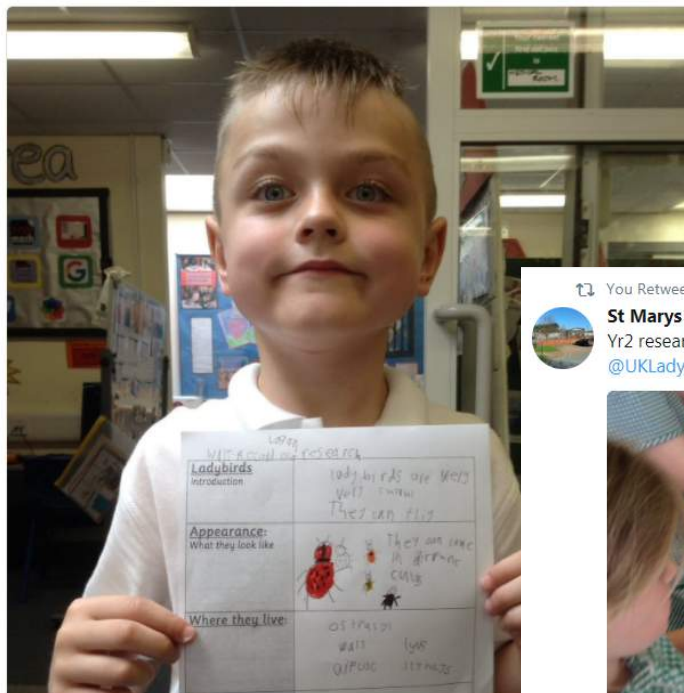


1 1



You Retweeted  
**St Marys CIW School** @StMarysCIW · Jun 20

Replying to @UKLadybirds  
 What are ladybirds favourite things to eat?



2 1



You Retweeted  
**St Marys CIW School** @StMarysCIW · Jun 20  
 Yr2 researching Ladybirds ready to write a report & find them outside  
 @UKLadybirds @Natures\_Voice @GwentWildlife



1 2 3

...everywhere



# Contributing records UK Ladybird Survey

## iRecord



The screenshot shows the iRecord website interface. At the top, there's a navigation bar with links like 'Home', 'About', 'Contact', 'Help', 'Privacy', 'Terms', 'FAQ', 'Feedback', 'Links', and 'Help/FAQ'. Below this is a search bar and a 'Log in' button. The main heading is 'Enter ladybird records'. There's a sub-heading 'What did you see and when?' followed by a date picker. Below that is a table with columns: Species, Colour form, Life stage, Quantity, Comment, and Add photos. The 'Species' column has a dropdown menu with 'Adelphi' selected. The 'Quantity' column has a dropdown menu with '1' selected. The 'Add photos' column has a button 'Add a photo'.

## Website

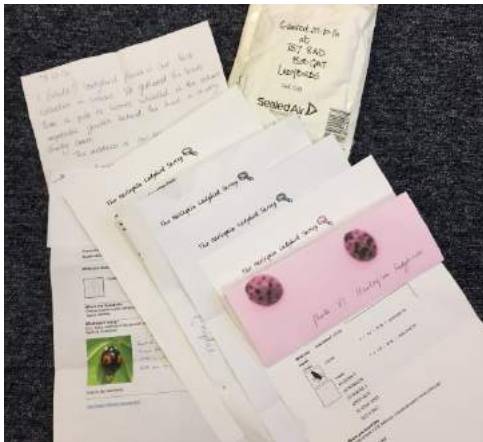


The screenshot shows the UK Ladybird Survey website. The main heading is 'Recording'. Below it, there's a sub-heading 'Online Recording Form'. The text explains that users can record and upload photos of any species they see, anytime, if they already have an iRecord account. It also mentions that records submitted here will be added to the UK Ladybird Survey. There's a section for 'Further information' with links to 'UK Ladybirds', 'BBC Breathing Places', 'Harlequin invasion', 'Recording', 'Recording form', 'Research', 'Children's pages', and 'Further information'.

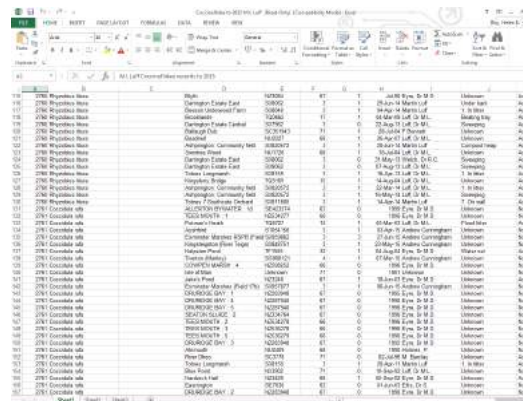
## Smartphone app



## Post



## Spreadsheets

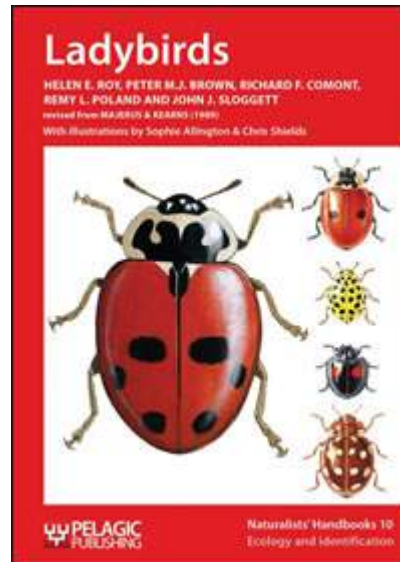


The screenshot shows a spreadsheet with columns for 'Date', 'Species', 'Quantity', 'Life stage', 'Comment', and 'Add photos'. The data is organized into rows, with each row representing a single ladybird sighting. The 'Date' column contains dates from 2014 to 2016. The 'Species' column contains various ladybird species names. The 'Quantity' column contains numbers representing the count of ladybirds. The 'Life stage' column contains life stage descriptions. The 'Comment' column contains additional information about the sightings. The 'Add photos' column contains links to photos of the ladybirds.

## E-mails

**From:** John Powell  
**Sent:** 26 October 2016 13:14  
**To:** ladybird-survey  
**Subject:** Sighting  
St. Annes on Sea, FY8. 1 adult in  
my garden on 29 June 2014.  
Sitting on the leaf of a potted  
plant as shown on the picture  
attached. Kindest regards, John

# Atlas, field guides and resources



**UK Ladybird Survey**

**Send a Ladybird Record!**

**UK Ladybirds**

- What is a ladybird?
- Anatomy
- Life cycle
- Species
- Habitat
- Enemies
- Monitoring

**BBC Breathing Places**

**Harlequin invasion**

**Recording**

**Research**

**Children's pages**

**Further information**

**Ladybird species in the UK**

There have been 3500 species of coccinellid described worldwide but until recently only 43 were considered as resident in Britain.

The herbivorous Bryony ladybird, *Epilachna argus*, and the small inconspicuous brown ladybird, *Rhyzobius chrysomeloides*, are recent additions but neither have attracted as much attention as the Harlequin ladybird, *H. axyridis*, first encountered in 2004.

Of the 46 ladybird species now found in Britain only 26 are readily recognisable as ladybirds and these are the focus of the Ladybird Survey.

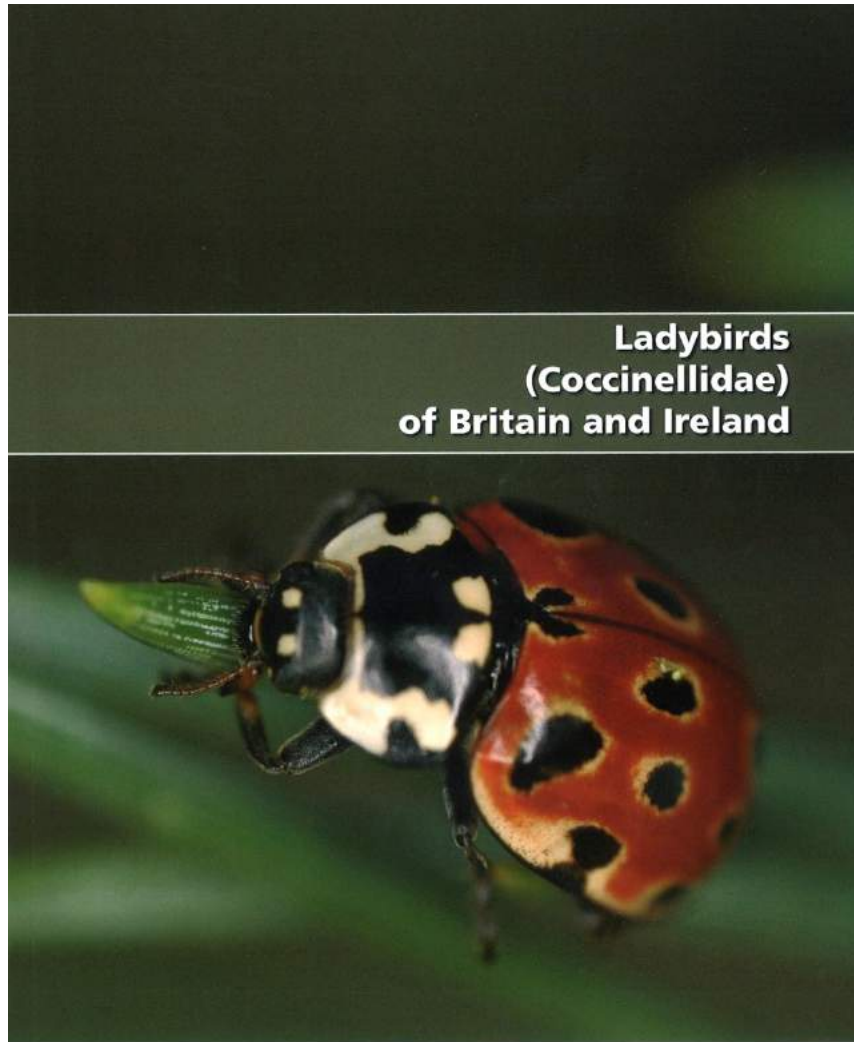
A **ladybird identification sheet** (103Kb) and a **ladybird larvae identification sheet** (290Kb) are available in PDF format.

Thanks to Jeroen Mentens for supplying many excellent photos.

Sub-family	Species	Common name
Epilachninae	<i>Epilachna argus</i> (Geoffroy in Fourcroy)	Bryony ladybird
Epilachninae	<i>Subcoccinella 24-punctata</i> (L.)	24-spot ladybird
Coccinellinae	<i>Adalia 10-punctata</i> (L.)	10-spot ladybird
Coccinellinae	<i>Adalia 2-punctata</i> (L.)	2-spot ladybird
Coccinellinae	<i>Adonia variegata</i> (Goeze)	Adonis ladybird
Coccinellinae	<i>Anatis ocellata</i> (L.)	Eyed ladybird
Coccinellinae	<i>Anisosticta 19-punctata</i> (L.)	Water ladybird
Coccinellinae	<i>Aphidecta obliterata</i> (L.)	Larch ladybird
Coccinellinae	<i>Calvia 14-guttata</i> (L.)	Cream-spot ladybird
Coccinellinae	<i>Coccinella 11-punctata</i> L.	11-spot ladybird
Coccinellinae	<i>Coccinella 5-punctata</i> L.	5-spot ladybird
Coccinellinae	<i>Coccinella 7-punctata</i> L.	7-spot ladybird
Coccinellinae	<i>Coccinella hieroglyphica</i> L.	Hieroglyphic ladybird
Coccinellinae	<i>Coccinella magnifica</i> Redtenbacher	Scarce 7-spot ladybird
Coccinellinae	<i>Halysia 16-guttata</i> (L.)	Orange ladybird
Coccinellinae	<i>Harmonia 4-punctata</i> Pontoppidan	Cream-streaked ladybird
Coccinellinae	<i>Harmonia axyridis</i> (Pallas)	Harlequin ladybird
Coccinellinae	<i>Hippodamia 13-punctata</i> (L.)	13-spot ladybird
Coccinellinae	<i>Myrrha 16-guttata</i> (L.)	16-spot ladybird



# From ladybird atlas to field guide



## Field Guide to the **Ladybirds** of Britain and Europe



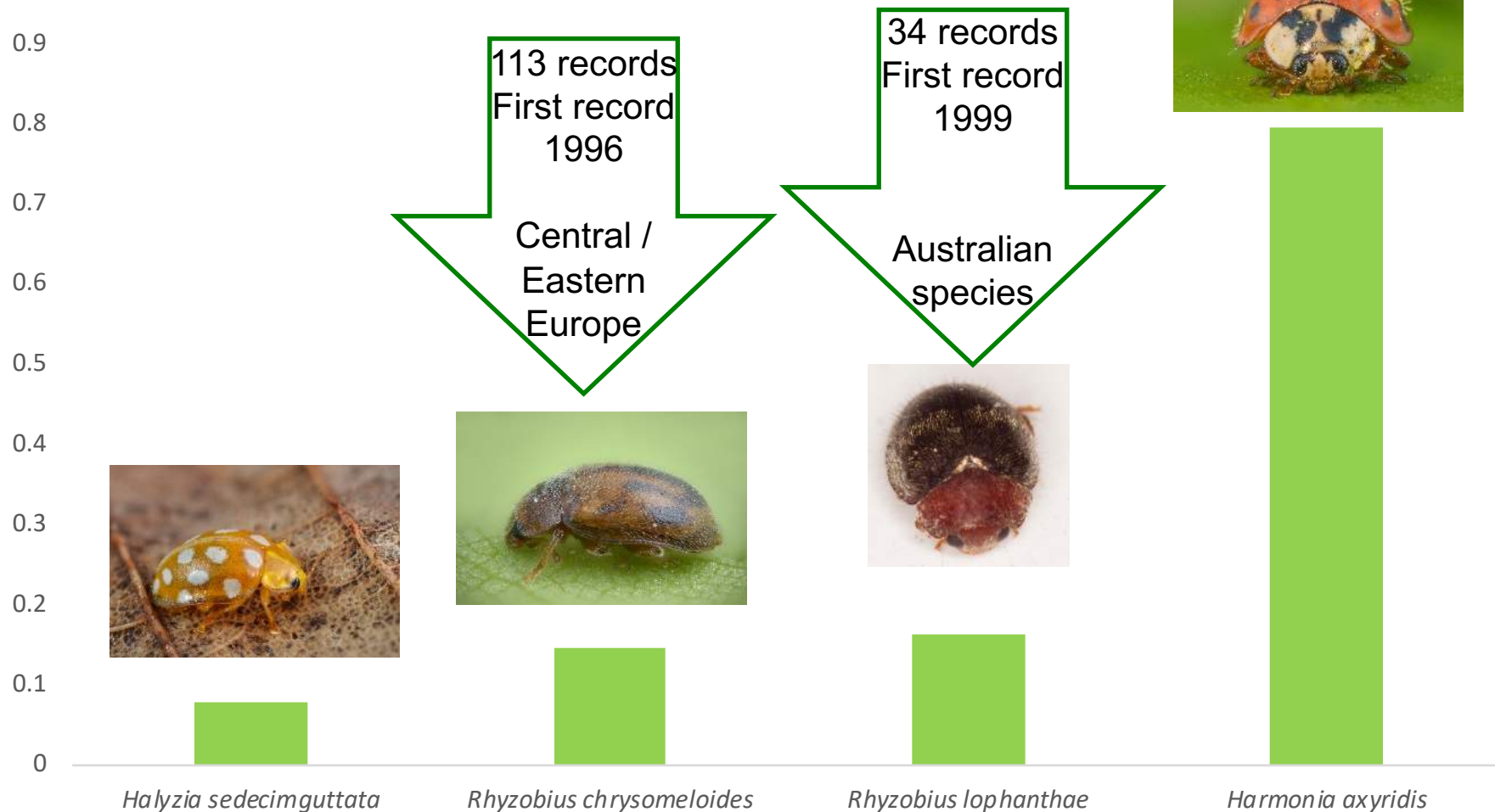
More than 200 000 records; 19000 recorders



# Species in decline (1995-2015)



# Species on the increase



# From ladybirds to hornets



*Vespa velutina*

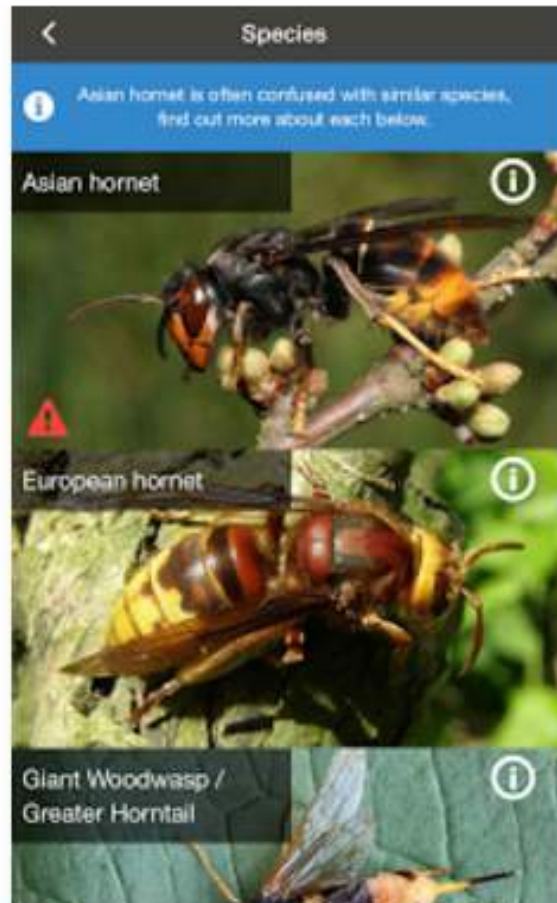
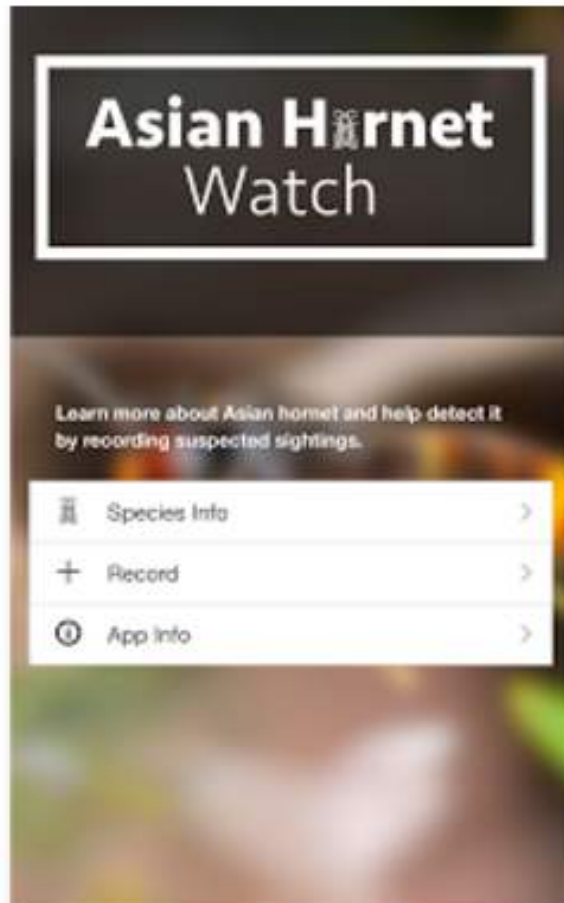
Terrestrial predator

Native to China

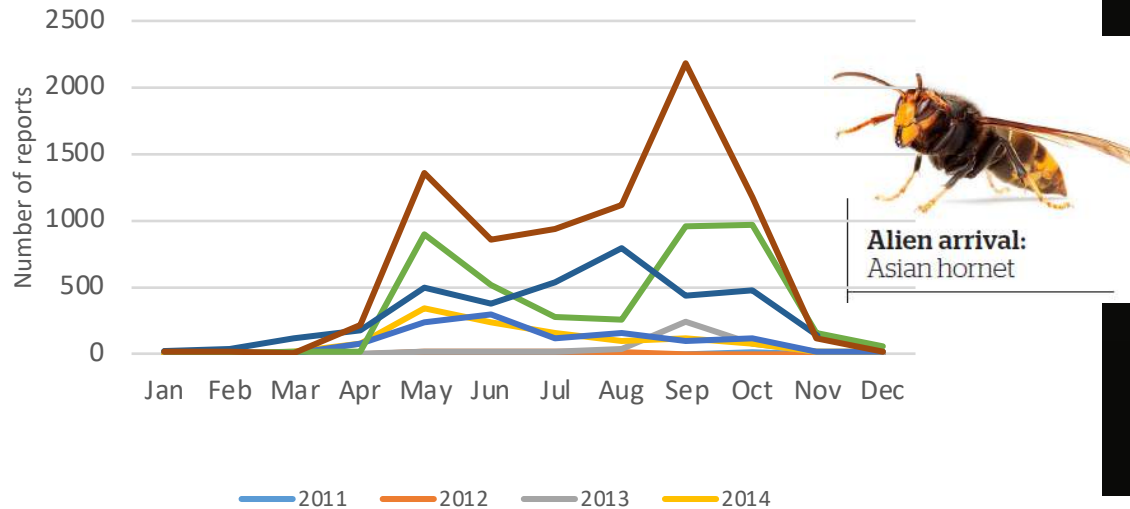
Arrived in pottery  
consignment

Bordeaux, France in  
2004

# Asian Hornet Watch



# Citizen science for monitoring invasions



Asian hornet – arrived September 2016



Eradicated in 2016 and 2017  
★ New records Autumn 2018



Increasing understanding of alien species through citizen science



COST is supported by the EU  
RTD Framework Programme

# ...charismatic species...



...amazing recorders...



# Unravelling ecology together...



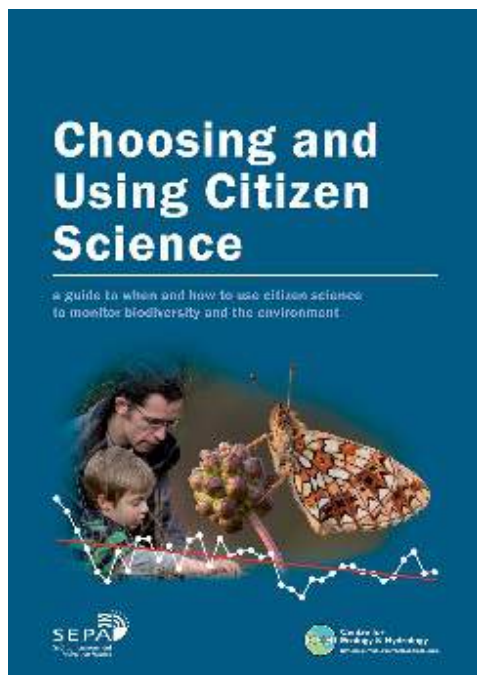
# Summary

- Many, many reasons for engaging people with biodiversity
  - Need for big data to address big ecological questions
  - Need to engage people in decision-making
  - ...etc
- But words can not describe the joy of celebrating biodiversity together

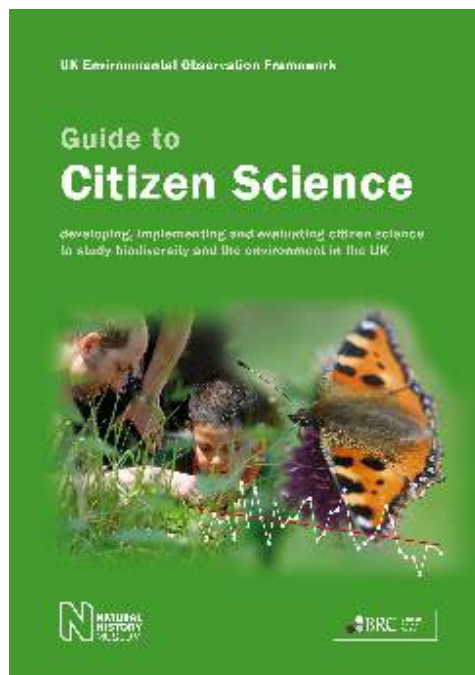


# Tool kits for citizen science...

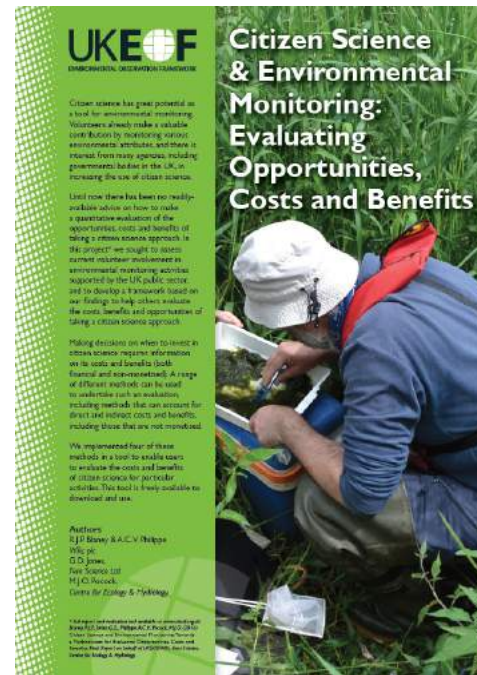
How to choose  
citizen science  
approaches



How to run citizen  
science well



Evaluating cost-  
benefits of citizen  
science



# Thank you



COST is supported by the EU  
RTD Framework Programme



UK Research  
and Innovation