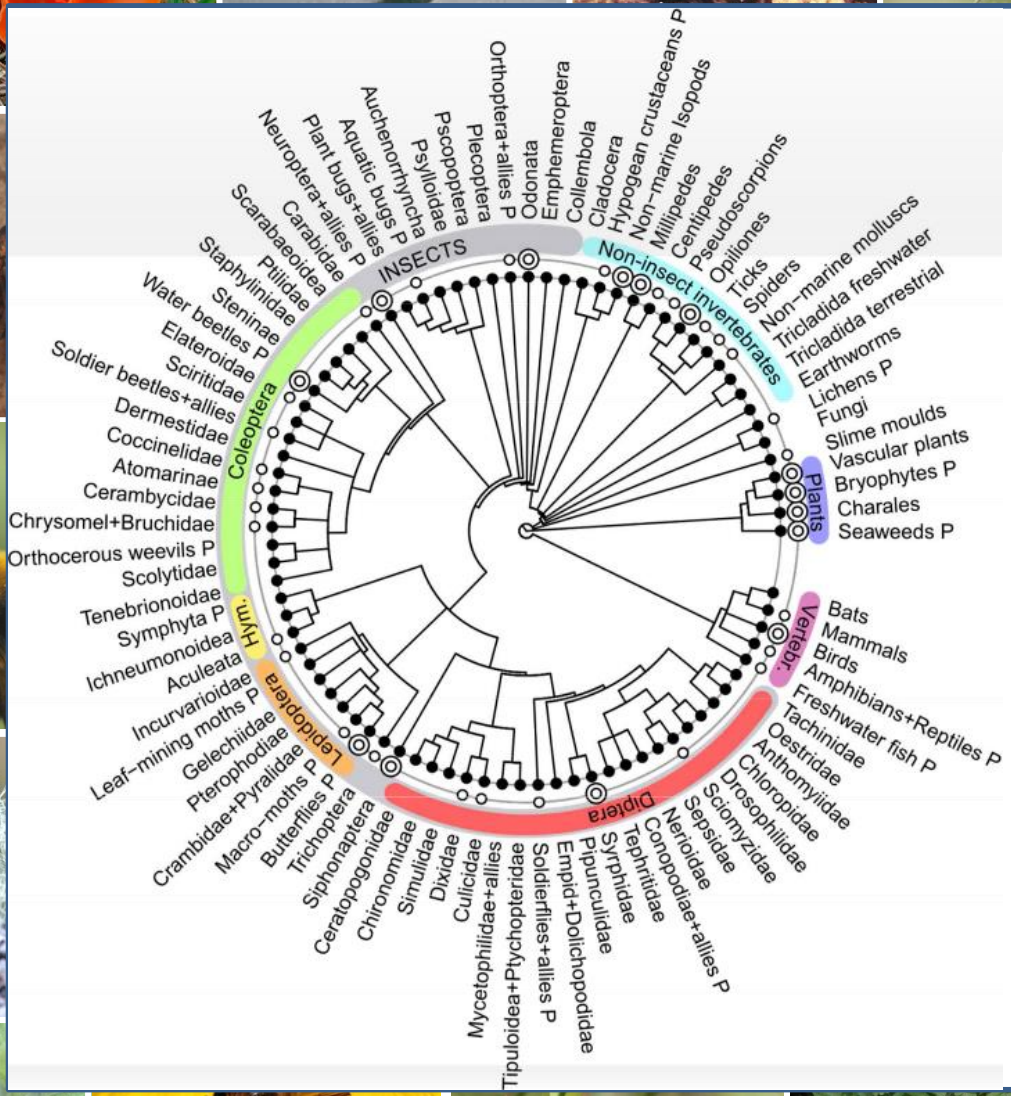
Future perspectives on BRC/BSBI collaborations

David Roy

Head of Biological Records Centre

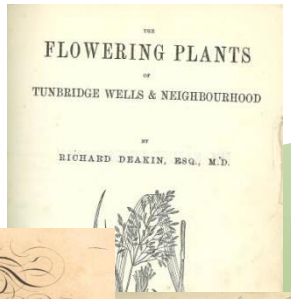
Head of CEH Monitoring

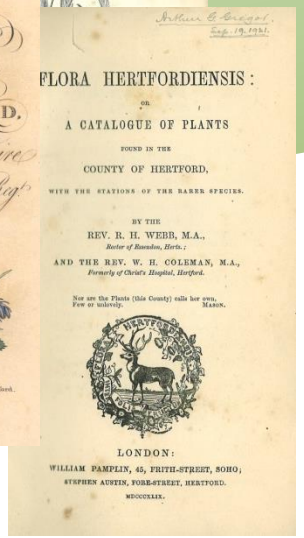
85 Recording Schemes and Societies



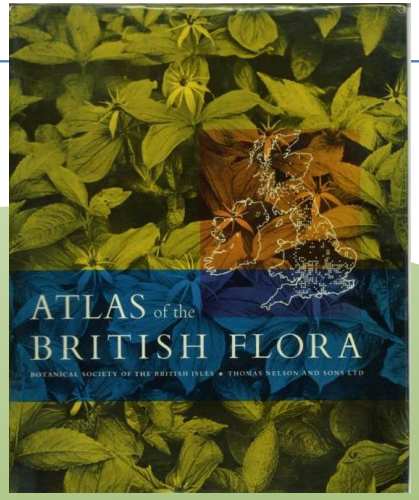
Tree of national recording schemes

- *Atlas published*
- *Repeat atlas*

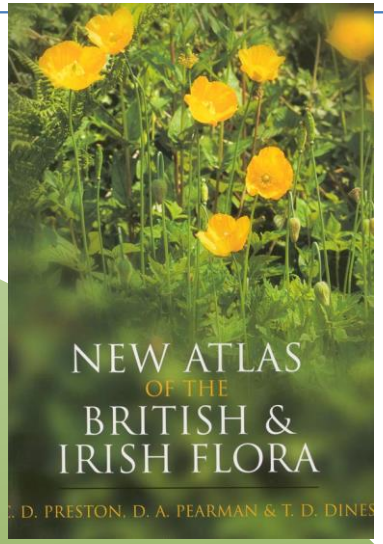




Pre 1940

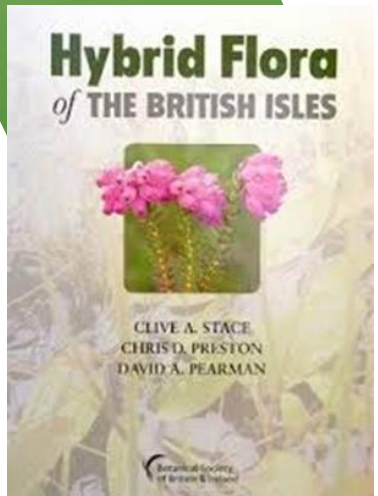


1962



2002

2012



2015

2016-2017

NPMS NYPH

Atlas 2020

Bridget3009

John Bennett

Dave Morris

Alexander Kachkaev

Examples of applying biological recording data

The BRC	5
A time before BRC	6
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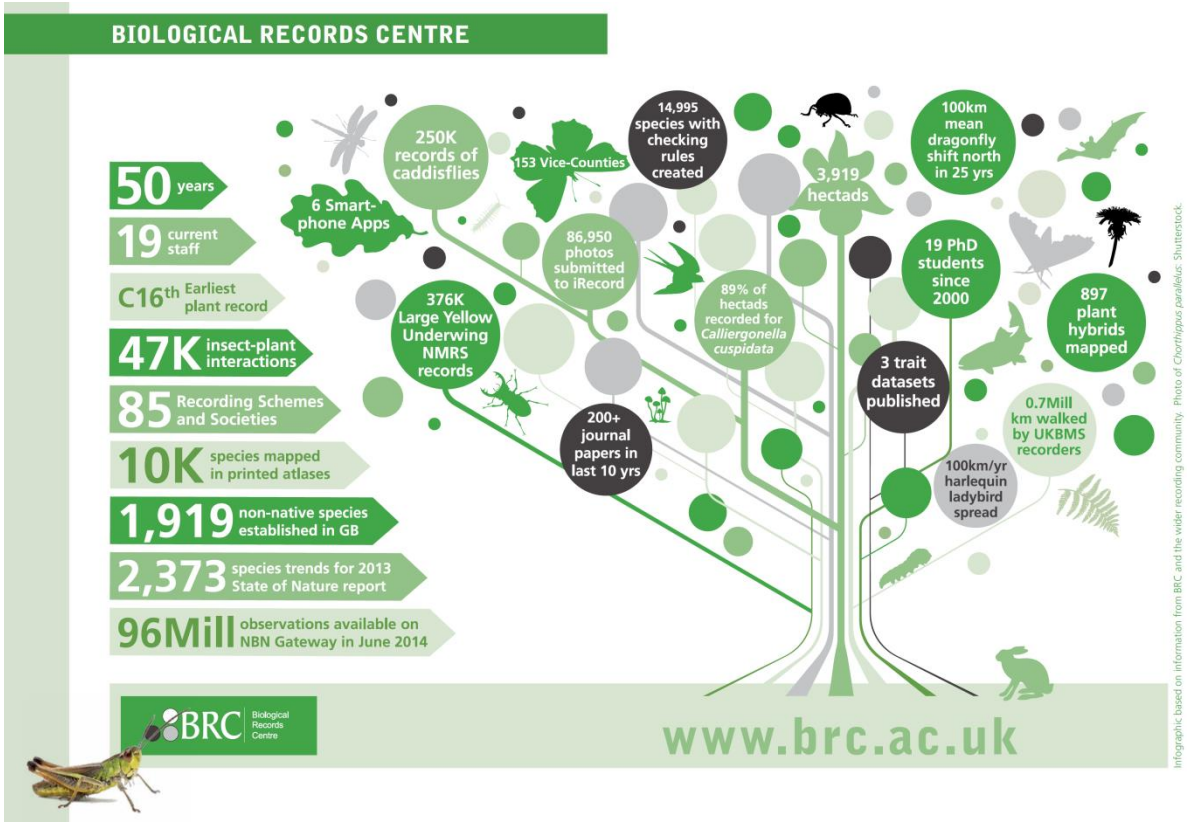

http://www.brc.ac.uk/article/brc-50th-anniversary-brochure-published

Future opportunities for collaboration (2 years ago)

- Atlases
- Measuring change and understanding causes
- Technology to support recording and verification
- Specific surveys to understand the impacts of new threats, e.g. Non-natives; new diseases
- Establishing a National Plant Monitoring Scheme

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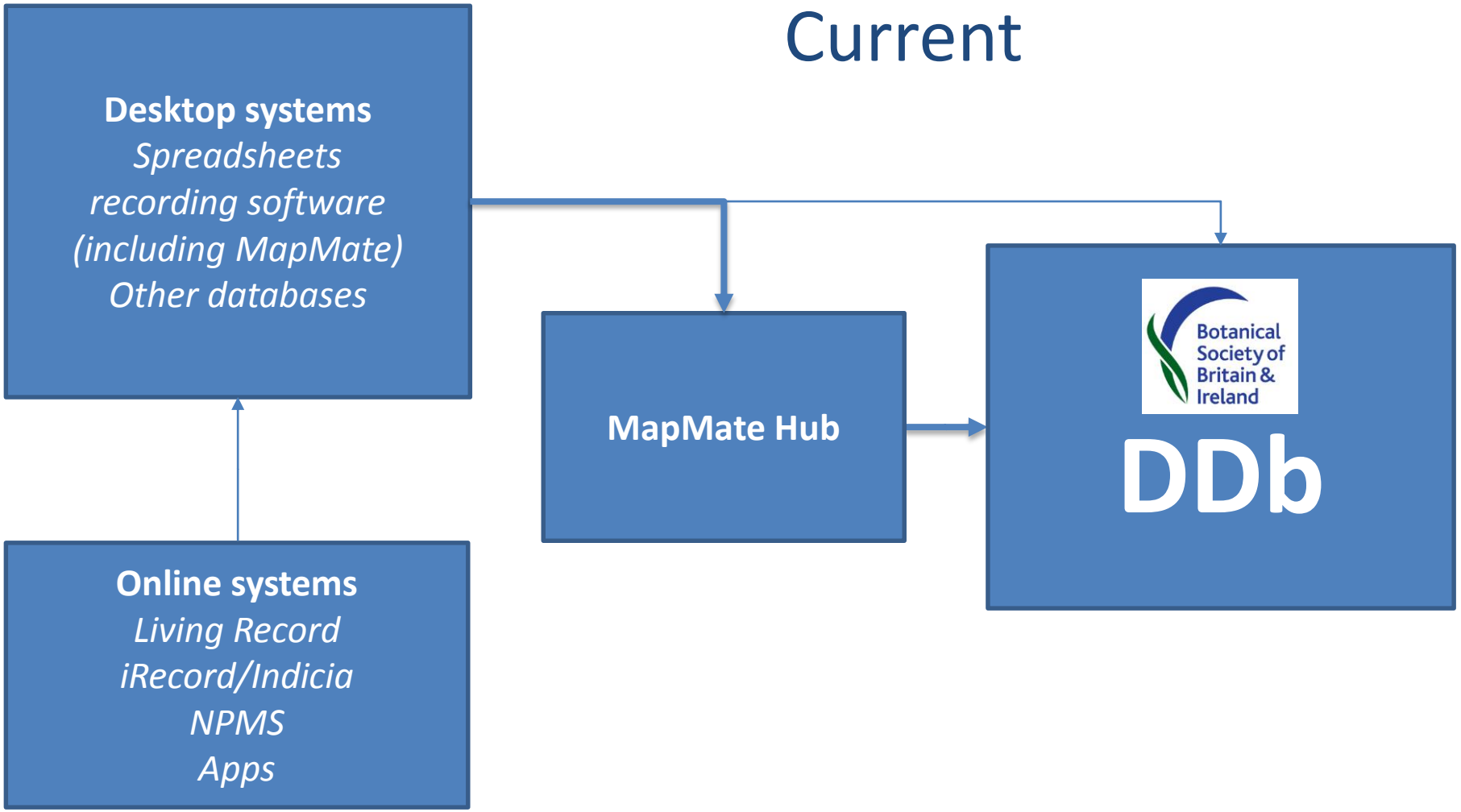
Systems to support recorders



Systems to support recorders

Future?

Online systems

Living Record

iRecord/Indicia

NPMS

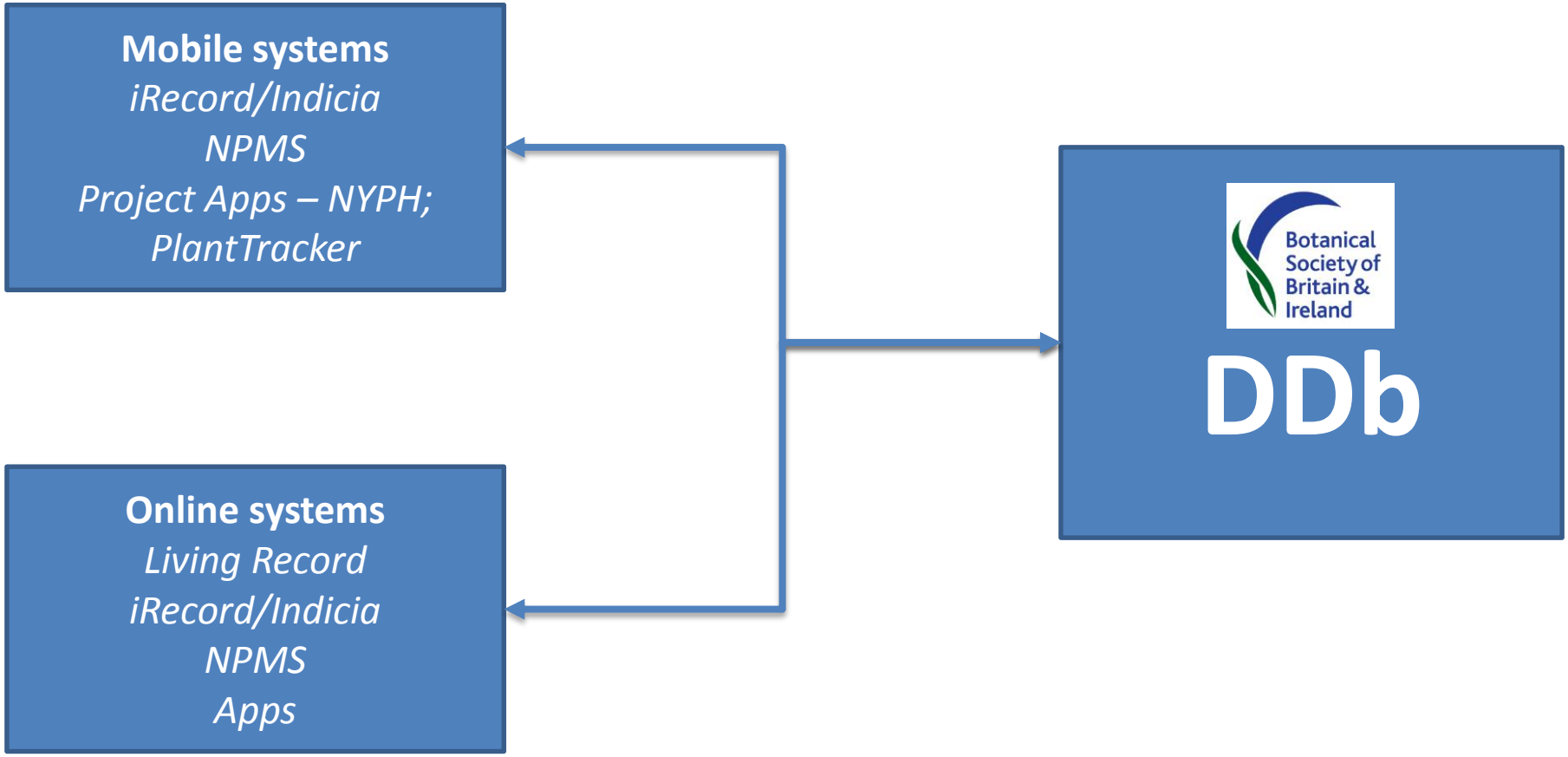
Apps

Botanical Society of Britain & Ireland

DDb

Systems to support recorders

Future?



Plant recording iRecord/Indicia

Source	Type	Count
iRecord	General recording	220,000
Local Record Centre online systems	Various, general recording	140,000
NPMS	Structured survey	76,000
Wildflower count	Structured survey (historic)	60,000
PlantTracker	Invasive species app	21,000
NBN Consultants Portal	Specific surveys	3,200
Total		**544,000**

23,374 people have submitted data
4,600 (20%) people have submitted records for flowering plants
3,200 (14%) people have submitted records for flowering plants and other group

Enter a vascular plant record card

Grid square | Plant records | Review and submit

Date:

25/7/2016 *

Select the date of the record.

Recorder name(s):

Roy, David *

Enter the recorder's name, if different.

Location:

Crowmarsh Gifford Remember site *

Give a name, or set of names, that describe the locations surveyed.

Enter a 1km or 2km grid reference:

SU6189 *

Enter the grid square recorded. Use DINTY (e.g. SP12A) format for tetrads.

Or search for a place on the map:

Search

Or simply click on your rough position on the map.

Excellent! 1km square selected. If your position is wrong, either click your actual position again or zoom out until your position comes to view, then retry.

Time surveying (hh:mm):

3:30

Notes:

Mainly focused on small reserve adjacent to river

Enter a vascular plant record card

Grid square | Plant records | Review and submit

You are entering records for **SU6189**.

Please enter all the species you saw at one site on a single day and any other information about them. You can enter a grid ref for any records which you'd like to provide a precise location for, otherwise leave this box blank to use the grid square SU6189 for the record. Then move to the **Review and submit** tab before submitting your records.

Species	Determiner	Status	Stage	Finer grid ref	Add photos
Urtica dioica - Common Nettle		Native	flowering		Add images
Cornflower - *Centaurea cyanus* 3		Introduced	flowering	SU611893	Add images
Corn Marigold - *Glebionis segetum*		Introduced	flowering	SU611893	Add images
Acer campestre - Field Maple		Introduced - established	mature		Add images
Acer pseudoplatanus - Sycamore		Introduced - established	mature		Add images
Himalayan Balsam - *Impatiens glandulifera*		Introduced - Invasive	flowering	SU608889	Add images
Ragged-Robin - *Silene flos-cuculi*		Introduced	flowering		Add images
Bulbous Buttercup - *Ranunculus bulbosus* 2		Native	vegetative		Add images
Ranunculus acris - Meadow Buttercup 2		Native	flowering		Add images
		Native	flowering		*Select a species first*

Outside the boundary of the main grid s

Use * as a wildcard when searching for species names.

Enter a vascular plant record card

Grid square | Plant records | Review and submit

Review information

Date	25/7/2016
Recorder name(s)	Roy, David
Location	Crowmarsh Gifford
Enter a 1km or 2km grid reference	SU6189
Time surveying (hh:mm)	3:30
Notes	Mainly focused on small reserve adjacent to river

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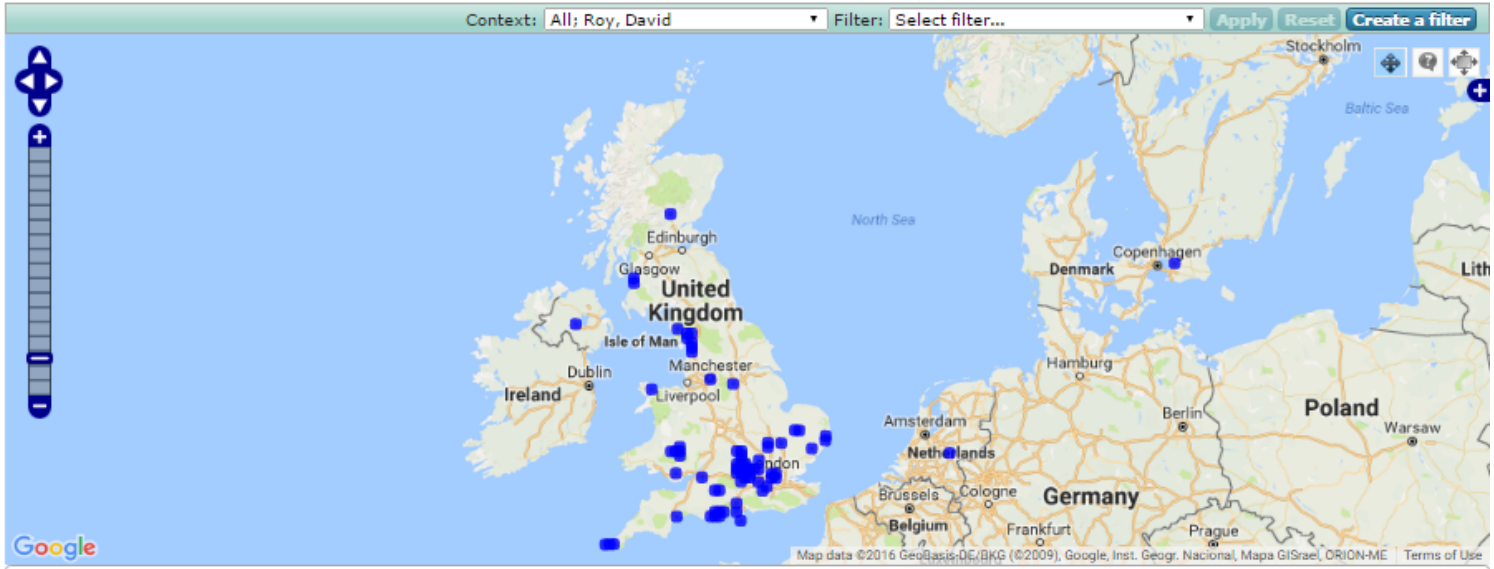
Bulbous Buttercup - *Ranunculus bulbosus*		Native	vegetative	
Ranunculus acris - Meadow Buttercup		Native	flowering	

Submit

Explore my records



Records | Species | Taxon groups | Families | Photos

Taxon Group	Number of Records	Number of Taxa
amphibian	4	2
bird	14	6
conifer	1	1
echinoderm	1	1
flowering plant	206	147
horsetail	1	1
insect - beetle (Coleoptera)	228	30
insect - butterfly	1032	46
insect - dragonfly (Odonata)	5	5
insect - hymenopteran	11	7
insect - mayfly (Ephemeroptera)	1	1
insect - moth	1656	265
insect - orthopteran	4	3
insect - scorpion fly (Mecoptera)	1	1
insect - true bug (Hemiptera)	9	4
insect - true fly (Diptera)	4	4
marine mammal	1	1
mollusc	1	1
Plants	1	1
spider (Araneae)	2	2

first prev 1 2 next last

Showing records 1 to 20 of 22

Download this report

Capture of data in the field?

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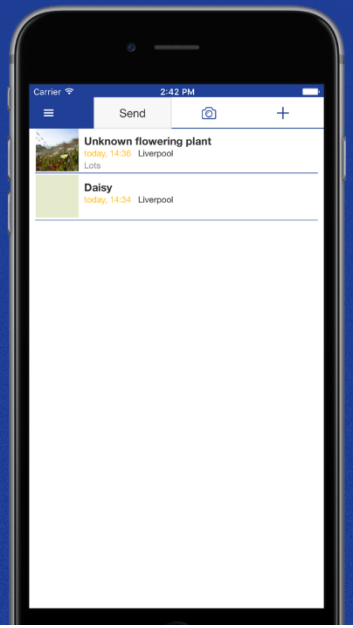
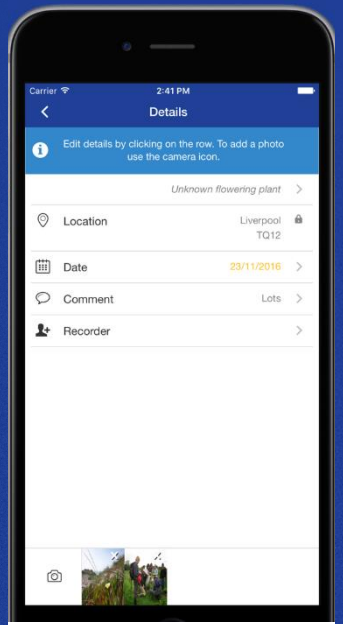
New Year Plant Hunt

Join the hunt



Add details



Attach photos

Use GPS or find on a map

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CEH Centre for Ecology & Hydrology
NATURAL ENVIRONMENT RESEARCH COUNCIL

JNCC
Joint Nature Conservation Committee

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- 1494 established non-native plants

Botanical Society of Britain & Ireland

- 420 established non-native animals
- 234 established non-native species designated as having negative ecological or human impact:
  - 96 (6.4%) established non-native plants
  - 136 (32.4%) established non-native animals

Roy et al. (2014) *Biological Invasions*

Table 1 Number of species within each expert group considered at each stage of the horizon-scanning process: preliminary consultation, consensus-building and list of top 30 potential IAS

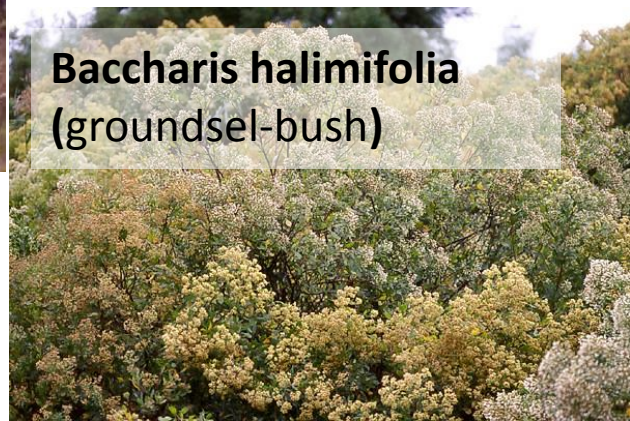
Expert group	Number of species considered during preliminary consultation	Number of species considered during consensus-building	Number of species within top 30
Plants	113	74	4
Freshwater invertebrates	41	32	2
Marine species	59	52	11
Vertebrates	335	60	7
Terrestrial invertebrates	43	27	6
Total	591	245	30

Myriophyllum heterophyllum (broadleaf watermilfoil)

Nassella neesiana (Chilean needlegrass)

Microstegium vimineum (Nepalese browntop)

Baccharis halimifolia (groundsel-bush)



Invasives – tracking spread

CAMBRIDGE news NEWS SPORT WHAT'S ON BUSINESS IN YOUR AREA SIGN IN

News › Cambridge News › River Cam

'The river could become unusable' – Invasive species Pennywort continues to fill the Cam

The Cam could become 'unusable' as an invasive plant continues to spread in Grantchester

23 SHARES COMMENTS BY SAMAR MAGUIRE 11:37, 19 OCT 2016 | UPDATED 11:48, 19 OCT 2016 NEWS

Pennywort being removed from the Cam (Photo: Cam Conservators)

Get Daily updates directly to your inbox
Enter your email + Subscribe

The Cam could become 'unusable' as an invasive plant continues to spread, river managers warned yesterday.

23 SHARES

Specialist work took place in February this year to remove the floating pennywort, but efforts proved

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BEFORE
AFTER
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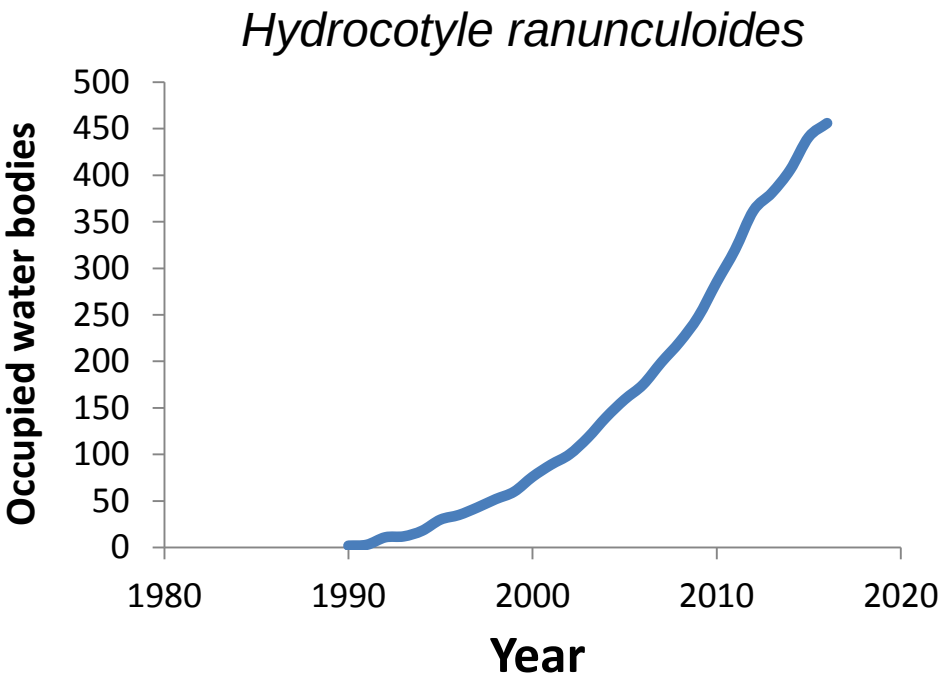
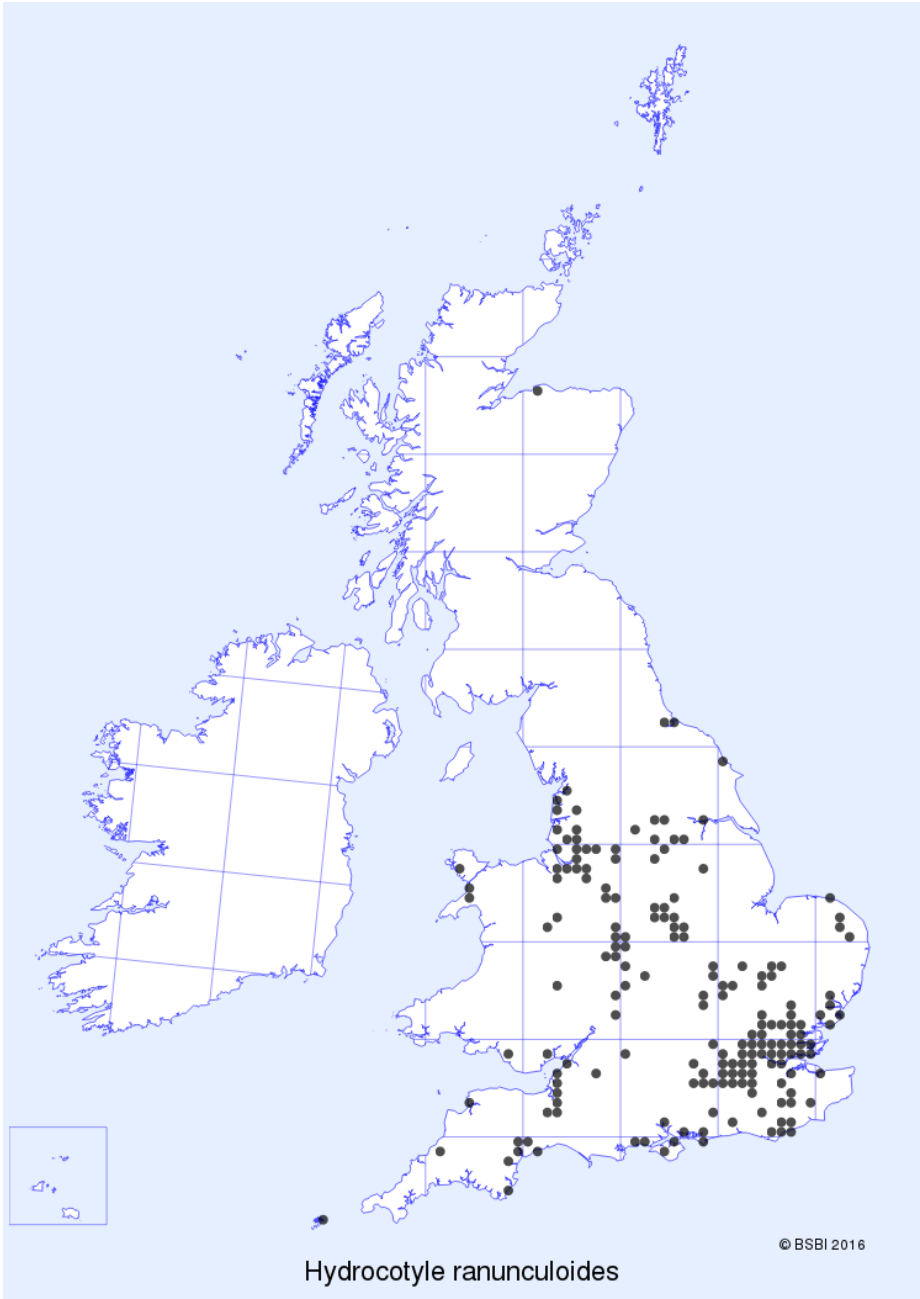
Woman hospitalised after throwing herself in front of moving car following out-of-control argument in Cambridgeshire

Invasives – tracking spread





Invasives – predicting risk

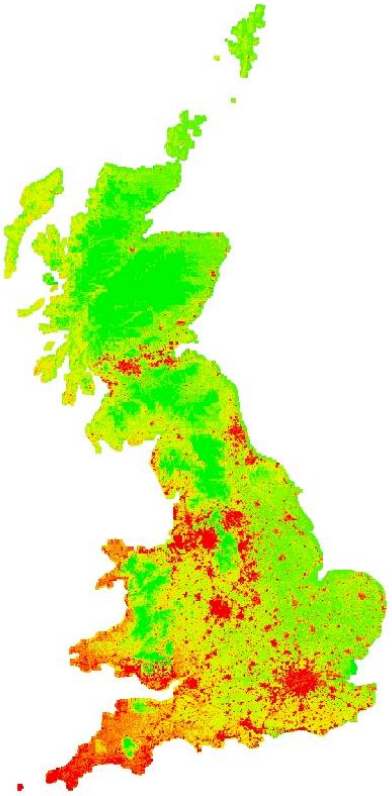
FINANCIAL TIMES

HOME WORLD UK COMPANIES MARKETS OPINION WORK & CAREERS LIFE & ARTS

UK Property + Add to myFT

Why you could get an Asbo for not looking after your knotweed

Fail to control the plant on your land and you could end up with an antisocial behaviour order. One option — try eating it



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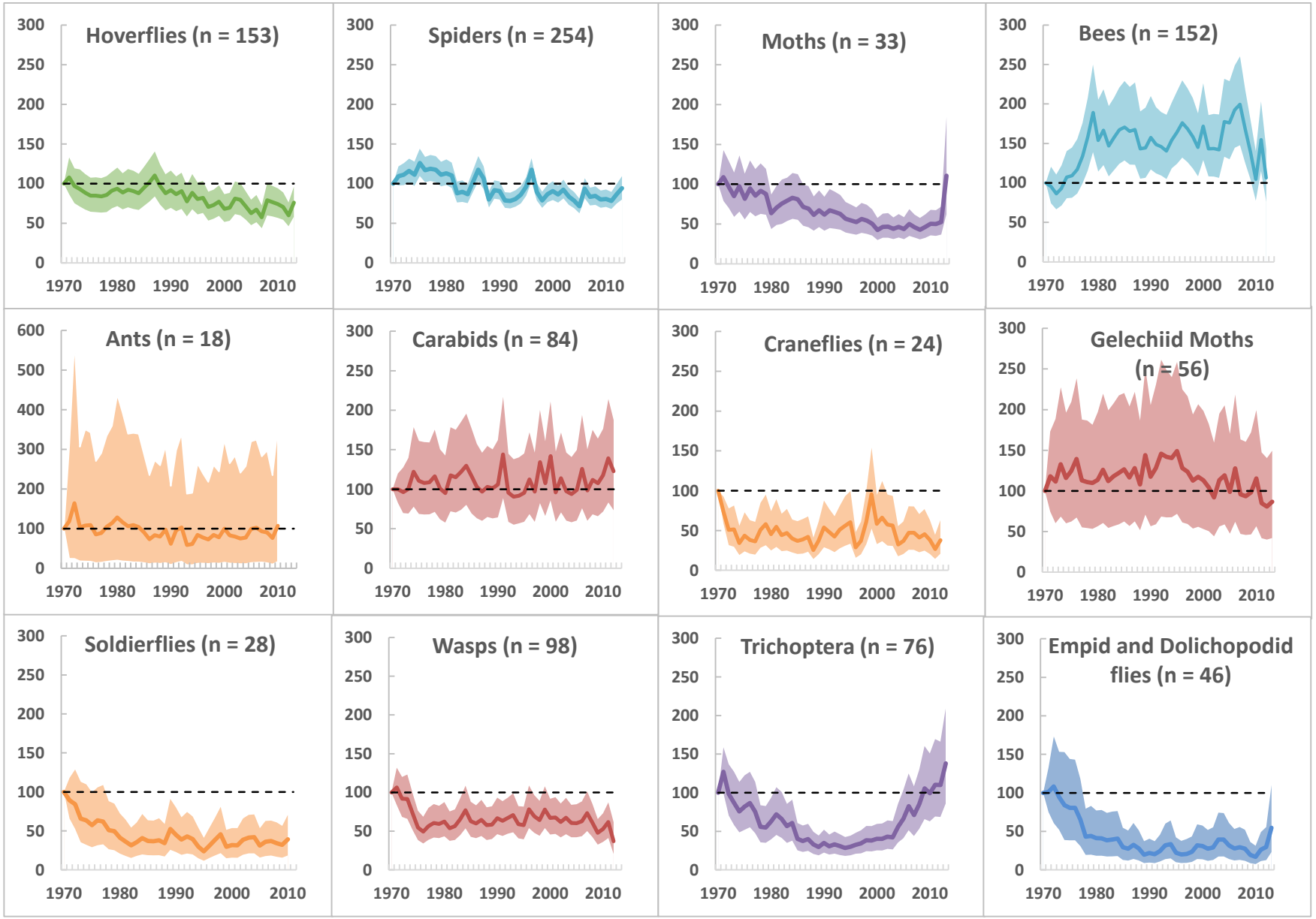
‘State of nature’ reports

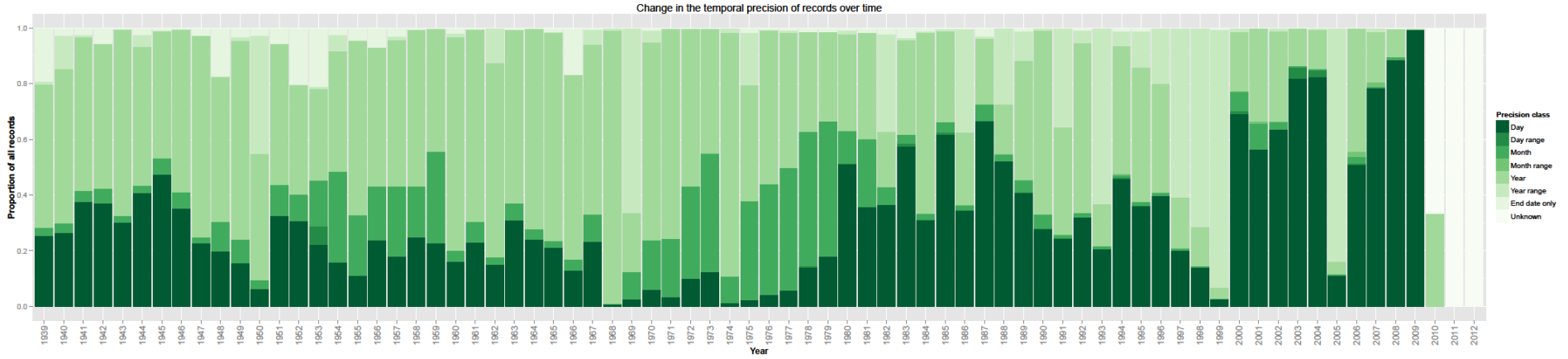


Model requirements for SoN

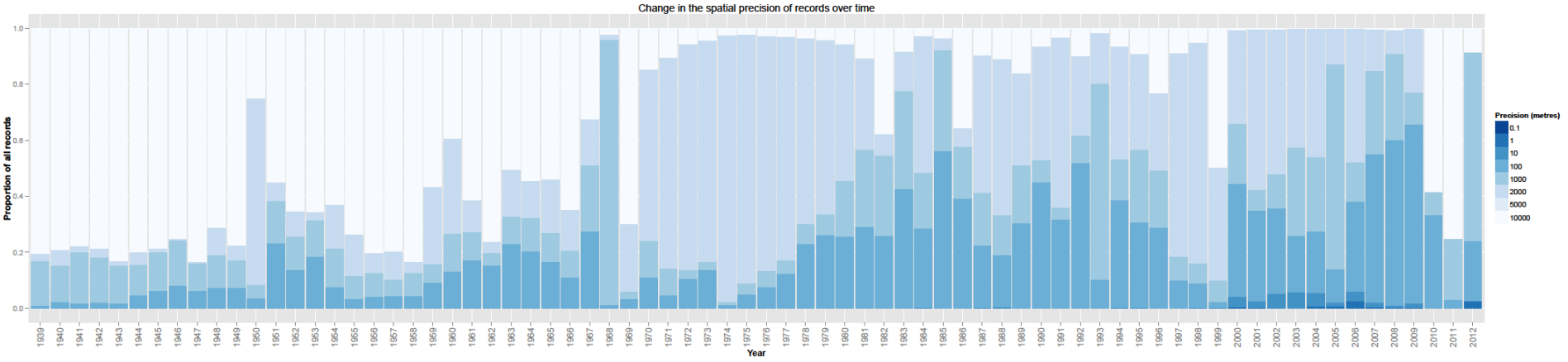
- Spatial Scale: 1km
- Temporal scale: day observations
- Temporal replication: at least some sites must have multiple visits per year. We also exclude all sites with records from only a single year.
- Lists: we make assumptions about detectability of species based on how they occur on lists

Patterns of recording in plants

Temporal precision

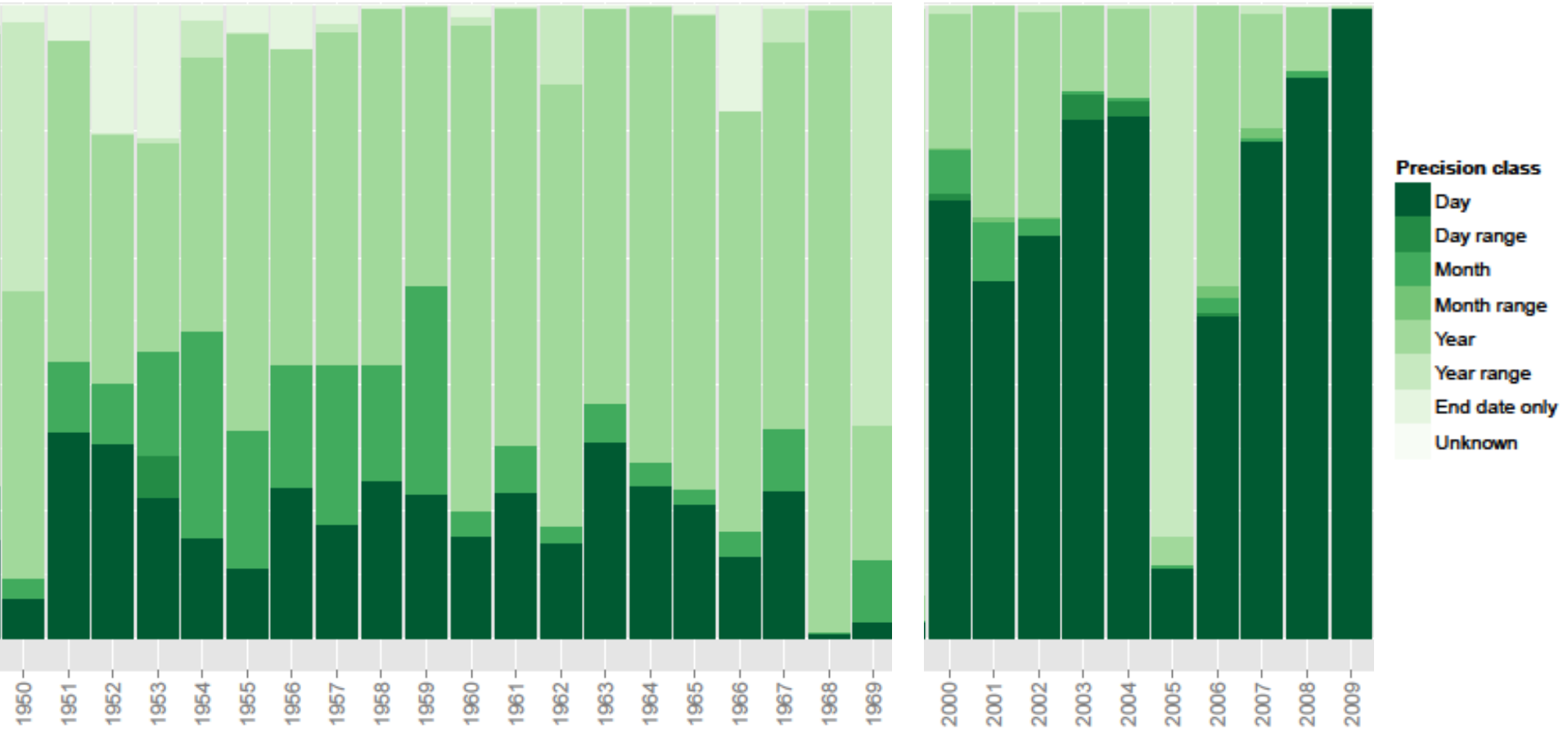


Spatial precision



Patterns of recording

Temporal precision



Patterns of recording

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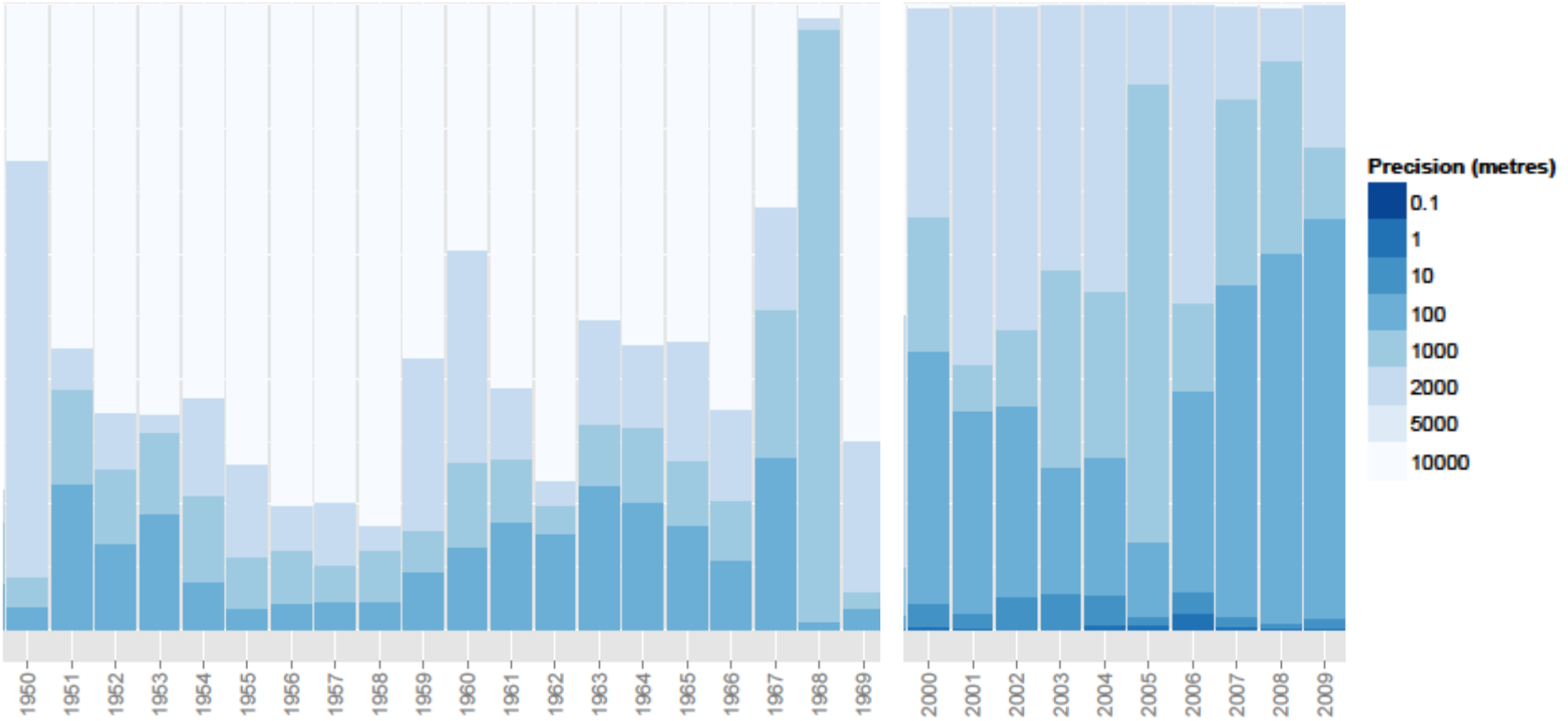

Models for plants

- Spatial Scale: 1km or 2km
- Temporal scale: day observations
- Temporal replication: at least some sites must have multiple visits per period (5 yearly).
- Lists: understand how plants are detected during recording visits

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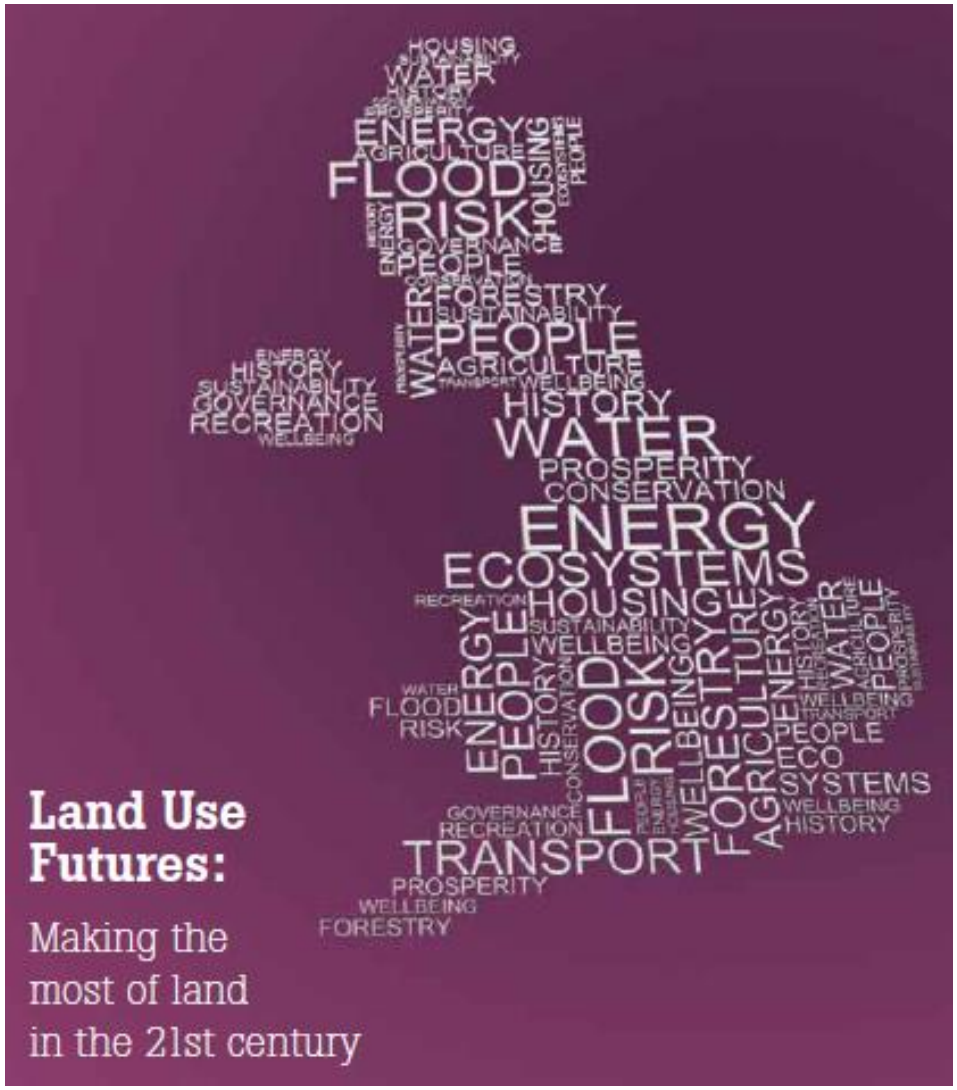
Emerging challenges



Future challenges

- Climate change
- Biological invasions
- Human demographics
- Economic growth and consumption patterns
- New technologies
- Social preferences and attitudes
- Policy and regulatory environment

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Promoting the study, understanding and enjoyment of British & Irish wild plants since 1836.
Recording and mapping what grows where.
Using this knowledge to support nature conservation.
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Acknowledgements

All volunteer recorders & co-ordinating organisations

Botanical Society of Britain & Ireland

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NBN National Biodiversity Network

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For presentation material:

Michael Pocock, Helen Roy, Nick Isaac, Kevin Walker, Charlie Outhwaite, Tom Oliver, Tom August, Oli Pescott