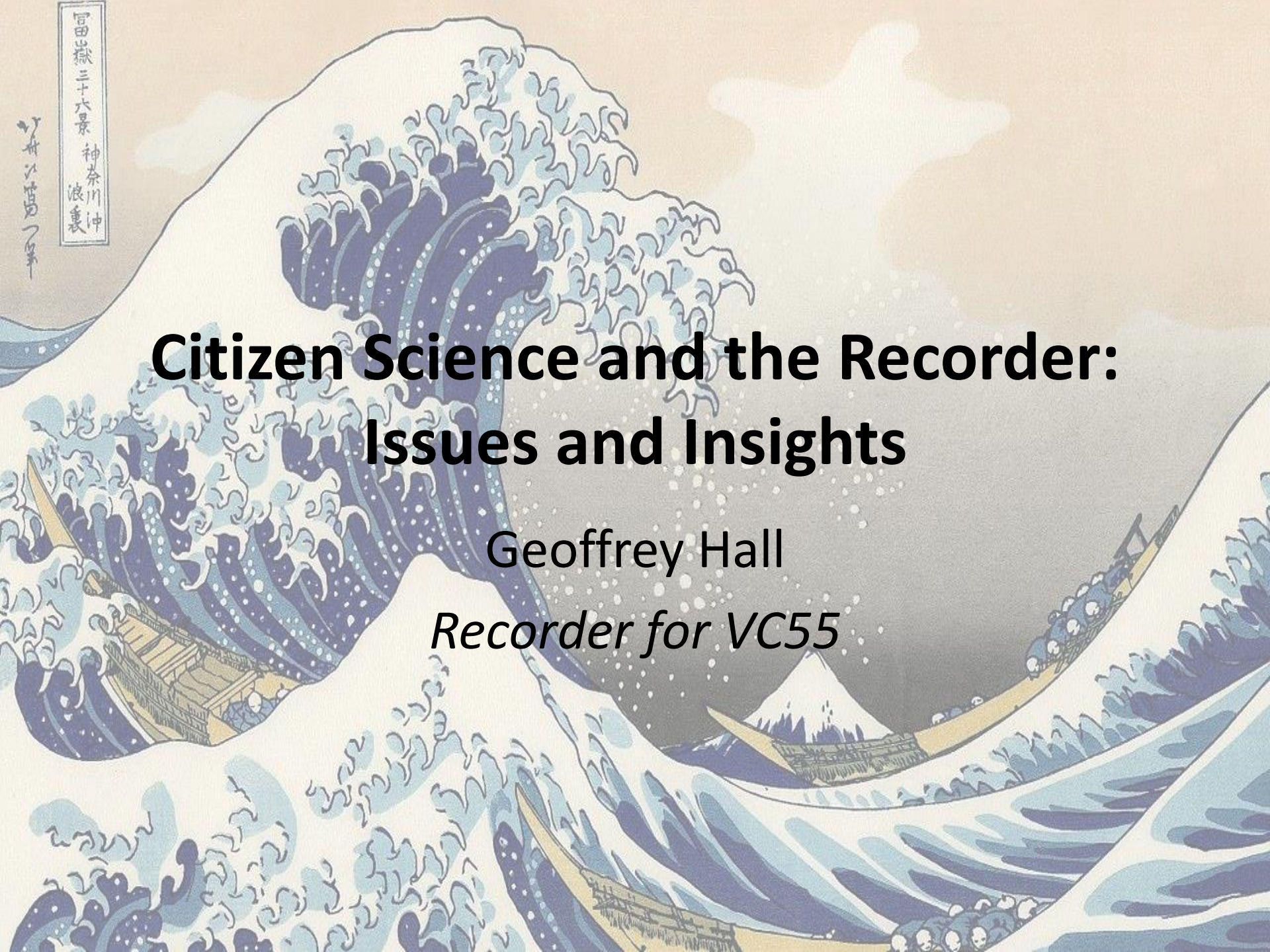


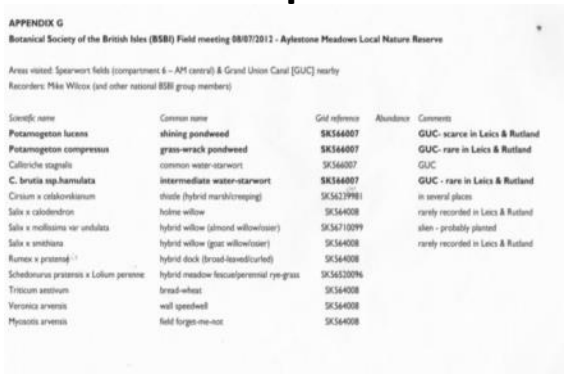
Citizen Science and the Recorder: Issues and Insights

Geoffrey Hall

Recorder for VC55

A Deluge of Records

Report



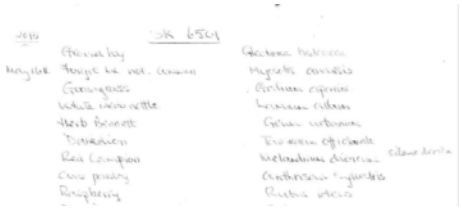
APPENDIX G

Botanical Society of the British Isles (BSBI) Field meeting 08/07/2012 - Aylestone Meadows Local Nature Reserve

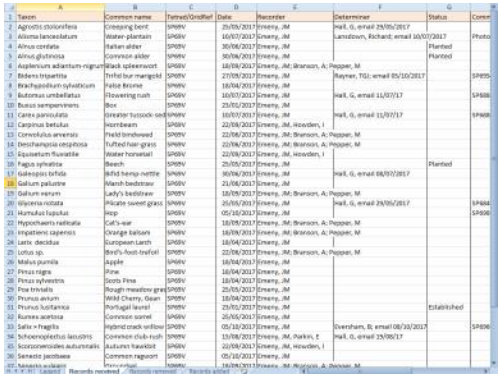
Areas visited: Spearwort fields (compartment 6 – AM central) & Grand Union Canal [GUC] nearby
Recorders: Mike Wilcox (and other national BSBI group members)

Scientific name	Common name	Grid reference	Abundance	Comments
Potamogeton lucens	**shining pondweed**	**SK544007**		**GUC- scarce in Leics & Rutland**
Potamogeton compressus	**grass-wrack pondweed**	**SK544007**		**GUC- rare in Leics & Rutland**
Calliriche stagnalis	common water-starwort	SK544007		GUC
C. brutia ssp.hamulata	**intermediate water-starwort**	**SK544007**		**GUC - rare in Leics & Rutland**
Cirsium x celakovskianum	thistle (hybrid marsh/creeping)	SK5623998I		in several places
Salix x calodendron	holme willow	SK564008		rarely recorded in Leics & Rutland
Salix x mollissima var undulata	hybrid willow (almond willow/osier)	SK5610099		alien - probably planted
Salix x smithiana	hybrid willow (goat willow/osier)	SK564008		rarely recorded in Leics & Rutland
Rumex x pratensis	hybrid dock (broad-leaved/curled)	SK564008		
Schedonurus pratensis x Lolium perenne	hybrid meadow fescue/perennial rye-grass	SK5652009b		
Triticum aestivum	bread-wheat	SK564008		
Veronica arvensis	wall speedwell	SK564008		
Myosotis arvensis	field forget-me-not	SK564008		

Recording Card

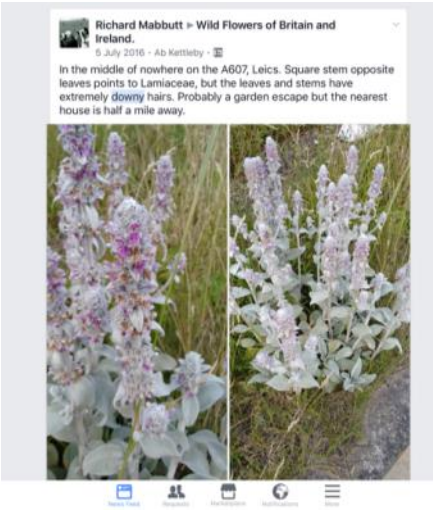


Excel Spreadsheet



	A	B	C	D	E	F	G
1	Taxon	Common name	Tetrad/OrdRef	Date	Recorder	Determiner	Status
2	Agrostis stolonifera	Creeping bent	SP69V	25/05/2017	Emeny, JM	Hall, G, email 25/05/2017	
3	Alisma lanceolatum	Water-plantain	SP69V	10/07/2017	Emeny, JM	Lansdown, Richard; email 10/07/2017	
4	Alnus cordata	Italian alder	SP69V	30/08/2017	Emeny, JM		Planted
5	Alnus glutinosa	Common alder	SP69V	30/04/2017	Emeny, JM		Planted
6	Asplenium adiantum-nigrum	Black spleenwort	SP69V	18/04/2017	Emeny, JM; Branson, A; Pepper, M		
7	Bidens tripartita	Trifid bur-marigold	SP69V	27/09/2017	Emeny, JM	Rayner, TGL; email 05/10/2017	
8	Brachypodium sylvaticum	False Brome	SP69V	18/04/2017	Emeny, JM		
9	Butomus umbellatus	Flowering rush	SP69V	10/07/2017	Emeny, JM	Hall, G, email 11/07/17	
10	Buxus sempervirens	Box	SP69V	23/01/2017	Emeny, JM		
11	Carex paniculata	Greater tussock-sedge	SP69V	10/07/2017	Emeny, JM	Hall, G, email 11/07/17	
12	Carpinus betulus	Hornbeam	SP69V	22/08/2017	Emeny, JM; Howden, I		
13	Convolvulus arvensis	Field bindweed	SP69V	22/08/2017	Emeny, JM; Branson, A; Pepper, M		
14	Deschampsia cespitosa	Tufted hair-grass	SP69V	22/08/2017	Emeny, JM; Branson, A; Pepper, M		
15	Equisetum fluviatile	Water horsetail	SP69V	22/08/2017	Emeny, JM; Howden, I		
16	Fagus sylvatica	Beach	SP69V	25/05/2017	Emeny, JM		Planted
17	Galeopsis bifida	Bifid hemp-nettle	SP69V	30/08/2017	Emeny, JM	Hall, G, email 08/07/2017	
18	Galium palustre	Marsh-bedstraw	SP69V	21/08/2017	Emeny, JM		
19	Galium verum	Lady's bedstraw	SP69V	18/05/2017	Emeny, JM; Branson, A; Pepper, M		
20	Glyceria notata	Plicate sweet grass	SP69V	25/05/2017	Emeny, JM	Hall, G, email 25/05/2017	
21	Humulus lupulus	Hop	SP69V	05/10/2017	Emeny, JM		
22	Hypochaeris radicata	Cat's-ear	SP69V	18/05/2017	Emeny, JM; Branson, A; Pepper, M		
23	Impatiens capensis	Orange balsam	SP69V	18/08/2017	Emeny, JM; Branson, A; Pepper, M		
24	Larix decidua	European Larch	SP69V	18/04/2017	Emeny, JM		
25	Lotus sp.	Bird's-foot-trefoil	SP69V	22/08/2017	Emeny, JM; Branson, A; Pepper, M		
26	Malus pumila	Apple	SP69V	18/04/2017	Emeny, JM		
27	Pinus nigra	Pine	SP69V	18/04/2017	Emeny, JM		
28	Pinus sylvestris	Scots Pine	SP69V	18/04/2017	Emeny, JM		
29	Poa trivialis	Rough meadow grass	SP69V	25/05/2017	Emeny, JM		
30	Prunus avium	Wild Cherry, Gean	SP69V	18/04/2017	Emeny, JM		
31	Prunus lusitanica	Portugal laurel	SP69V	25/01/2017	Emeny, JM		Established
32	Rumex acetosa	Common sorrel	SP69V	25/05/2017	Emeny, JM		
33	Salix x fragilis	Hybrid crack-willow	SP69V	05/10/2017	Emeny, JM	Evernham, B; email 08/10/2017	
34	Schoenoplectus lacustris	Common club-rush	SP69V	13/08/2017	Emeny, JM, Parkin, E	Hall, G, email 25/08/17	
35	Scorzoneroides autumnalis	Autumn hawkbit	SP69V	22/08/2017	Emeny, JM, Howden, I		
36	Senecio jacobaea	Common ragwort	SP69V	05/10/2017	Emeny, JM		
37	Sonchus oleraceus	Smooth sow-thistle	SP69V	18/08/2017	Emeny, JM; Pepper, M		

FaceBook



Richard Mabbutt ▸ Wild Flowers of Britain and Ireland.
5 July 2016 · Ab Kettleby ·

In the middle of nowhere on the A607, Leics. Square stem opposite leaves points to Lamiaceae, but the leaves and stems have extremely downy hairs. Probably a garden escape but the nearest house is half a mile away.

Text

TESCO 14:01
Messages Brian Details

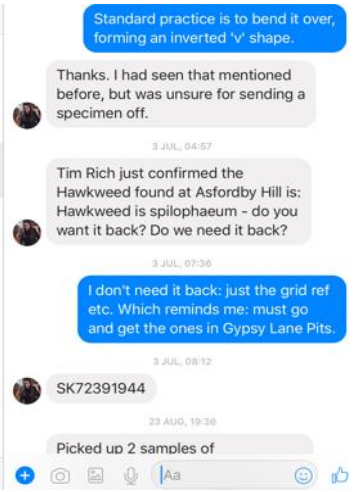
Fri 29 May 19:10

Found large population of cardamine bulbifera in woodland strip bordering car park at back of but in grounds of the gynsills at sk54847 06964 today

1 developing flower bud on small plant of common spotted orchid on lawn edge opposite cenothus in nearby border council office grounds at sk55066 06829 on the 21st may 2015

Text Message Send

Messenger



Standard practice is to bend it over, forming an inverted 'v' shape.

Thanks. I had seen that mentioned before, but was unsure for sending a specimen off.

3 JUL, 04:57

Tim Rich just confirmed the Hawkweed found at Asfordby Hill is: Hawkweed is spilophaeum - do you want it back? Do we need it back?

3 JUL, 07:36

I don't need it back: just the grid ref etc. Which reminds me: must go and get the ones in Gypsy Lane Pits.

3 JUL, 08:12

SK72391944

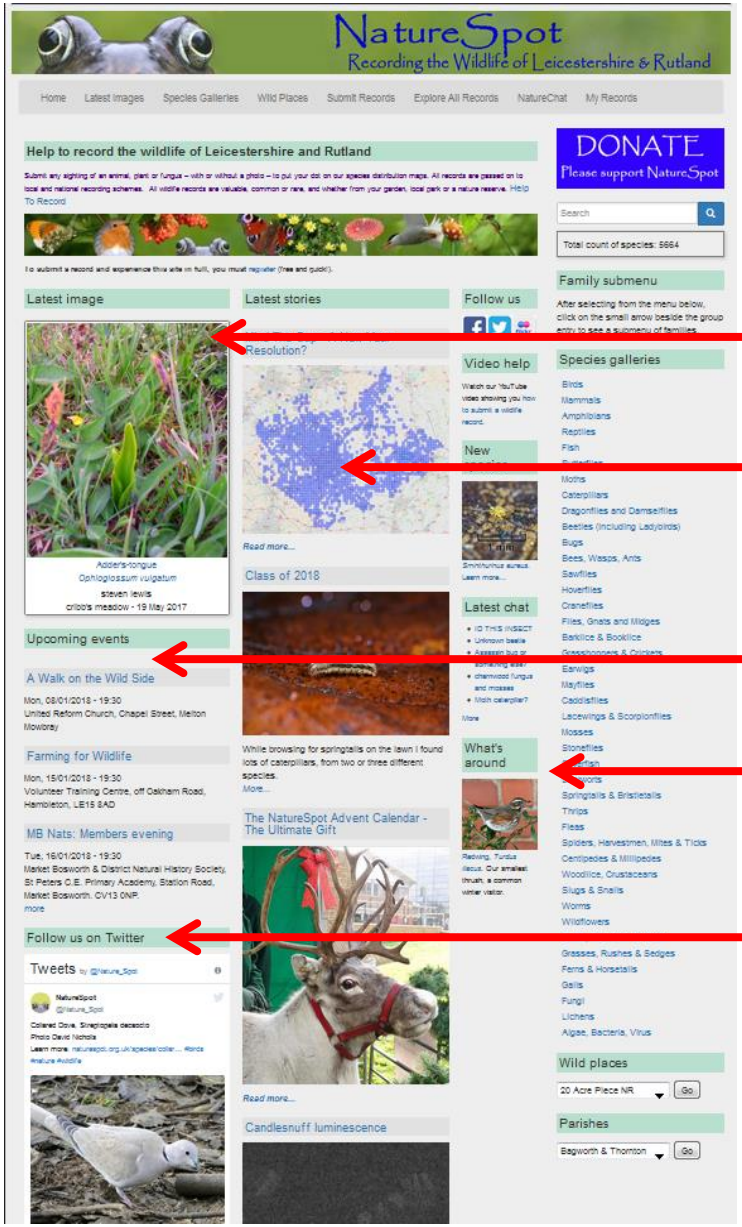
23 AUG, 19:36

Picked up 2 samples of

Aa

Principal Sources of Records

- Individual recorders
- Local recording groups
  - Leicestershire Botanical Recording Group
  - Rutland Natural History Society
- Leicestershire & Rutland Wildlife Trust
- Leics & Rutland Environmental Records Centre
- NatureSpot
- National Plant Monitoring Scheme


NatureSpot
Recording the Wildlife of Leicestershire & Rutland
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Wild Places
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NatureChat
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Help to record the wildlife of Leicestershire and Rutland
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Class of 2018
The NatureSpot Advent Calendar - The Ultimate Gift
Candlesnuff luminescence
Wild places
Parishes
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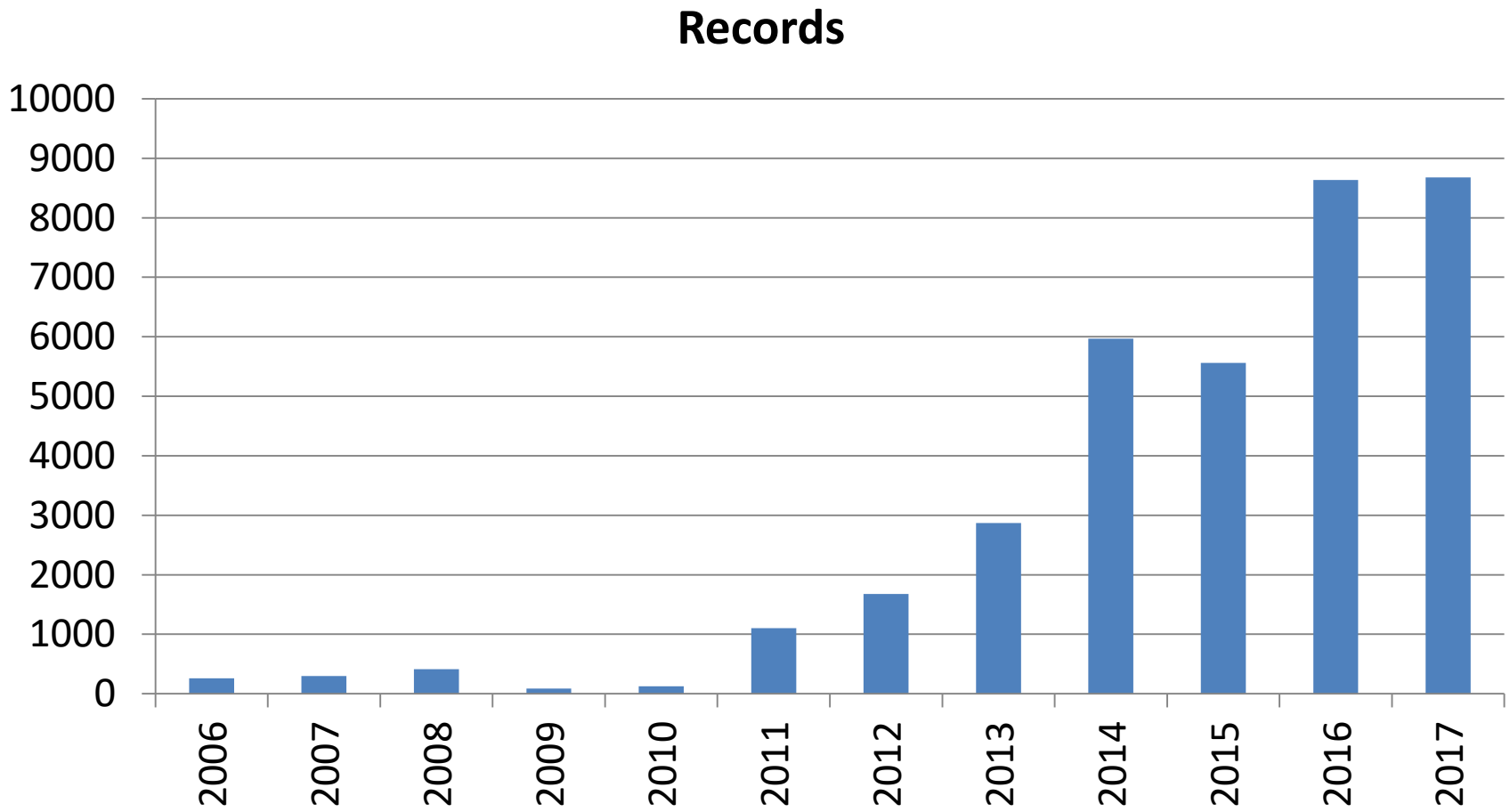
Record Numbers: Nature Spot



NatureSpot Records 2011-2017

	Total	%
Moths	39,356	22.1%
Birds	43,034	24.2%
Wildflowers	**25,817**	**14.5%**
Butterflies	8,388	4.7%
Bugs	5,936	3.3%
Beetles	7,541	4.2%
Fungi	4,578	2.6%
Bees, Wasps, Ants	4,677	2.6%
Trees, Shrubs & Climbers	**5,295**	**3.0%**
Flies, Gnats and Midges	3,533	2.0%
Hoverflies	4,321	2.4%
Spiders, Harvestmen & Mites	3,116	1.8%
Slugs & Snails	4,542	2.6%
Mammals	2,736	1.5%
Dragonflies and Damselflies	3,597	2.0%
Grasses, Rushes & Sedges	**2,680**	**1.5%**
Mosses & Liverworts	1,199	0.7%
Lichens	1,016	0.6%
Ferns & Horsetails	**823**	**0.5%**
Grasshoppers & Crickets	698	0.4%
Amphibians	658	0.4%
Woodlice, Crustaceans	506	0.3%
Sawflies	716	0.4%
Craneflies	573	0.3%
Caddisflies	728	0.4%

Vascular plants comprise **34, 618** (20%) of all records

Issues

Verification

Authentication

Duplication

Submission Process

Recorders

Certain

Likely

Maybe

Verifiers

Recorder

Verifiers

✓✓	**Correct** The verifier is able to confirm that the species has been identified correctly, usually on the basis of a photo.
✓	**Assumed correct** The verifier has not seen photo/s or specimen/s but has a high degree of confidence that the record is likely to be correct, based on difficulty of ID, date, location and recorder skills/experience etc.
?	**Plausible** The record is plausible based on species, date and location, but there is not enough supporting evidence for the possibility of misidentification to be ruled out.
✗	**Unable to verify** The verifier thinks that the record is likely not to be correct based on difficulty of ID, date, location and recorder skills/experience (and where no photo/s or specimen/s are available); or photos are available but do not show enough detail to confirm the identification; and/or the record is not sufficiently well documented to confirm.
✗✗	**Incorrect** The verifier is able to confirm that the species has not been identified correctly, or the record is erroneous in other respects, on the basis of photo/s or specimen/s, or on information from the recorder.

Biological Records Centre for iRecord

Verification & Authentication

- **Identification**
  - photographs
  - some can't be done
  - time-consuming

Common Problems

Critical Features Missing

'Ranunculus repens'

'Galium saxatile'

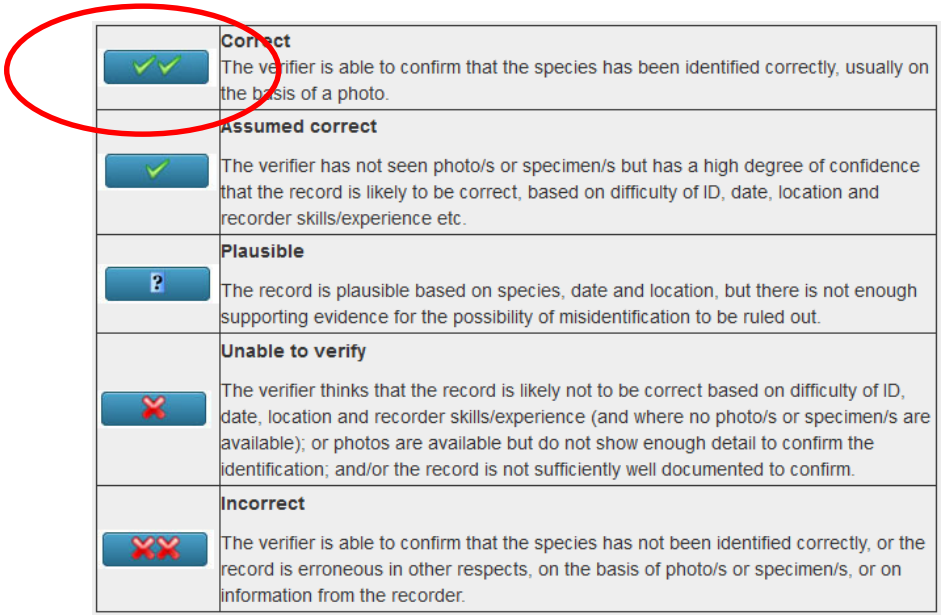
Scale Effects

'Juncus effusus'

Picture-matching

'Polypodium vulgare'

End of Year



✓✓	**Correct** The verifier is able to confirm that the species has been identified correctly, usually on the basis of a photo.
✓	**Assumed correct** The verifier has not seen photo/s or specimen/s but has a high degree of confidence that the record is likely to be correct, based on difficulty of ID, date, location and recorder skills/experience etc.
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✗✗	**Incorrect** The verifier is able to confirm that the species has not been identified correctly, or the record is erroneous in other respects, on the basis of photo/s or specimen/s, or on information from the recorder.

Selected Records

Record ID	Latin	Common	Date	Grid Ref	Location Name	RecorderName	Determiner	Abundance	Record comment
3742671	Agrimonia eupatoria	Agrimony	23/07/2016	SK812251	Stonesby Quarry	Alan Cann	Alan Cann	1	
3744363	Alchemilla mollis	Garden Lady's-mantle	23/07/2016	SK812251	Stonesby Quarry	Alan Cann	Alan Cann	1	
3744440	Anacamptis pyramidalis	Pyramidal Orchid	23/07/2016	SK812251	Stonesby Quarry	Alan Cann	Alan Cann	lots	
3742723	Campanula glomerata	Clustered Bellflower	23/07/2016	SK812251	Stonesby Quarry	Alan Cann	Alan Cann	1	
3744359	Campanula latifolia	Giant Bellflower	23/07/2016	SK812251	Stonesby Quarry	Alan Cann	Alan Cann	several	
3742728	Centaurea nigra	Common Knapweed	23/07/2016	SK812251	Stonesby Quarry	Alan Cann	Alan Cann	lots	
3742724	Centaurium erythraea	Common Centaury	23/07/2016	SK812251	Stonesby Quarry	Alan Cann	Alan Cann	lots	
3744458	Cirsium eriophorum	Woolly Thistle	23/07/2016	SK812251	Stonesby Quarry	Alan Cann	Alan Cann	lots	
3744447	Cirsium vulgare	Spear Thistle	23/07/2016	SK812251	Stonesby Quarry	Alan Cann	Alan Cann	lots	
3744456	Clinopodium vulgare	Wild Basil	23/07/2016	SK812251	Stonesby Quarry	Alan Cann	Alan Cann	several	
3752727	Convolvulus arvensis	Field Bindweed	23/07/2016	SK812251	Stonesby Quarry	Alan Cann	Alan Cann	Several	Resubmission of #3744356 accidentally submitted with the wrong image.

Record status	Verifier	Web Link
accepted	Calow, Graham	http://warehouse1.indicia.org.uk/upload/o_1aoj8p5huak11bh0o6219j7hcma.jpg
accepted	Calow, Graham	http://warehouse1.indicia.org.uk/upload/o_1aojkfapu1g1hc9dv68h3e1u9kaa.jpg
accepted	Calow, Graham	http://warehouse1.indicia.org.uk/upload/o_1aojkrb721jm61eq4oem170n18oq31.jpg
accepted	Calow, Graham	http://warehouse1.indicia.org.uk/upload/o_1aoj94jf01mfi11ic1q3v3aji952q.jpg
accepted	Calow, Graham	http://warehouse1.indicia.org.uk/upload/o_1aojkcd4qico1ctjmqkj37ej8b.jpg
accepted	Nicholls, David	http://warehouse1.indicia.org.uk/upload/o_1aoj99h7qll91oe01r38go1li95t.jpg
accepted	Calow, Graham	http://warehouse1.indicia.org.uk/upload/o_1aoj96k761vqe1gme1ebnuusf5p3m.jpg
accepted	Calow, Graham	http://warehouse1.indicia.org.uk/upload/o_1aojl6gu2fio15k8179b1r2i1qodd5.jpg
accepted	Calow, Graham	http://warehouse1.indicia.org.uk/upload/o_1aojkv11qgit1vldln22b1pes6l.jpg
accepted	Calow, Graham	http://warehouse1.indicia.org.uk/upload/o_1aojl5a1a1ok9l6lis1up518qabt.jpg
accepted	Gould, David	http://warehouse1.indicia.org.uk/upload/o_1aomkidpm22naodgg91ped10qo8.jpg
accepted	Calow, Graham	http://warehouse1.indicia.org.uk/upload/o_1aojkuh7h1p3450lop31mre4b5v.jpg

Verification & Authentication

- **Identification**
  - photographs
  - some can't be done
  - time-consuming
- **Recorder reliability**
  - 133 botanical recorders, but only **33 (24.8%)** known
  - skill level? variable
  - **reliability? unknown**

Verification & Authentication

- **Identification**
  - photographs
  - some can’t be done
  - time-consuming
- **Reliability**
  - 133 botanical recorders, but only **33 (24.8%)** known
  - skill level? variable
  - reliability? unknown
- **Site names**
  - very variable
  - need to be consistent
  - much editing

Site Name Examples

GUC (Lboro south to Bridge 32)

Fishpond Plantation

Whetstone Fields

Langham Field

Scalford Golf Course

Martinshaw Wood

nr Ratby Meadow, Enderbyn

Blaby Cemetary

Verification & Authentication

- **Identification**
  - photographs
  - some can't be done
  - time-consuming
- **Reliability**
  - 133 botanical recorders, but only **33 (24.8%)** known
  - skill level? variable
  - reliability? unknown
- **Site names**
  - very variable
  - need to be consistent
  - much editing
- **Grid references**
  - need to reflect the site or route travelled

Grid References

- In 2016 each record was given a 6 fig Grid Reference
- Grid Reference didn't correlate with site name

SK818359	Grantham Canal (Easthorpe to Muston bridges)	>1 tetrad
SK751318	Grantham Canal (Harby to Stathern Bridge)	>1 tetrad
SK736306	Grantham Canal (Hose to Harby)	>1 tetrad
SK726295	Grantham Canal (Hose to Long Clawson Bridge	SK72J
SK726295	Grantham Canal (Hose to Long Clawson Bridge)	SK72J
SK723296	Grantham Canal (Hose to Long Clawson Bridge)	SK72J
SK733301	Grantham Canal (Hose)	SK733301
SK717297	Grantham Canal (Long Clawson Br to County Boundary	SK7129
SK717297	Grantham Canal (Long Clawson Br to County Boundary)	SK7129
SK726295	Grantham Canal (Long Clawson to Hose)	SK72J
SK717297	Grantham Canal (Long Clawson W to County Boundary)	SK7129

For 1 recorder:

40% locations were in >1 tetrad

46% needed reduced precision

59% records usable

Verification & Authentication

- **Identification**
  - photographs
  - some can't be done
  - time-consuming
- **Reliability**
  - 133 botanical recorders, but only **33 (24.8%)** known
  - skill level? variable
  - reliability? unknown
- **Site names**
  - very variable
  - need to be consistent
  - much editing
- **Grid references**
  - need to reflect the site or route travelled
- **Comments**
  - often contain useful data

Comments

"Patch in flower on bank"
"White Variation (var. alba)"
"checked seeds"

Stage

"Part of a planting scheme some years ago - naturalised."
"Seemed to appear in pots top-dressed with pelleted chicken manure."
"Growing in soil used to infill flower bed on top of low wall"

Status

"Locally frequent in rough grassland"
"Cluster of 6 plants on grassland close to lake"
"500+ spikes on horse track"
"3 patches in flower"

Frequency

Comments

"Wileman's Pond at eastern end"
"Found by TC, on verge of slip road. A solitary specimen."

Location

"involucre narrows to stalk"
"6 stamens"

Identification

"Found on Marl Field (wet, acid), confirmed by UH; lower leaves opposite; with pink flower variation"

Multiple

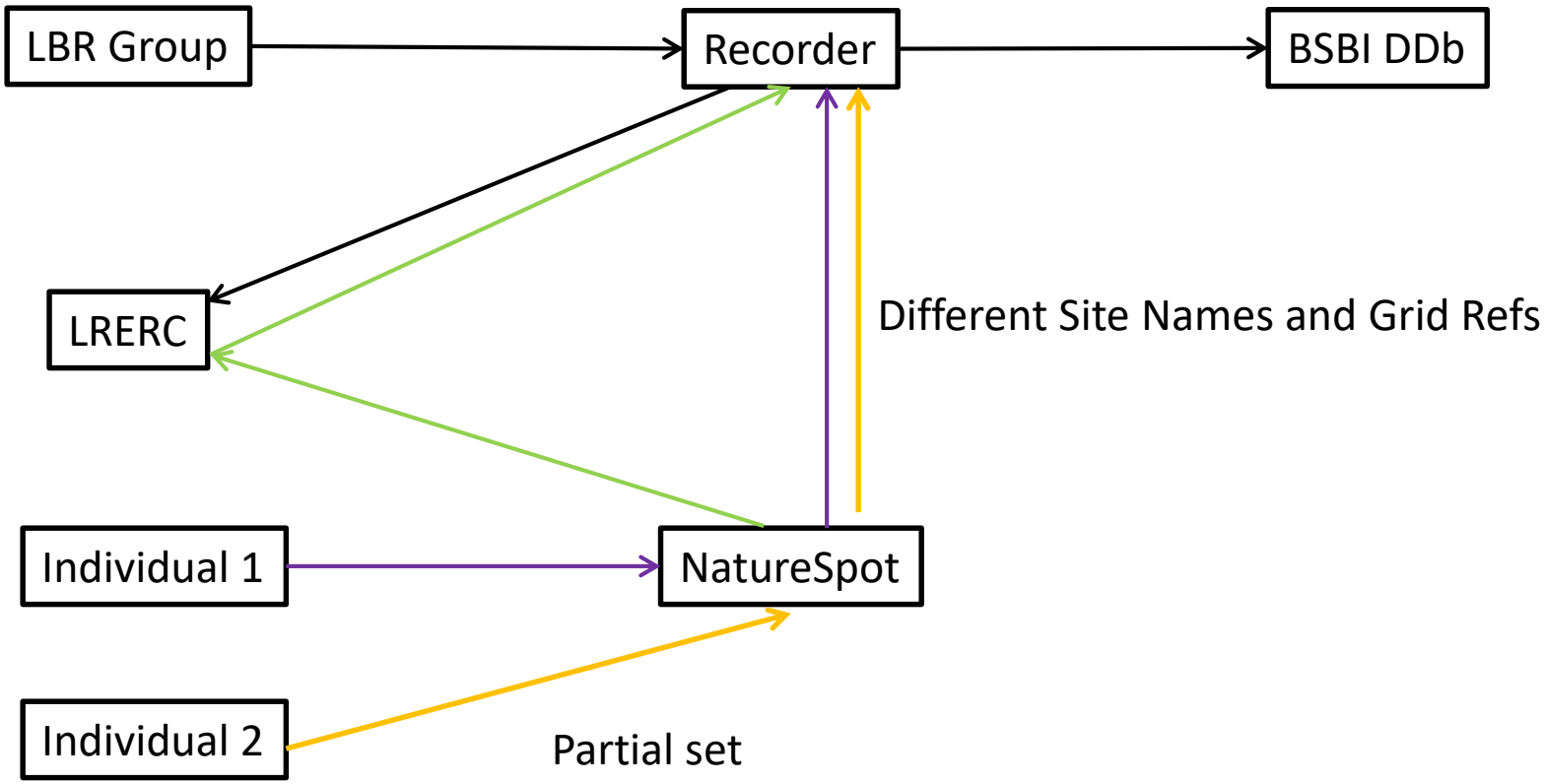
"A real problem"
"A big maybe"

Who knows?

Duplication

- A unique record has a distinct:
  - Taxon name
  - Date
  - Location
  - Recorder(s)

One Day's Records

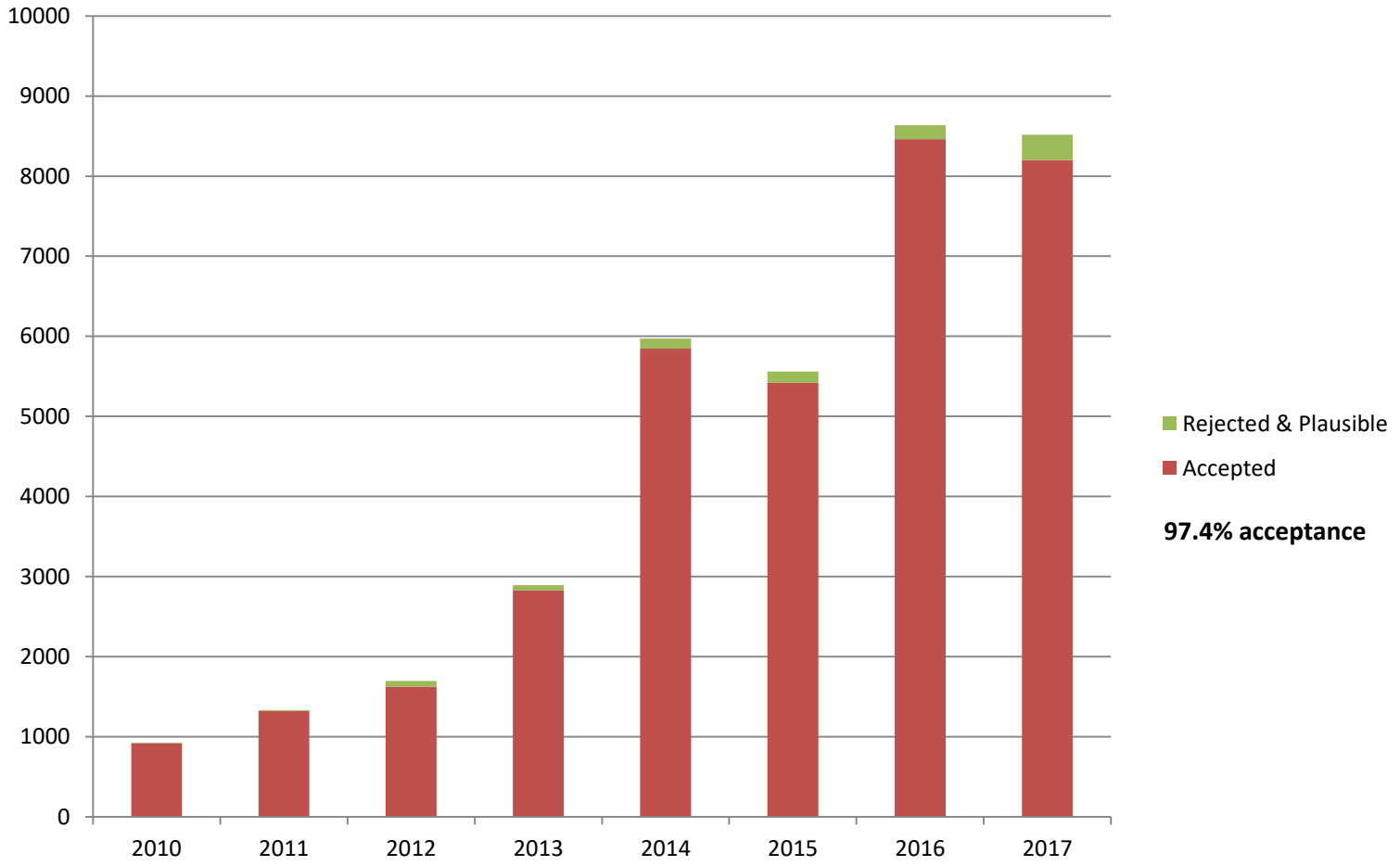


Procedure for Preparing NatureSpot Records for MapMate

1. Remove records from other vice-counties.
2. Remove all records from DN made on LBRG meetings. Some records may have a different location to the LRBG one.
3. Remove duplicates. Sort records by recorder name and date, then check against MapMate database.
4. For well-recorded sites, only add records of new taxa, e.g., Bradgate Park, most LRWT reserves (especially Charnwood Lodge, Ketton Quarry, Holwell Reserves, Ulverscroft, Merry's Meadows), County Hall, Ratby, Sapcote. Check against lists of taxa in BSBI DDb.
5. Check grid refs match sites.
6. From their location description, some records made during transects or walks cover 1 or more monads, but have been given a 6 fig grid ref. If it is possible to trace the route on a map, these records can be added at monad or tetrad level. If a recorded location covers up to 90% of a monad or tetrad, then add it.
7. Remove records from dubious locations e.g., Harrisdale Gardens, planted boxes at Rutland Water etc.
8. Check identifications against photos. It would take too long to check all records, so check rare and scarce species, confusion species and difficult taxa (e.g., horsetails, rushes, some grasses). Some other examples of care needed are:
9. All Polypodium records will need to be changed to P. vulgare sens. lat. without supporting sporangial characters.
10. Many Malus sylvestris records will need to be changed to M. sylvestris sens. lat.
11. Symphytum officinale is regularly misidentified for S. x uplandicum, Hyacinthoides hispanica for H. x massartiana, Veronica montana for V. persica.
12. Records that cannot be identified from photos will need to be sent back to Graham who will send more photos or recommend deletion.

Complicated

NatureSpot Reject Rate



Recorder Choices

Ignore everything

- lose valuable records
- ‘elitist’?

Be selective

- rare or unusual species
- only known recorders’ records

Include everything

- time cost
- dedication

Solutions

Enlist help

- Deputy recorders
- Volunteers

Vigilance

Communicate with project owners

Technology

- duplicate checking routines?
- improve design of entry forms?

Insights

Recorder Behaviour

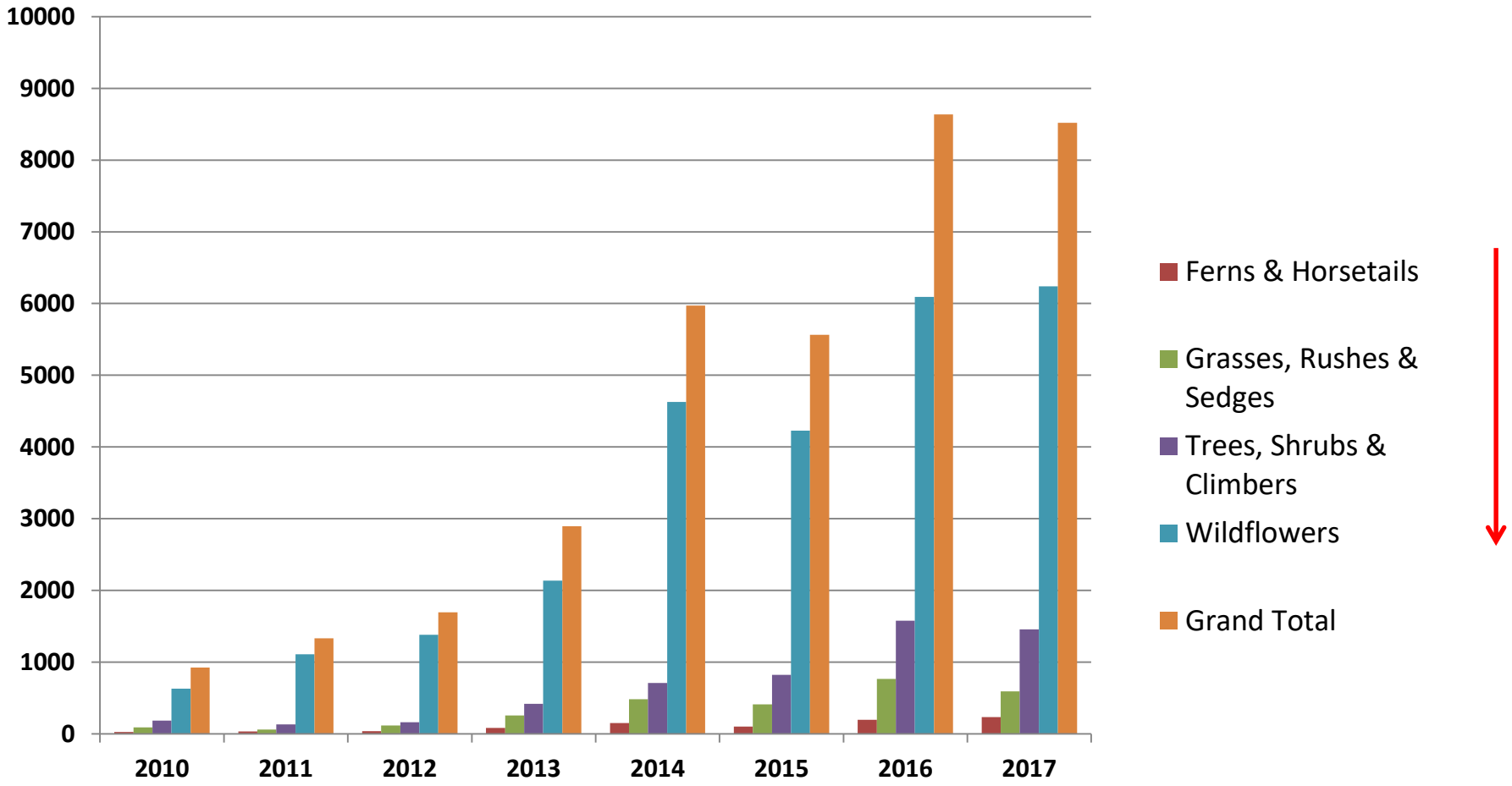
Constancy

Recorder Profile

Recorder Behaviour

- What people do/**don't** record
  - skill level; informs training courses
- Where people do/**don't** record
  - target areas for surveys
- When people do/**don't** record
  - target timing of surveys

What people do/**don't** record



Excludes apomicts

Where people **do** record

LRWT
Nature
Reserves
18%

Canals &
Rivers 4%

Sapcote, Ratby,
Broughton
Astley 15%

"Local Patch"

Country Parks
8%

Charnwood &
NW of county

Where people **don't** record

Farmland

Rutland Water 1.5%

Urban & Suburban

Roads

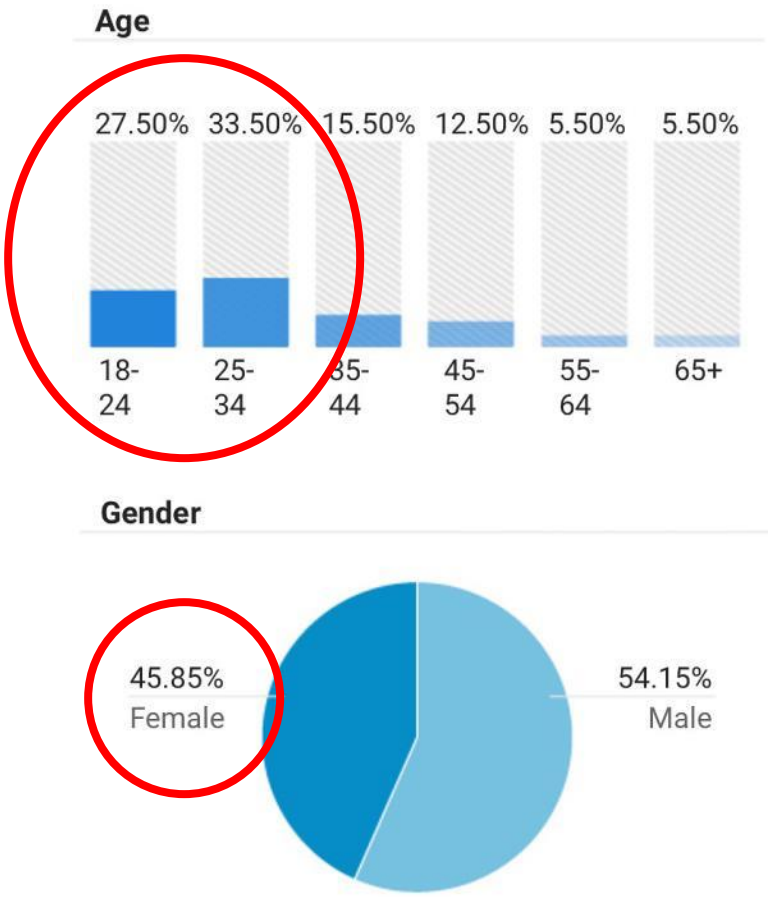
Eastern Central, SE, NE of county

Constancy

- Some people record the same species in the same site every year
  - no population sizes, except for orchids
- Constancy of species at a site
  - Useful to me?
  - Useful to the BSBI?

Age and Gender Profiles

61%



All recorded groups

Is it worth it?

Advantages

- **Lots of records**
- **Unusual finds**
- **Confidence level**
- **Target recording**
- Public engagement
- Reduce electronic messaging overload

Disadvantages

- **Time-consuming**
- **Authentication**
- **Verification**
- **Duplication**
- Repetition of habitat records

Outcomes

- **Further analysis** of NatureSpot dataset
  - Recording behaviour
  - Project design

- **Improve system**
  - Design of Citizen Science web forms