

Citizen Science

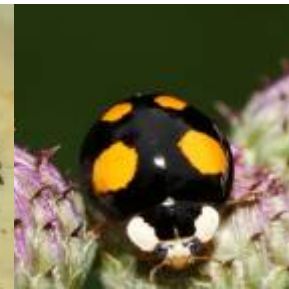
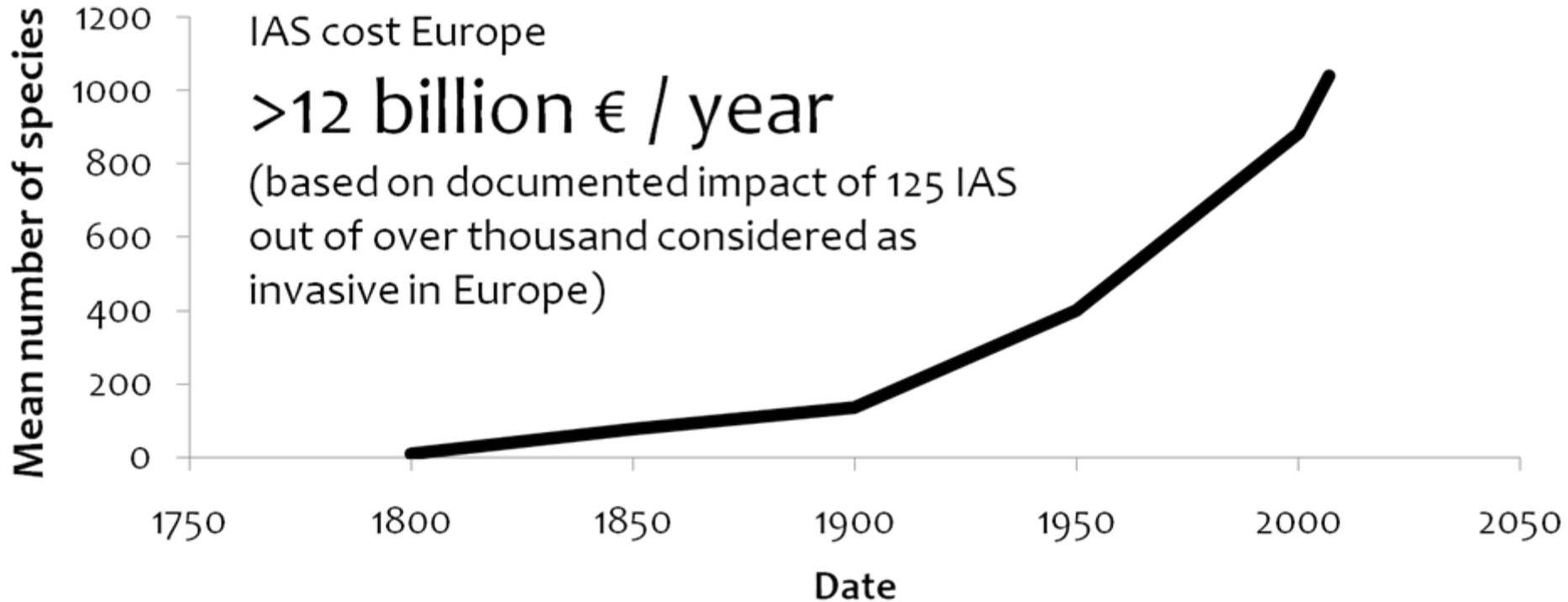
Recording Invasive Species Counts

Helen Roy



Invasive Alien Species in Europe

The problem: rate of invasion of alien species is increasing, and so are the associated costs to society, the economy and biological diversity



CBD hierarchical approach to IAS

Prevention

Early detection and rapid eradication

Long-term control and containment

Importance of surveillance for early detection

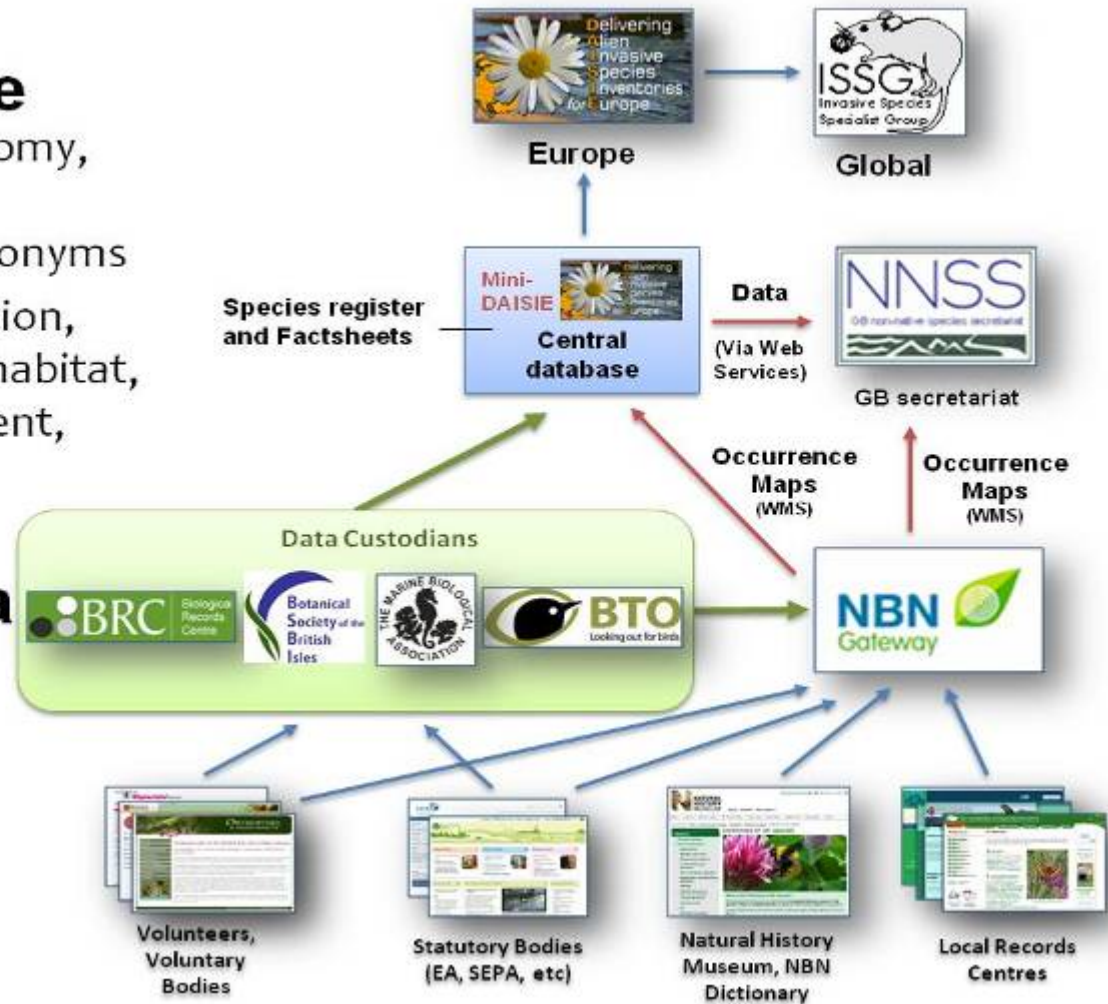
GB Non-Native Species Information Portal

Central Database

- **Species register** – taxonomy, dates and pathways of introduction, habitat, synonyms
- **297 factsheets** – description, photo, biology, ecology, habitat, range, impact, management, bibliography

Occurrence data

- NBN Gateway



**About 2000 established
alien species in GB**



Tracking the harlequin ladybird



[UK Ladybirds](#)

[BBC Breathing Places](#)

[Harlequin Invasion](#)

[Recording](#)

[Research](#)

[Children's pages](#)

[Ladybird gallery](#)

[Further information](#)

Welcome to the UK Ladybird Survey website

The Ladybird Survey aims to facilitate the recording of all the UK's ladybirds.

On this website you will find lots of information to help you find and identify species, and online forms so that you can record your observations.

Ladybirds belong to the scientific family Coccinellidae. In Britain, some 46 species belong to this family, although only 26 of these are recognisably ladybirds.

The invasion of the harlequin ladybird (*Harmonia axyridis*) threatens our native populations. If you want to know more about this species in particular, or want to record sightings, please have a look at the [Harlequin Ladybird Survey](#) website.

Use the links in the menus at the sides of this page to find out more about ladybirds, and what you can do to help.



7-spot ladybird (photo: William Purvis)



New Ladybird Atlas Published

A stunning, 200-page, full-colour book, authoritatively written by the ladybird survey organisers.

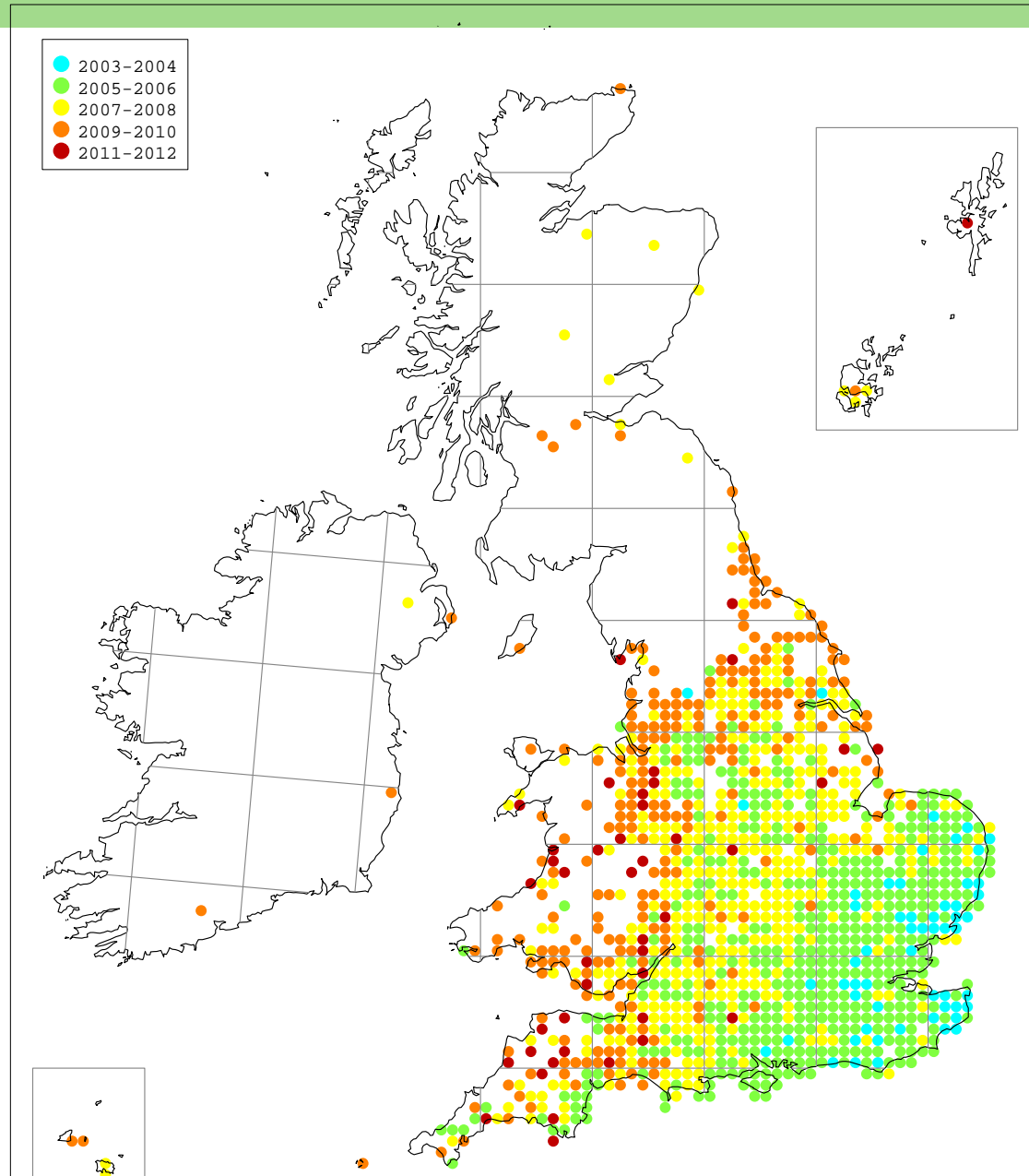
The acknowledgements begin, "First and foremost we would like to thank the thousands of people who have contributed ladybird records to the Coccinellidae Recording Scheme, Harlequin Ladybird Survey, UK Ladybird Survey and Ladybirds of Ireland project."

Available from various outlets including [CEH](#), [FSC](#), and good bookshops. (Download [errata](#))

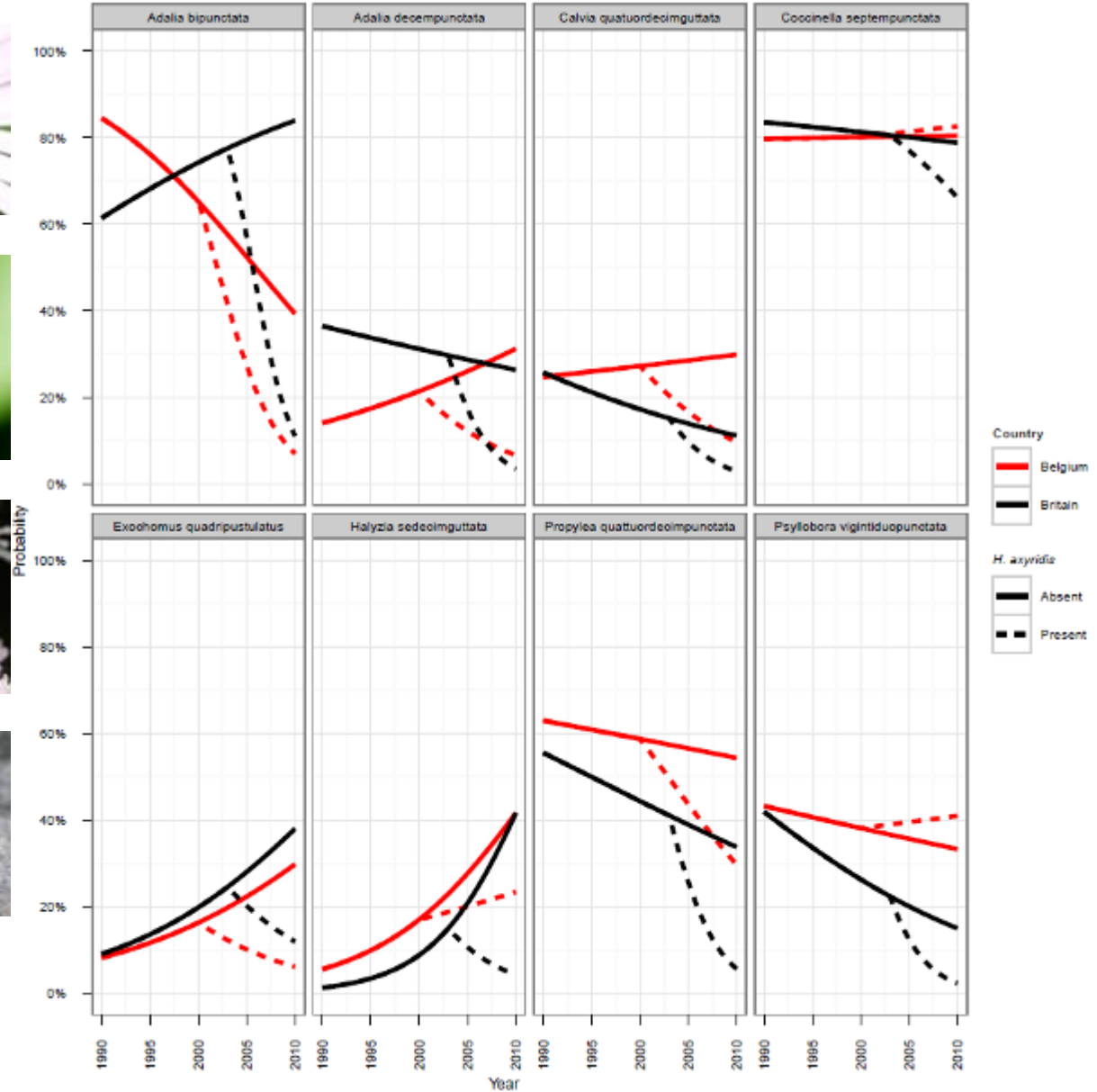


...more than 50 000 records
received by the UK Ladybird
Survey

Spread of the Harlequin ladybird



Large-scale impacts



Recording Invasive Species Counts

Harlequin Survey



RISC
6 species



RISC + ALERT
21 species

NNSS
GB non-native species secretariat

Department for Environment Food & Rural Affairs | The Scottish Government | Welsh Government

Home: GB Co-ordination | News & events | Species alerts | **Species Information** | Biodiversity & prevention | Training | Projects | Local Action Group pages | Legislation & Regulation | Publications & useful links

Home > Species Information > Recording

In this section

Recording
» Links

Quick links

- Non native species information portal
- Gallery
- ID sheets
- Action plans
- Risk analysis
- Species alerts

Recording

RISC
RECORDING INVASIVE SPECIES COUNTS

The Recording Invasive Species Counts (RISC) project is a way to find out more and to contribute to our understanding of the distribution and ecology of non-native species. It is co-ordinated by the NBN and BRC (part of the Centre for Ecology & Hydrology), in partnership with recording schemes for the animals and plants. The project is funded by Defra.

We hope you will get involved by sending in your records of the following species.

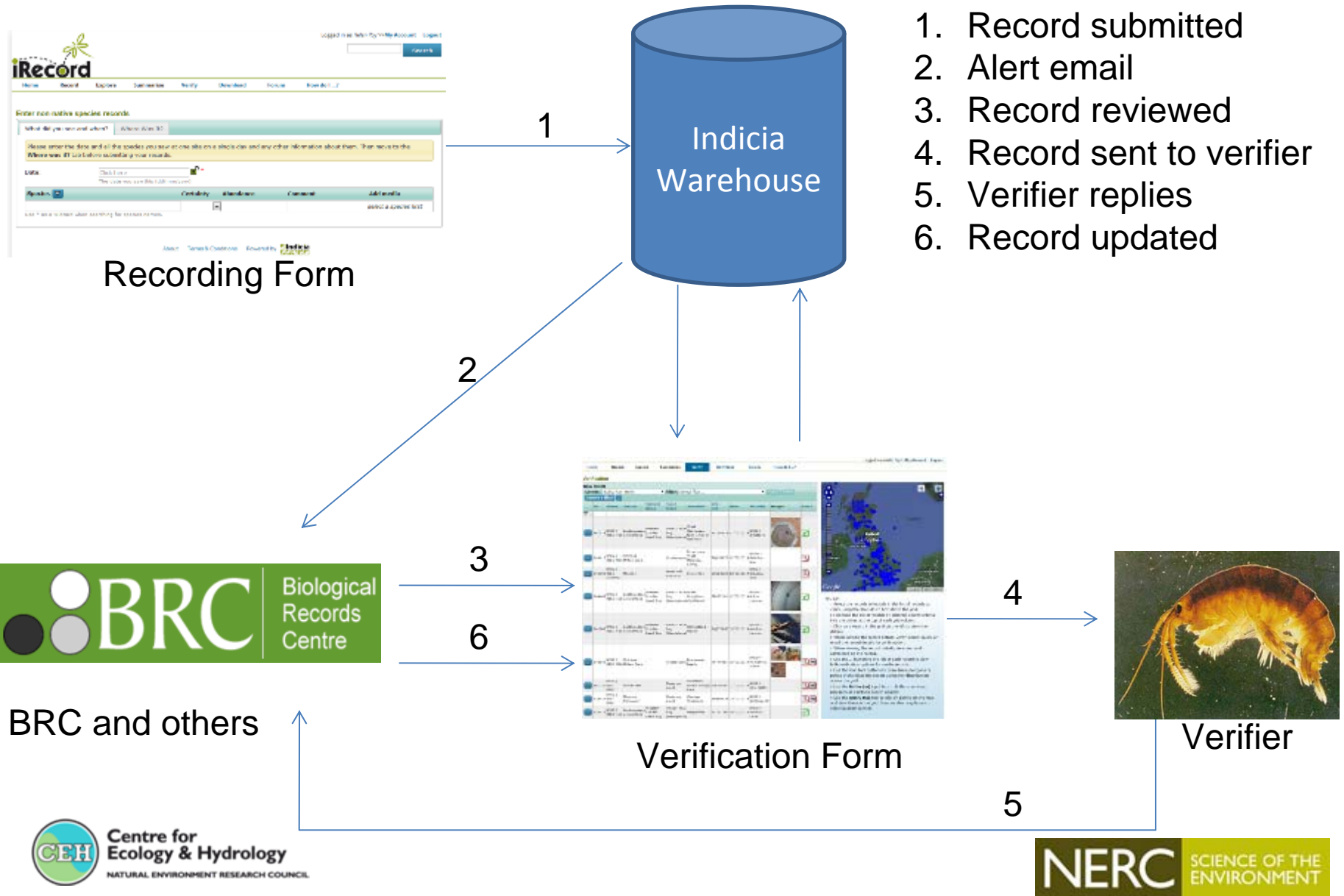
Animals:

- American bullfrog
- Asian Hornet
- Carpet Sea-squid
- Chinese Mitten crab
- Citrus longhorn beetle
- Killer Shrimp
- Muntjac deer
- Quagga Mussel
- Rhododendron leaf-minner
- Snow crab
- Southern green shieldbug
- Western conifer seedbug
- Zebra mussel

Plants:

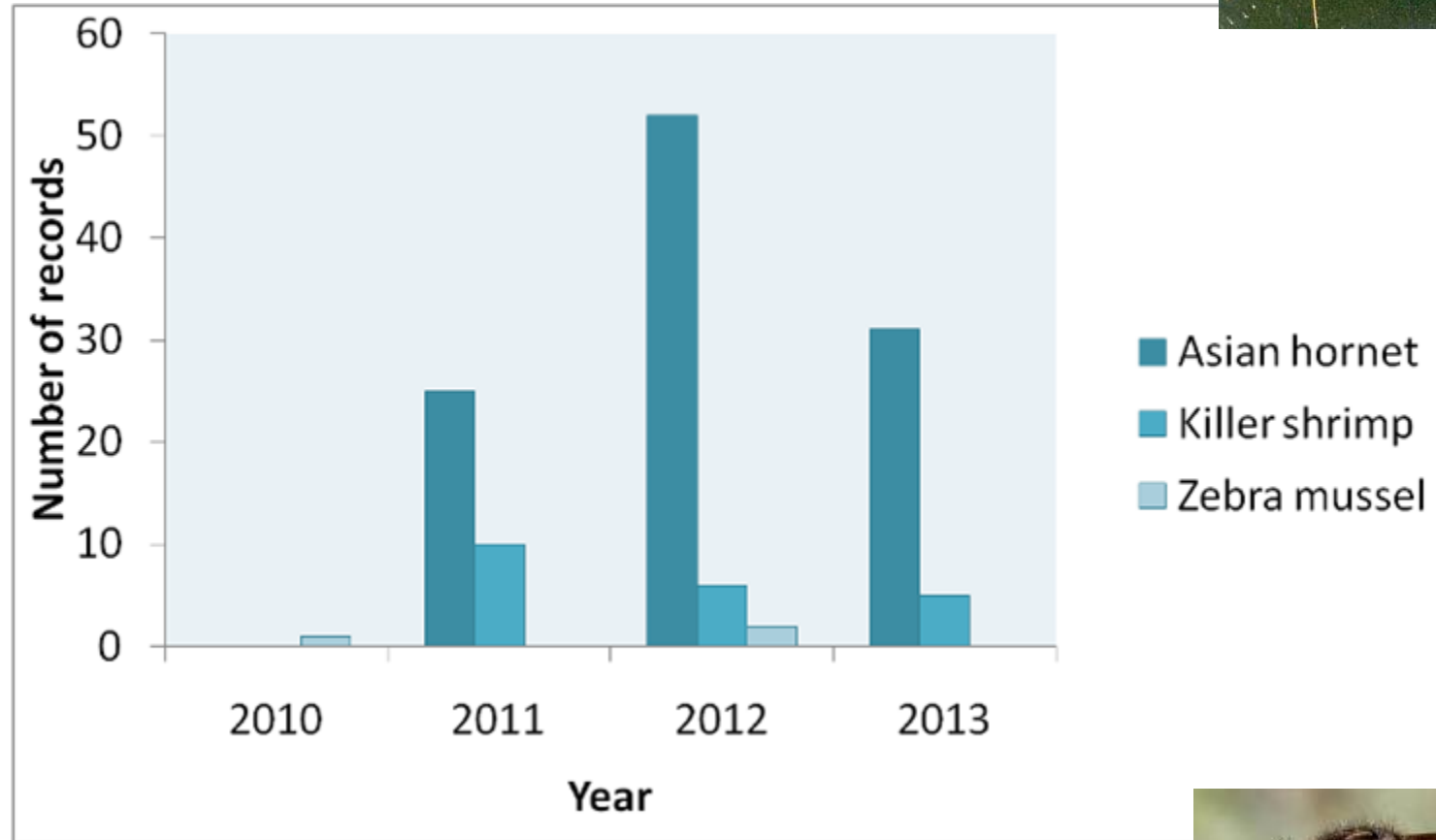
- American stink-cabbage
- Flooding pennycuik
- Himalayan balsam
- Rhodesodendron
- Tree of heaven
- Wakame
- Water fern
- Water primrose

RISC extended to ALERT



ALERT E-mail


Alert_nonnative@ceh.ac.uk



Recording Invasive Species Counts

Here is a summary of records received through the project Recording Invasive Species Counts. For more information: <http://www.nonnativespecies.org/recording>

If you have just submitted records, please note that it can take a few minutes for your records to appear on the reports.

To see records associated with a specific dot on the map - Select the  icon, click on the dot and then select the "Records" tab to see the filtered records.

Map Records Summary

Taxon	Absence records	Presence records	Verified records	Awaiting verification
Muntjac	0	686	669	0
Leptoglossus occidentalis	0	396	365	13
Chinese Mitten Crab	0	198	188	1
Skunk Cabbage	0	158	81	0
Himalayan Balsam	0	70	19	1
Nezara viridula	0	58	16	0
Signal Crayfish	0	36	14	0
Graphocephala fennahi	0	33	30	0
Tree of Heaven	0	21	4	0
Floating Pennywort	0	21	4	0
Wakame	0	17	17	0
Water Fern	0	14	1	0
Oak Processionary Moth	0	9	1	0
Zebra Mussel	0	9	7	2
Rhododendron	0	8	2	0
American Bullfrog	0	6	0	2
Monk Parakeet	0	6	2	0
Killer Shrimp	0	6	0	2
Water Primrose	0	3	1	0
Asian Hornet	0	2	0	0


RISC records

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Rhododendron	0	8	2	0
American Bullfrog	0	6	0	2
Monk Parakeet	0	6	2	0
Killer Shrimp	0	6	0	2
Water Primrose	0	3	1	0
Asian Hornet	0	2	0	0

Non-Native Species ALERT

Here is summary of records received for non-native species which are part of the GB rapid response protocol. For more information: <http://www.nonnativespecies.org/alerts/index.cfm>

If you have just submitted records, please note that it can take a few minutes for your records to appear on the reports.

To see records associated with a specific dot on the map - select the  icon & click on the dot and then select the "Records" tab to see the filtered records.

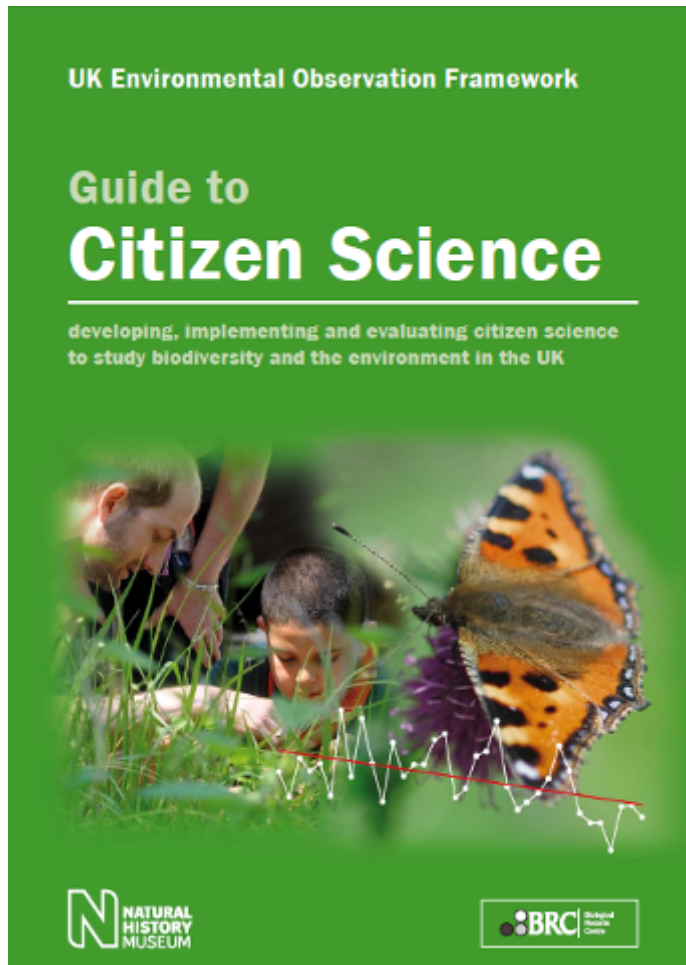
Map **Records** Summary

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Killer Shrimp	0	6	0	2
Monk Parakeet	0	6	2	0
Asian Hornet	0	2	0	0
Carpet Sea-squirt	0	2	0	0
Sacred Ibis	0	2	2	0
Indian House Crow	0	1	0	0
Topmouth Gudgeon	0	1	0	0
Prairie Dog	0	1	1	0

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Citizen science perspectives



Define project aims

Invasive non-native species are considered to be one of the greatest threats to biodiversity and also impact on the economy and society.

Over the last century there has been a dramatic increase in the movement of non-native species around the world. The total for Britain is estimated to be in excess of 2500 established species. Some of these non-native species create serious problems hence the term "invasive non-native species".

What can you do?

The RISC (Recording Invasive Species Counts) project has been developed to increase participation in recording invasive non-native species and to encourage greater understanding of them. It is contributing to our understanding of the distribution and ecology of a number of invasive non-native species.

Record your sightings and upload your photos at www.nonnativespecies.org/record

RISC is co-ordinated by the National Biodiversity Network and Biological Records Centre (part of the Centre for Ecology & Hydrology), in partnership with recording schemes for the invasive animals and plants. The project is funded by Defra




What are invasive non-native species?

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- 1 Western conifer seed bug *Leptoglossus occidentalis*
- 2 Rhododendron leafhopper *Graphocephala fennahi*
- 3 Water primrose *Ludwigia grandiflora*
- 4 Muntjac deer *Muntiacus reevesi*
- 5 American skunk cabbage *Lysichiton americanus*
- 6 Chinese mitten crab *Eriocheir sinensis*
- 7 Zebra mussel *Dreissena polymorpha*
- 8 American bullfrog *Lithobates catesbeianus*
- 9 Water fern *Azolla filiculoides*
- 10 Floating pennywort *Hydrocotyle ranunculoides*
- 11 Citrus longhorn beetle *Anoploglyphus chinensis*
- 12 Tree of heaven *Ailanthus altissima*
- 13 Southern green shieldbug *Nezara viridula*
- 14 Wakame *Undaria pinnatifida*

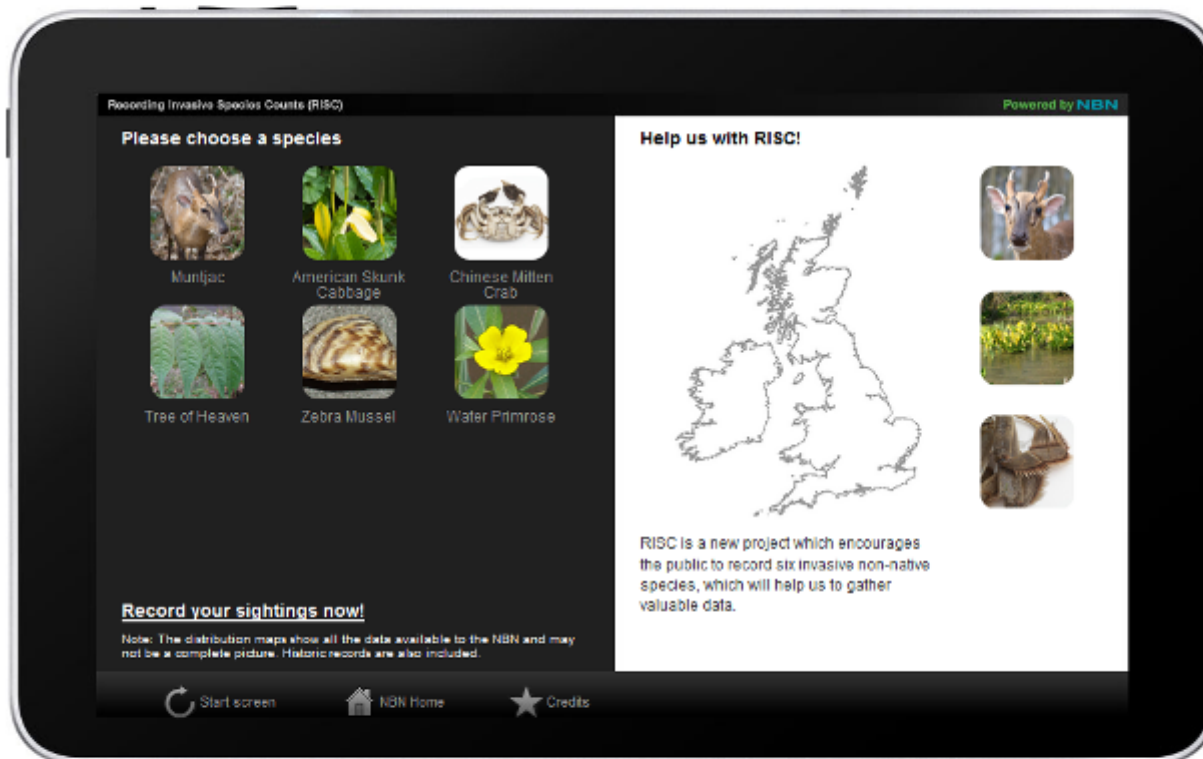


Identify and understand target participants



Design the scheme

RISC



Recording Invasive Species Counts (RISC) Powered by NBN

Please choose a species

- Muntjac
- American Skunk Cabbage
- Chinese Millen Crab
- Tree of Heaven
- Zebra Mussel
- Water Primrose

Record your sightings now!

Note: The distribution maps show all the data available to the NBN and may not be a complete picture. Historic records are also included.

Help us with RISC!

RISC is a new project which encourages the public to record six invasive non-native species, which will help us to gather valuable data.

Start screen NBN Home Credits

Help us with RISC!

A new project to involve the public in recording six invasive non-native species has recently launched. The aim of the project is to raise awareness of non-natives and to help us to gather valuable data.

Recording Invasive Species Counts (RISC) is funded by Defra and is being run by the NBN, the Centre for Ecology and Hydrology, Anglia Ruskin University and the GB Non-native Species Secretariat.

Promote and publicise



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Ecology & Hydrology

NATURAL ENVIRONMENT RESEARCH COUNCIL

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DATA HOLDINGS

PRODUCTS

You are here: [CEH Web](#) | [News](#) | [Press Office](#) | [2010 Archive](#) | [Recording Invasive Species Counts](#)

About Us

Press release 2010/04

Working for CEH

Issued by the Centre for Ecology & Hydrology

Working with Others

Strictly embargoed until 00:01am GMT 22nd March 2010

Publications

Scientists call on the public to help monitor invasive species

Library Services

Recording Invasive Species Counts (RISC), launched today in London (22 March 2010), will encourage members of the public to record sightings of six invasive non-native plants and animals within the UK.

Contact Us

Data collected by RISC will help scientists both understand the distribution and ecology of six non-native species, and investigate their impacts on wildlife in the UK. The selected species are Muntjac Deer, Chinese Mitten Crab, Zebra Mussel, Tree of Heaven, American Skunk Cabbage and Creeping Water Primrose.

Welcoming the project Wildlife Minister Huw Irranca-Davies said, "Non-native species that become invasive are one of the greatest threats to wildlife worldwide. They are estimated to cost the British economy at least £3billion a year, and their impacts can be far reaching – they have adverse impacts on our native wildlife by predation, competition and spread of disease. They can threaten economic interests such as agriculture, forestry, fisheries and development."



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NATURAL ENVIRONMENT RESEARCH COUNCIL

NERC

SCIENCE OF THE
ENVIRONMENT

Provide feedback

CASES OF MISTAKEN IDENTITY

The Asian Hornet

Gay Marris (National Bee Unit) and Helen Roy (NERC Centre for Ecology & Hydrology)

With the threat of the invasive Asian hornet (*Vespa velutina*; AH) arriving in the UK from continental Europe, the National Bee Unit (NBU) has been working with colleagues in the Non-Native Species Secretariat (NNS), the Centre for Ecology & Hydrology (CEH) and Bee Health Policy (BHP) to raise awareness of this potentially damaging predator of honey bees and other pollinating insects (<https://secure.fera.defra.gov.uk/beebase/index.cfm?pageid=200>).

We have been urging all members of the public (beekeepers or otherwise) to report suspect sightings to the GB Non-Native Species Information Portal (GB-NNSIP), led by CEH and hosted by NNS, alert e-mail system (alert_nonnative@ceh.ac.uk) and are encouraging the use of hanging traps to monitor for arrival.

When reporting suspect sightings the public are asked to provide as much detail as they can about the insect they have seen/ found and, whenever possible, supply digital photographs – these are a very useful aid to identification. Sightings and alert e-mails are picked up by Dr Helen Roy, principal scientist at the CEH



The European hornet, *Vespa crabro*

and, if necessary, referred to the NBU for confirmatory diagnosis.

People from across the country have been very concerned by the threat posed by *V. velutina* and have responded diligently to the request for information and we have received almost 80 suspect reports. Thankfully, to date, all of these have proved to be other types of insect, but each report is taken seriously.

We work together, not just to rule out that any given specimen is *V. velutina*, but also to establish its true identity. We forward the information to experts (coordinators of national recording schemes or societies hosted by the Biological Records Centre, www.brc.ac.uk) who compile records of the particular species and so the information is extremely valuable in many regards.

This article provides a brief overview of some of those species which comprise cases of mistaken identity reported since 2011.

The European Hornet (*Vespa crabro*)

This is the number one case of mistaken identity. There are probably two reasons for this: firstly, it is the only native hornet species and, superficially, bears some resemblance to *V. velutina*; secondly, given the fearsome reputation of the Asian hornet, there may be a perception that it must be a large hornet and the queens of *V. crabro* are, indeed, impressive. However, in spite of the impact of Asian hornets on other insects and the very painful stings they may inflict on people, they are smaller and less physically impressive than their European counterpart.

Key differences between the European hornet and Asian hornet are that the latter is smaller, has characteristic yellow legs, a dark velvety thorax and a dark abdomen with a distinctive yellow band on the fourth segment. Asian Hornets are never active at night whereas European Hornets may be. Their lifecycle is similar to that of the Asian hornet (and other social wasps):

- mated queens emerge in early spring and form embryo nests
- large nests are rapidly established and worker hornets attend to the needs of the growing colony
- workers are extremely active and predate a variety of insects to obtain the protein-rich diet that the developing hornet brood requires
- mature hornet nests are hard to spot, but are most likely to be seen from early summer
- social stages emerge later and result in the production of mated queens
- as the colony dies (in late autumn), these foundresses, which use high energy sugar-rich food sources such as fruits and nectar, seek out suitable sites in which to overwinter
- foundresses emerge the following spring to begin the cycle again.



Keep your eyes open for the Asian hornet.

To help, we have details of some of its lookalikes

Analyse, interpret and respond

CHECK

Check your equipment and clothing for live plants and animals - particularly in areas that are damp or hard to inspect.

CLEAN

Clean and wash all equipment, footwear and clothing thoroughly.

If you do come across any plants or animals, leave them at the water body where you found them.

DRY

Dry all equipment and clothing - some species can live for many days in moist conditions.

Make sure you don't transfer water elsewhere.

Share data



Logged in as Helen Roy >> My Account Logout

- Home
- Record
- Explore
- Summarise
- Verify
- Download
- Forum
- How do I...?

Welcome back Helen.

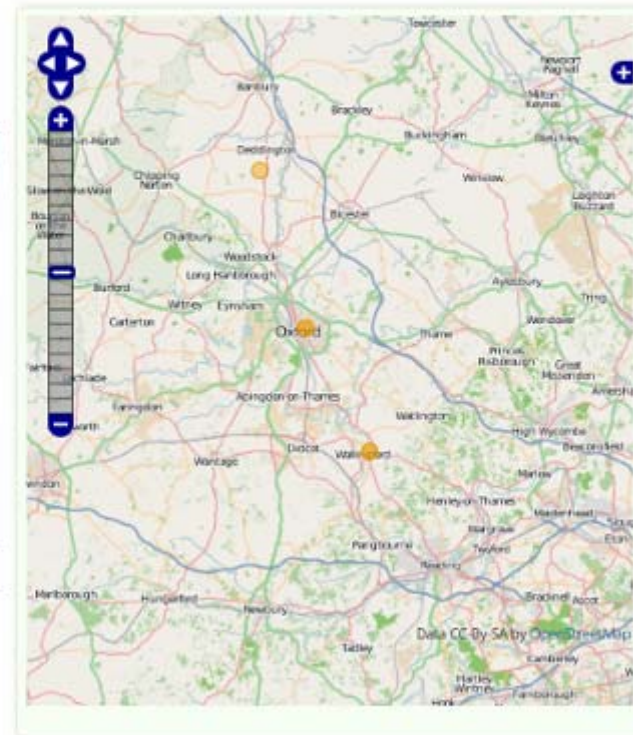
Recent sightings

The following list of records includes verified records and those awaiting verification of species groups you are interested in which have been recently added in your area.

Species	Site name	Grid Ref	Date	Recorder
<i>Athous (Orthothous) bicolor</i> ✓	Oxford	SP5206	23/06/2012	Comont, Richard
<i>Anthrenus (Nathrenus) verbasci</i> Varied Carpet Beetle ✓	Oxford	SP5206	23/06/2012	Comont, Richard
<i>Harmonia axyridis forma succinea</i> Harlequin Ladybird ✓	Ashwood House, Crowmarsh Gifford	SU61708928	16/01/2013	Roy, David
<i>Harmonia axyridis</i> Harlequin Ladybird ✓		SU61708928	02/12/2012	Roy, Helen
<i>Propylea quatuordecimpunctata</i> 14-Spot Ladybird ✓	Duns Tew	SP458284	12/05/2012	Iles, Christopher

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Showing records 76 to 80 of 220



Recently added photos



Rhagonycha fulva | Common Red Soldier Beetle

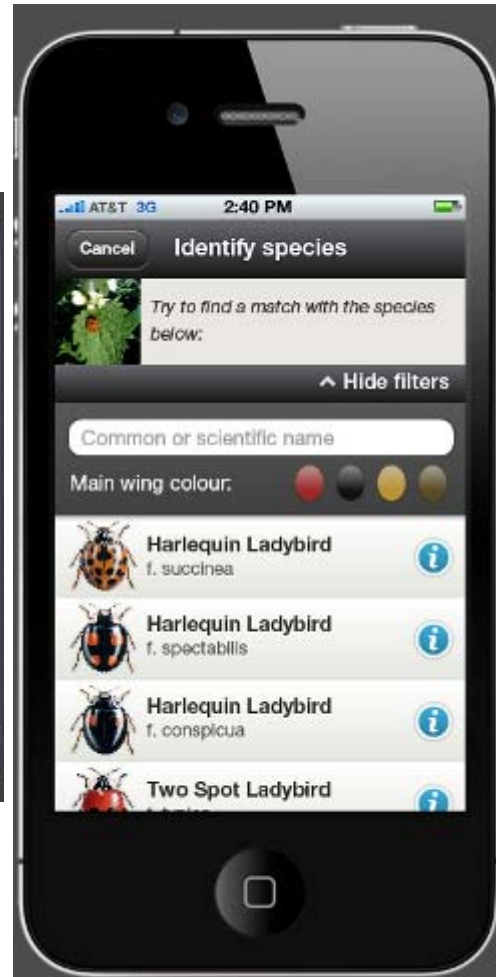


Rhagonycha fulva | Common Red Soldier Beetle

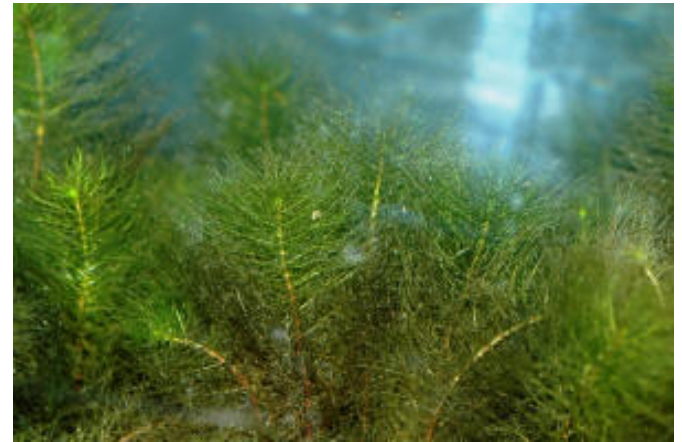


Aromia moschata | Musk Beetle

Review and adapt



Future invaders...?



Future invaders...?



Consensus approach to Horizon-Scanning



Summary

Monitoring and surveillance are essential components of IAS management

Sharing resources and sharing data

Collaboration and communication is critical



COST TD1209 - Alien Challenge

...to facilitate enhanced knowledge gathering and sharing through a network of experts, providing support to a European IAS information system which will enable effective and informed decision-making in relation to IAS

http://www.cost.eu/domains_actions/fa/Actions/TD1209

Acknowledgements

Volunteer experts and recorders



Department
for Environment
Food & Rural Affairs

