PlantAlert

A new tool to report potentially invasive garden plants

Katharina Dehnen-Schmutz (Coventry University)
Tom Humphrey & Kevin Walker (BSBI)
Outline

• Why ornamental plants?
• Citizen science to identify potentially invasive ornamentals
• How Plant Alert works
• How you can contribute
Why ornamental plants?

75% of globally naturalised plants are domesticated in gardens

van Kleunen et al. 2018
Plant invasions in Europe

Pysek et al, 2008

Number of naturalized plants
- no data
- data only on all aliens
- 1-225
- 226-500
- 501-750
- 751-1000
- 1001+

Unintentional introductions = 37.2%

Commodity contaminant 6.1%
Mineral contaminant 1.8%
Seed contaminant 9.1%
Released 0.5%

Unaided 1.9%
Stowaway 9.9%
Forestry 1.6%
Agricultural 6.6%
 Horticultural 17.9%
Ornamental 39.9%
Amenity 5.0%
Intentional introductions = 62.8%
Pathways of introduction of alien plants in England

Fig. 2 Cumulative number of first records of non-native species introduced accidentally or escaped from cultivation in England between 1850 and 1986. Data from Hill et al. (2005).

Dehnen-Schmutz & Touza, 2008
Ornamental plants in Britain

72,000 plants on sale

22 million gardens

Flora of the British Isles:
- 1,530 native species
- 1,195 non-native species from horticulture
- 934 non-natives with different pathways

Invasion debt

Climate change

Time lags

Future non-native / invasives

Stace & Crawley, 2015

The invasion process starts here
Involving gardeners

• The invasion process of ornamental plants starts in gardens.
• Gardeners will notice first if a plant is a problem.
• This knowledge could be very valuable for the prevention of future invasions.

*Lamium galeobdolon* subsp. *argentatum*  
*Houttuynia cordata*
Citizen science pilot study

- Could a citizen science survey provide more information than recording outside gardens?
  - records of plants not known outside gardens
  - plants not widespread
  - evidence of plants difficult to control
**Pilot study**

- Nov 2015 – April 2016
- 56 responses, mainly BSBI members, professional gardeners
- 201 records, 121 species (17 native)
Plants reported

The most frequently reported species:

<table>
<thead>
<tr>
<th>Species</th>
<th>Garden records</th>
<th>GB Distribution*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crocosmia x crocosmiiflora</td>
<td>6</td>
<td>1954</td>
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<tr>
<td>Lamium galeobdolon subsp. argentum</td>
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<tr>
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<td>Anemone x hybrida</td>
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<td>180</td>
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<td>Aquilegia spec.</td>
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<td>Cotoneaster spec.</td>
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<td>Houttuynia cordata</td>
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<td>Pentaglottis sempervirens</td>
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<td>1950</td>
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<td>Schizostylis coccinea</td>
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<td>Symphoricarpos albus</td>
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<td>2172</td>
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<td>Vinca major</td>
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* Number of GB 10x10 km squares in which the species has been recorded
## Plants with few records outside cultivation

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<th>Species</th>
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<th>Hec 1930-69</th>
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**Hesperanthea coccinea 'Major'**

Crimson flag lily ‘Major’

Other common names
- crimson flag lily ‘Major’

Synonyms
- Schizostylis coccinea grandiflora
- Schizostylis coccinea ‘Gigantea’

Genus
Hesperantha are semi-evergreen, rhizomatous, sword-shaped, erect leaves and spikes of red flowers from late summer to late autumn.

Details
- 'Major' is a vigorous clump-forming perennial.
Plants reported with no records outside gardens

<table>
<thead>
<tr>
<th>Anemone sylvestris</th>
<th>Tetrapanax papyrifer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arctotheca prostrata</td>
<td>Libertia peregrinans</td>
</tr>
<tr>
<td>Asclepias speciosa</td>
<td>Moraea huttonii</td>
</tr>
<tr>
<td>Carex trifida</td>
<td>Geranium cinereum</td>
</tr>
</tbody>
</table>
Plants in the Global Naturalised Flora database (GloNAF)

- **Anemone sylvestris**
- **Arctotheca prostrata**
- **Asclepias speciosa**
- **Carex trifida**
- **Tetrapanax papyrifer**
  - **'Rex'**
  - Chinese rice-paper plant 'Rex'

http://pinktrug.blogspot.co.uk
http://www.wikiwand.com/fr/Geranium_cinereum
Gardeners do not want invasive plants

“In your opinion, do you think that any of the plants you named should be sold with a label warning buyers of the potential difficulty to control them in their gardens?”

Yes - Anamentheles

Mimulus in particular. I don't think that Mimulus should be sold for garden use.

Yes, there should be a warning, as they are totally invasive. (Japanese Anemone)

Yes. They were grown on a stream bank and rapidly colonised the stream. Needs a clear warning not to grow near watercourses (Houttuynia cordata)

No, impractical and very niche plants anyway
Conclusions from pilot study

• Data collected useful to identify:
  - species not yet wide spread
  - species not yet known outside cultivation
  - showing signs of invasiveness (spreading and difficult to control)

• Problems:
  - temporary project
  - no possibility to submit photos
  - data not integrated with existing databases
Plant Alert

- BSBI hosted
- Permanent availability
- Works on mobile phones (also offline)
- No need to download app

This project is still under development. Any results currently shown here aren’t real!

PlantAlert is a citizen science project for gardeners. Help other gardeners and protect the countryside by warning about invasive plants before they become a problem.

Keeping ornamental plants in the garden

While maintaining the benefits and contributions of non-native plants to our gardens, we need to know at an early stage which of those plants might go on...
Reporting a plant

Localising your records
To make sense of the national coverage of the records we receive, we need to know the approximate location of your garden. Usually a postcode works well for this, but you can provide an Ordnance Survey grid-reference if you prefer. We also need a place name, as a way to double check that the postcode or grid-reference makes sense.

Please don't provide your full address, as we would need to remove that from our data.

Your name and email
Both of these are optional, but providing an email address is important if you want to return to your survey later or to revise your records. It is also really useful for our experts to be able to contact you if we have questions about the records that you've sent.

We'd like to be able to include your name with the
Reporting a plant

Welcome

About you and your survey

Your plant records

Records of invasive plants in your garden.

Add a plant record.

(unnamed plant)

About your garden

Details of invasive garden plant

plant name

Type the common or scientific name of the invasive plant and, if possible, pick a suggestion from the list. If you do not know the name of the plant then please leave this blank and include some photos.

How confident are you about your identification of this plant?

please choose an option

How do you control this plant?

(tick all that apply)

- digging
- pulling
- chemical
- cutting
- mulching
- other

Please tell us how you dispose of this plant?

(tick all that apply)

- home composting
- green waste
- other waste collection
- other

Which of the following best describes your effort to control the plant?

please select a response

Please tell us how this plant came into your garden?

(tick all that apply)

- Was already in the garden
- Bought the plant
- Grown from seed
- From someone else's garden
- Non-commercial sale/swap
- Spread into my garden
- other

Is the plant growing locally outside your garden?

please select a response

In your opinion, should the plant be sold with a label warning buyers of potential control difficulties in their garden?

please select a response

Any other comments about this plant?
How are the data used?

• Visible on the webpage
How are the data used?

• Visible on the webpage
• All data integrated into BSBI database but clearly labelled as Plant Alert record
• Summary of records once a year published:
  in BSBI News, webpage, forwarded to NNSS, horticultural industry
• Creation of a long term dataset for monitoring change
• Can be used for campaigns for particular species
Please help to spread information

- Key to success is awareness of the data base
- Include in news
- Social media

We need many users!
Thank you!

Contact
Katharina Dehnen-Schmutz
ab6340@coventry.ac.uk

50% PhD studentship funding opportunity through Coventry University
Do gardeners know more than we do?

Re: T Rex (Tetrapanax papyrifer) about to flower, pups, growt

by Nick » Tue Jul 06, 2010 9:50 pm

Dave I reckon it’s going for world domination, look out everyone it’s coming to a town near you 😆😆

Nick

Positive

On Jul 25, 2011, sluiffr from gillingham

On Apr 21, 2013, vmr423 from Charleston, SC wrote:

Highly invasive exotic plant. My folks have this in their yard & it pushes up suckers through pavement & dislodges brick paving. Has spread from back yard all through the front & side yards & into adjoining neighbors' yards.