

# Plant Alert – results from the first three years

KATHARINA DEHNEN-SCHMUTZ, JOSEF KUTLVAŠR  
& APRIL WEBB



Launched in 2019, Plant Alert is now a well-established reporting tool collecting data from gardeners and the wider public on ornamental plants spreading in gardens. Hosted by the BSBI and integrated within the BSBI database it continues to receive records in line with the initial idea to have this as a permanent reporting tool ([www.plantalert.org](http://www.plantalert.org)). While we have posted regular updates about the project in *BSBI News*, here we want to provide a first overview of the records we have received so far. A PhD student research exchange in February 2022 offered the opportunity for JK to spend time analysing the records we had received to this date. The main aim of this article is to provide some insight into how we want to use the data to identify potential future invasive species and to report some of the additional information we received for the reported species from participants in the project.

## Species reported

By February 2022 we had received 579 records relating to 211 species, of which 36 are native, 11 archaeophytes and 164 neophytes. In our previous updates, we have mostly reported on the species which were reported most often, and these are also always displayed on the project's web page. These include some very familiar invaders, such as *Reynoutria japonica* (Japanese Knotweed) and *Impatiens glandulifera* (Himalayan Balsam). However, as the main aim of the project is to gain evidence of potential future invasive plants, we are particularly interested in reports of plants that are not widespread and known as invasive in Britain and Ireland. We therefore checked for all plants if they have any records in the BSBI database, i.e. if they have been reported from outside gardens. This was not the case for nine species (Table 1), all of which were reported just once, with the exception of *Araujia*

*sericifera* (Cruel Plant), which was reported by two participants.

We then considered all records of plants which were more frequently reported, i.e. having five or more records and having a distribution of less than 1500 hectads, resulting in a list of 14 species (Table 2). For all of these species, we found evidence that they have naturalised in other countries where they are not native in the Global Database of



*Oxalis corniculata* (Procumbent Yellow-sorrel) has been frequently reported having entered participants' gardens accidentally in pots with other plants or with building materials or compost.  
Roger Horton

**Table 1.** Recorded taxa with no occurrences in the BSBI database 2000 onwards and the number of nurseries selling them

Species	Nurseries
<i>Anarrhinum bellidifolium</i>	0
<i>Araujia sericifera</i>	9
<i>Chrysosplenium davidianum</i>	8
<i>Baptisia australis</i>	61
<i>Campanula isophylla</i>	3
<i>Dipsacus asper</i>	1
<i>Phaenosperma globosum</i>	11
<i>Salvia viscosa</i>	2
<i>Themeda triandra</i>	1

**Table 2.** The most frequent taxa (five or more Plant Alert records) with the least count of hectads (<1500) from the year 2000 onwards and the number of nurseries selling the species.

Taxa	Records	Hectads	Nurseries
<i>Leycesteria formosa</i>	22	1447	40
<i>Houttuynia cordata</i>	16	84	12
<i>Anemone</i> × <i>hybrida</i>	16	437	51
<i>Allium triquetrum</i>	13	1122	14
<i>Erigeron karvinskianus</i>	7	1056	102
<i>Fallopia baldschuanica</i>	7	1128	26
<i>Oxalis corniculata</i>	7	1299	0
<i>Lysichiton americanus</i>	6	594	0
<i>Verbena bonariensis</i>	6	695	113
<i>Soleirolia soleirolii</i>	6	1332	15
<i>Akebia quinata</i>	5	15	61
<i>Rubus spectabilis</i>	5	451	5
<i>Euphorbia amygdaloides</i> subsp. <i>robbiae</i>	5	656	66
<i>Hypericum calycinum</i>	5	905	18

Naturalised Alien Flora (GloNAF) (<https://glonaf.org>; accessed February 2022). We also checked for these species the number of nurseries listed in the RHS plant finder ([www.rhs.org.uk/plants](http://www.rhs.org.uk/plants); accessed February 2022) as a measure of popularity of these species.

The more popular a garden plant is in the trade, the more likely it is to be planted in a garden, providing opportunities for species to spread and being recorded outside gardens. The number of nurseries selling a species has previously been shown to explain the likelihood of ornamental plants to escape cultivation (Dehnen-Schmutz et al., 2007). Only two species are not on sale currently, *Lysichiton americanus* (American Skunk-cabbage) which is banned from sale as an invasive species, and *Oxalis corniculata* (Procumbent Yellow-sorrel), which is not considered an ornamental plant (spread mostly with nursery stock). *Rubus spectabilis* (Salmonberry), sold as a species by just five nurseries, is banned from being planted in the Republic of Ireland where it is known to prevent native tree regeneration in woodlands (Gioria et al., 2018) and scheduled in the Wildlife and Countryside Act for Northern Ireland, where it is therefore ‘illegal to plant or otherwise grow in the wild’, but not banned from sale. However, various double flowered ‘flore pleno’ cultivars are available from more than 30 nurseries. This species seems certainly also a candidate for a risk assessment

given the increasing number of records, continued popularity and evidence of the negative impacts in Ireland.

*Akebia quinata* is a well-known invasive species in North America, where it is controlled because of its high impacts in woodlands. In Britain, the species is currently undergoing a pest risk assessment by the GB Non-native Species Secretariat. For the rest of the species in our list (Tables 1 & 2) we would recommend narrowing down the list by a screening

*Tropaeolum ciliatum* received one record to date by Plant Alert and there is a single record in the BSBI database. Shirley Brittin



process considering further evidence on invasiveness (not just naturalisation as documented in GloNAF), impacts in other countries and climatic suitability before subjecting some of them to the full risk assessment process.

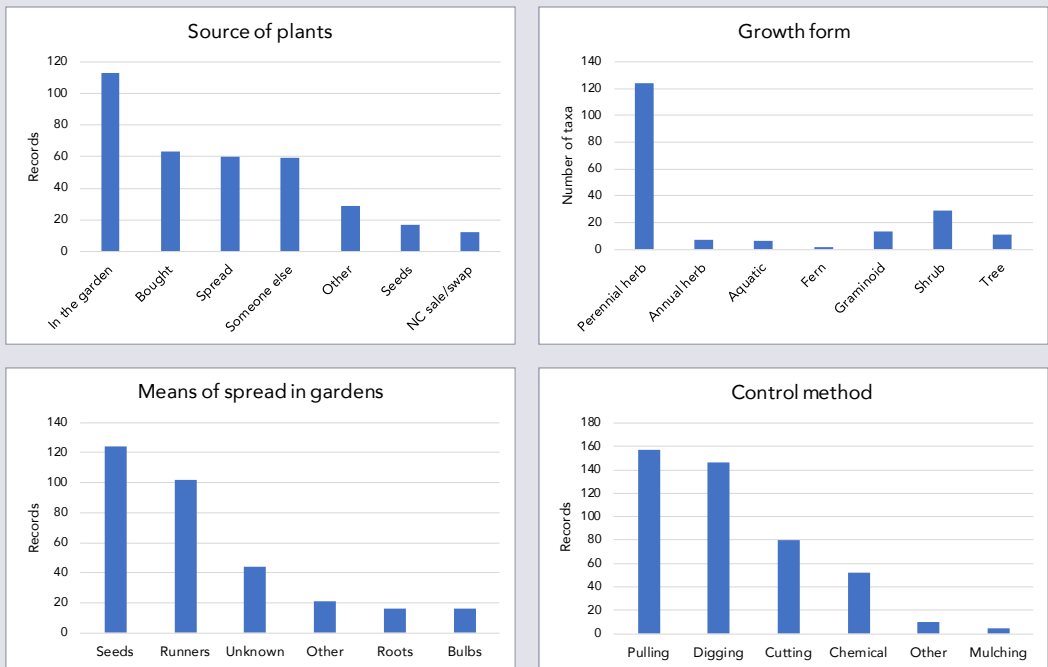
This approach will also be applied to the full list of records received to include species with few records from gardens and in the BSBI database. For example, we received one record of *Tropaeolum ciliatum* (Yellow Flame Flower), a climber native to Chile, which is not reported as invasive in the usual invasion science databases; however, reviews in gardening forums and product reviews on online retailers web pages as well as nurseries selling the species themselves are warning of its invasiveness ('once established, you'll never get rid of it').

It is also important to keep in mind that Plant Alert is just one tool to identify species with potential future high environmental impacts with a focus on garden plants; there are also many species that are already widespread with evidence of impacts that

should also be considered for risk assessments and potential policy actions. In these cases, Plant Alert can also contribute information, in particular evidence which could be relevant to the potential management of such species. For example, the high number of records of *Lamium galeobdolon* subsp. *argenteum* (Variegated Yellow-archangel) and comments received on the difficulties to control the species in gardens also indicate potential problems with its management in woodlands, where it is increasingly invading.

### Gardeners' feedback on the reported plants

Most of the plants reported were already in the gardens of participants when they moved in, followed by plants they had bought themselves, that spread into their gardens or which they were given by someone else (Figure 1). Seeds and non-commercial sales and seed swaps were less often mentioned as introduction pathways. Other pathways included,



**Figure 1.** The source of invasive garden plants in respondents' gardens (top left), their growth form (top right), spread in the garden (bottom left) and control measures applied (bottom right).



*Houttuynia cordata* is one of the most frequently reported plants gardeners struggle to contain in their gardens. Jacqueline Nutkins

for example, the introduction with potted plants for *Oxalis corniculata*, birds (*Rubus spectabilis*, *Crassula helmsii*, *Leycesteria formosa*), or building materials and compost (*Oxalis corniculata*). Most plants reported were herbs, but other lifeforms were also reported.

Participants reported that most of the species they recorded were spreading by seeds, followed by runners and roots; the most often used control techniques were hand weeding by pulling or digging (Figure 1). Respondents used green waste collections for 39% of plants once removed, 34% were put into home composting, 10% in general waste and 17% were disposed of with other methods, where in most cases burning was mentioned. Finally, when asked about if they think the plants should be labelled with a warning about their potential invasiveness, respondents agreed for 72% of records, were unsure in 15% of cases and didn't think it was useful for just 4% (the question was not answered for 9%).

## Outlook

A key feature of Plant Alert is that it is designed to be a permanent reporting tool. As we continue to receive records, we will also continue to analyse these, make them available for horizon scanning

exercises (which has already happened in a UK-CEH workshop in 2019) and work with relevant authorities to raise alerts for species, which may not have been on their agenda before. Over time, records should also allow different questions to be asked, for example, if more species previously not considered fully hardy in our climate will be reported, or if the number of records for species that are subject to regulatory policies will decline. We also hope the results could be a source of information for the horticultural industry and be used to provide more advice to gardeners trying to manage them in their gardens or wanting to know which plants to avoid while still enjoying the benefits of non-native ornamental plants in their gardens.

## Acknowledgements

We are very grateful to all participants who submitted records to Plant Alert, gave permission to use their photographs, everyone who helps to promote the project and Tom Humphrey for setting up and maintaining the project web page and recording forms.

## References

- Dehnen-Schmutz, K., Touza, J., Perrings, C. & Williamson, M. 2007. A century of the ornamental plant trade and its impact on invasion success. *Diversity and Distributions* 13: 527–534. <https://doi.org/10.1111/j.1472-4642.2007.00359.x>
- Gioria, M., O'Flynn, C. & Osborne, B.A. 2018. A review of the impacts of major terrestrial invasive alien plants in Ireland. *Biology and Environment: Proceedings of the Royal Irish Academy* 118B: 157–179. <https://doi.org/10.3318/bioe.2018.15>

## Katharina Dehnen-Schmutz, April Webb

Centre for Agroecology, Water and Resilience,  
Coventry University, Ryton Gardens, Wolston  
Lane, Coventry, CV8 3LG  
[ab6340@coventry.ac.uk](mailto:ab6340@coventry.ac.uk)

## Josef Kutlvař

Department of Invasion Ecology, Institute of  
Botany, The Czech Academy of Sciences, Zámek 1,  
252 43, Průhonice, Czech Republic