Amenity Forum

Guidance Note

Invasive Weed Control in Amenity

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Introduction

Invasive weeds control is a multi-billion-pound issue worldwide with the UK invasive weed control industry estimated to generate between £40-150 million each year from Japanese knotweed remediation alone. Economic costs also result from the loss of viable farmland, damage and loss of biodiversity.

Invasive species are generally accepted to have one or more negative characteristics or effects, typically out-competing other plants, causing soil erosion, damaging biodiversity, damaging farmland or the built environment, allelopathy (releasing chemicals which damage or limit other species) and, in some cases, causing negative effects to human health.

While there is no universally accepted definition of an invasive species, many of the problem plants in the UK originate outside of the British Isles. These "introduced" or "alien" species are generally referred to as "non-native invasive species".

It is worth noting that many UK invasive species remediation specialists also provide services to manage native species including horsetail (*Equisetum* species), ragwort (*Senecio jacobaea*) and others. Conversely, many non-native species are commonly managed satisfactorily by arborists, gardeners or other non-specialist grounds maintenance teams. The distinction depends not only on species, but also the scale of infestation, sensitivity of the location, proximity to watercourses, timescales for remediation and the risks associated with cross-contamination of neighbouring sites or areas.

The Amenity Forum provides specific guidance notes on dealing with three of the most noteworthy invasive species – Japanese knotweed, Himalayan balsam and giant hogweed – but there are many other species to consider, each with their own individual characteristics.

There are several pieces of legislation or government guidance which apply to plants, including:

- the Wildlife and Countryside Act 1981 (WaC Act) - whose Schedule 9 includes a list of controlled plant species, and which prohibits causing or allowing the plants to grow or spread in the wild
- the Weeds Act 1959, which allows for control orders to be imposed and applies to five native species only: ragwort, creeping thistle, spear thistle, curled dock and broad-leaved dock
- the Noxious Weeds Act (Norther Ireland) Order 1977, which is similar to the Weeds Act but applies only in Northern Ireland and includes the five species on the Weeds Act, plus two species of wild oat (*Avena fatua* L. and *Avena ludoviciana* Durieu)
- the Ragwort Control Act 2003 and associated 'Code of Practice: Ragwort', set minimum standards for ragwort control. The code has legal standing as an 'approved code of practice'
- in many cases, Scotland and Northern Ireland have their own broadly-equivalent versions of the above legislation and Scotland also has the Wildlife and Natural Environment Act (Scotland) 2011, which is effectively an amendment to the WaC Act.
- there is currently (as of January 2023) legislation arising from the EU Invasive Alien Species Regulation, including the Invasive Non-native Species Regulations 2019 and Invasive Alien (Enforcement and Permitting) Order 2019
- after Brexit, the EU List of Species of Concern was replaced, for UK purposes, by a UK "List of Species of Special Concern" containing 36 species, eight of which are widespread in the UK. Giant hogweed and Himalayan balsam appear on the list, but Japanese knotweed does not.
- Landowners or land managers may also be subject to enforcement under the Anti-social Behaviour, Crime and Policing Bill 2014 if they allow plants on their land to cause an impact to amenity.

There are also regulations and other government guidance (including the Environmental Protection Act 1990 and Regulatory Position Statement 178) which relate to wastes controlling invasive plant material. Furthermore, there is extensive best-practice guidance from trade bodies including the Property Care Association (PCA) and Invasive Non-Native Specialists Association (INNSA).

There are a number of points to consider when treating invasive species:

- An invasive species management plan should generally be put in place to detail the process and the goals of your treatment regime and any other relevant information, such as environmental risks and contamination pathways.
- Your management plan should include persons responsible for each action, timescales, dates for completion of each action and specific information including e.g. locations for treatments.
- A site plan (map or drawing) showing the locations of infestations is generally appropriate.
- Biosecurity is a prime concern, particularly with species on Schedule 9 of the WaC Act, as causing the plants to spread could result in higher long-term costs for management as well as potentially constituting a criminal offence or resulting in civil liability for landowners or land managers.
- The management plan should follow integrated pest management (IPM) principles – i.e. it should consider all available treatment methods, with herbicide used as a last resort and herbicide used in the minimum quantities to achieve the goals of the plan
- Treatment should be timed to prevent invasive plants from setting seed and generating new plants (some plants can generate thousands of seeds each year)
- For most plants and remediation methods, the plan should consider monitoring and/or treatment over a number of years to manage any seed bank or residual growth. Some plans will be open-ended, as in some situations, there is no realistic prospect of achieving a site free from invasive species, and harm reduction and control of spread is the only available option.
- Your invasive species management plan should be reviewed periodically to ensure that it is being implemented as planned, that it is effective and that it is still in line with current best practice.

In terms of integrated pest management (IPM), a number of methods may be suitable for invasive species control, but this will depend on the species, location, timescales for management or remediation and a variety of other factors. Some methods may achieve temporary control or surface die-back only, without resulting in long term eradication from site; however in some circumstances, such approaches may be suitable because, due to off-site infestation or other site-specific factors, long term eradication may not be a realistic prospect for a management plan.

This guidance will not provide an exhaustive list, but some of the non-herbicide methods available are included on the list below. Suitable consideration of health and safety factors is key to planning, particularly with giant hogweed, which can result in severe burns on contact with human skin.

- Cutting back of foliage above ground level with hand tools, power tools (including strimming, mowing or tree felling by chainsaw) may result in control of plants if repeated at suitable frequency and intervals. Considerations include the possibility of cut plants re-rooting and the spread of seeds or propagules (pieces of a plant which may grow into new plants). Cutting before flower formation is generally preferable, and suitable stockpiling of arisings (on e.g. impermeable surface) should be considered.
- Vegetation clearance may also be a suitable precursor to cut-stump herbicide treatment, which is effective on trees and woody perennials.
- Hand-pulling of species, particularly annual plants, may be suitable if carried out at an appropriate time and repeated over successive growing seasons in order to deplete any seed bank. The considerations that apply to cutting back foliage, as above, also apply here – particularly timing to avoid seed formation and appropriate management of arisings, which may have the potential to re-root or to cause new growth.

- Specialist methods for certain species exist, including installation of metal mesh frame above ground level which can induce thick, soft-stemmed plants such as giant hogweed and Japanese knotweed to deplete their rhizomes by effectively cutting themselves back. Periodic monitoring is required, and the suitability of the site for installation must be assessed.
- Removing or severing the tap root of certain plants can cause the plant to die. Suitable methods may include: removing the root by hand (pulling), using a generalist tool such as a root puller, specialist tools such as "rag-forks" for removing ragwort, or simply cutting across the root with the blade of a root cutter or spade at a suitable level (often slightly below ground level). Alternatively, the whole root of certain species can be dug out using a spade or with heavy plant – as described in further detail below. A similar approach may be taken with felled trees by grinding out the stump with specialist site plant.
- A variety of methods including hot foam, steam, burning and high-voltage electrical treatment are available, and are often marketed as environmentally friendly alternatives to herbicide – however, the energy input (and therefore carbon footprint) and the water usage of these methods should also be considered when assessing their suitability. Use of these methodologies will vary depending on species and the aims of the management plan but will also be heavily influenced by the surface and growth medium in which the plants are rooted (e.g. soils, grassland, railway ballast or hard surfaces). In some cases, these methods simply kill off the surface growth using heat; in other cases, the treatment can penetrate through to root level and kill more resilient weeds. Such a distinction will determine the frequency of application as well as whether the method is well-suited to the aims of the management plan. These approaches are generally best-suited to easily accessible, open, flat ground. For the most deep-rooted perennial weeds or for semi-mature or mature trees, these methods are unlikely to be appropriate.
- Excavation and removal of soils containing roots, rhizomes and/or seed bank is possible but, depending on the species, may require removal of large amounts of materials, which may be classified as controlled waste if they are removed from site. Invasive species trade bodies provide extensive guidance and minimum standards for this and the other approaches below with regard to Japanese knotweed removal. It is also important to take suitable measures to assess the potential hazards within the soils (asbestos, hydrocarbons, heavy metals etc.) which may affect the methodology and waste classification.
- Excavated soils may be removed from site and taken to landfill but the costs and logistics of waste processing and the legal requirements of reporting and record-keeping are significant.
- It may be suitable to relocate soils to another area of the site in order for another long-term treatment plan to be carried out in a more suitable location. The location should be appropriately chosen (see RPS178 below).
- Soils can be buried on site (with significant constraints and subject to relevant waste legislation – see link to RPS178 below). The depth of burial and installation of suitable barrier membranes are major considerations here, and burials should only be located in suitable locations (generally only under public open spaces).
- Soils can also be processed, including by screening or sieving to separate plant material from the soils. It is important to note that, generally, screened soils are not viewed as "clean" soils and are not suitable for removal from site or use in areas where clean soils are required. Soil treatment including heat or steam treatment to ensure that soils arising from the process contain no viable plant material (propagules) is in the process of testing and development; this is not currently widespread in the industry.

Herbicide treatment with appropriate formulations is likely to present one of the most effective remediation methods for invasive weed control. Methods may include spray, stem injection or stem filling (particularly for Japanese knotweed etc.), leaf wiping or painting, stump plugging or stump painting. For perennials, foliar-applied, translocated herbicides including glyphosate-, triclopyr- or aminopyralid-based formulations may be more appropriate, whereas for annuals or to achieve temporary or surface control, 2,4-D-based,

flazasulfuron-based or acetic acid-based formulations may be more appropriate. Various active ingredients and formulations are available and professional advice from a BASIS-registered professional agronomist should always be sought. For works near watercourses or in conservation sites, local environmental or regulatory agency approval is likely to be required, and choice of suitable formulations may be very limited.

Where invasive species are present in areas where other day-to-day or occasional landscaping, vegetation clearance or amenity management works are to be undertaken, or where building or development works are planned or to be undertaken, it is generally good practice to consult or employ a specialist invasive species contractor who may either provide suitable advice, offer specific services or attend site on a watching brief to ensure that proper biosecurity is maintained throughout the works.

Such biosecurity measures could be as simple as on-site identification and monitoring or may extend to setting up segregation between "clean" and "contaminated" areas, with suitable decontamination measures applied to people and tools used in the processes and to any materials arising from the works.

Further Reading

Government Guidance on Invasive Plant Species
https://www.gov.uk/guidance/invasive-non-native-alien-plant-species-rules-in-england-and-wales

UK Government Guidance Note on the reform of anti-social behaviour powers
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/364846/Japanese_Knotweed_information_note.pdf

UK List of Species of Special Concern
https://www.gov.uk/guidance/invasive-non-native-alien-plant-species-rules-in-england-and-wales#list-of-invasive-plant-species

UK legislation – Wildlife and Countryside Act Schedule 9
https://www.legislation.gov.uk/ukpga/1981/69/schedule/9

Environment Agency guidance RPS178
https://www.gov.uk/government/publications/treatment-and-disposal-of-invasive-non-native-plants-rps-178/treatment-and-disposal-of-invasive-non-native-plants-rps-178

Information on the Anti-social Behaviour, Crime and Policing Act 2014
https://www.brickfieldspark.org/miscdata/japaneseknotweedinformationnote.pdf

Property Care Association
https://www.property-care.org/professionals/guidance/invasive-weeds

INNSA
https://innsa.wpengine.com/wp-content/uploads/2019/06/INNSA-Code-of-Practice.pdf

Scottish Government's Code of Practice on Non-Native Species
https://www.gov.scot/publications/non-native-species-code-practice/

List of Species of Special Concern
https://www.gov.uk/guidance/invasive-non-native-alien-plant-species-rules-in-england-and-wales#list-of-invasive-plant-species

Author: Chris Oliver, Japanese Knotweed Solutions Ltd