Invasive Species Survey:

Report prepared for AFEC Ltd Schools Decant Program – Kishoge Community College.

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Summary

At the request of AFEC Ltd an invasive species survey was carried out at the site for a school at Kishoge, Thomas Omer Way, Clondalkin, Co Dublin.

The brief for the survey specified that it should cover the following species: Japanese knotweed, Bohemian knotweed, Giant knotweed, Giant hogweed, Giant rhubarbs, Himalayan knotweed, Himalayan balsam, Hottentot fig and Rhododendron both within the site and 10m outside. Dr Mary Tubridy, a botanist with experience of invasive species surveys, examined the site on May 27th 2022.

No invasive species were found.

1 Introduction

1.1 Brief

This report has been prepared at the request of AFEC to provide an invasive species survey at a site in Kishoge, Co Dublin where it is proposed to build a new school. AFEC has been appointed as project manager by the Department of Education and an invasive species survey is required to inform plans for the construction of the school.

AFEC provided a map of the site and location details (Fig. 1).

The site (outlined in red) is situated on Thomas Omer Way immediately east of Griffeen Community College, Thomas Omer Way, Clondalkin, Co Dublin.

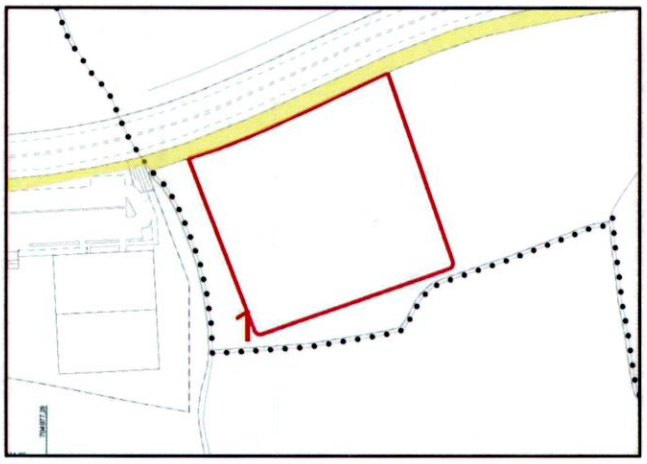


Fig.1 Site for invasive species survey at Kishoge

The brief specified that the survey would involve one site visit and visual survey for the following species in the site and within 10m of the boundary:

Japanese knotweed, Bohemian knotweed, Giant knotweed, Giant hogweed, Giant rhubarbs, Himalayan knotweed, Himalayan balsam, Hottentot fig and Rhododendron.

1.2 Management of invasives

Control of invasive alien species has become a biodiversity priority globally and nationally due to their effects on habitat integrity, the consequent economic impacts on agriculture, fisheries, tourism, the human health implications and expense associated with their control.

On September 29th, 2014, the European Council adopted a Regulation on the prevention and management of the introduction and spread of invasive alien species [2013/0307 (COD)]. The Regulation, that is a binding legal tool for all Member States, entered into force on January 1st 2015. The Regulation lays down rules to prevent, minimise and mitigate the adverse impacts of the introduction and spread, both intentional and unintentional, of invasive alien species on biodiversity and the related ecosystem services, as well as other adverse impact on human health or the economy.

There will be a phased introduction of the requirements under this regulation which is binding on all member states. Some milestones and key elements are listed below:

- List of alien invasive species of Union concern – reviewed every 6 years (proposed list by 01/01/2016) Member States can request for inclusion of a species based on risk assessment
- Functioning structures for Official controls (border controls, goods entry points) by 02/01/2016
- Surveillance system by 18 months**
- Pathway analysis (18 months**) and pathway action plans (3 years**)
- Early detection issue of alert notification to Commission and other Member States
- Rapid eradication within 3 months after alert notification.
- Management measures put in place for widely spread species (by 12 months**)
- Restoration of damaged ecosystems undertaken [proportionate]
- Reporting (by 3 years*) and every 4 years* thereafter on – surveillance system, distribution of species, action plans etc.

Relevant legislation in Ireland is the Birds and Habitats Regulations (2011) particularly Regulations 49 and 50. Regulation 49 prohibits the introduction and dispersal of certain species. It places restrictions on the introduction of any plant species listed in Part 1 of the Third Schedule. A person shall be guilty of an offence if they: plant, disperse, allow or cause to disperse, spread or cause to grow the plant in the Republic of Ireland.

Appendix 1 lists species covered by this regulation. It includes all species listed in the brief.

Under the regulations a licensing system is proposed to cover the management of the movement of parts of these plants and vectors (i.e. soil) which could aid their dispersal.

Prosecution can occur if a license is not obtained. The implications of the Regulations are that developers should determine if these species are present and if present measures to control the movement and spread of the invasive species need to be incorporated in development plans. Negative impacts can occur directly through moving the plants or indirectly through disturbing soil containing parts from which regrowth can occur.

The most widespread invasive plant in terrestrial habitats near urban areas is Knotweed, of which three species occur in Ireland. The most common is Japanese knotweed or, *Fallopia japonica* (Houtt.) (with the synonyms *Reynoutria japonica* and *Polygonum cuspidatum*). It is a member of the Polygonaceae (docks and rhubarb family), native to Japan and northern China and was introduced to Western Europe by gardeners in the 18th century.

Fig. 2 Japanese Knotweed

Dispersal typically occurs through fragments (as much as a thumbnail) of stems,

leaves or roots being transported in soil by humans or to a lesser extent, through passive mechanical means such as in floodwaters. All these parts of the plant are capable of growing into a complete plant.

Japanese knotweed causes a range of problems due to its prolific and dense growth habit including blocking sightlines on roads, damage to paving and structures, erosion of riverbanks and flood defense structures, damage to archaeological sites, loss and displacement of native habitats and species.

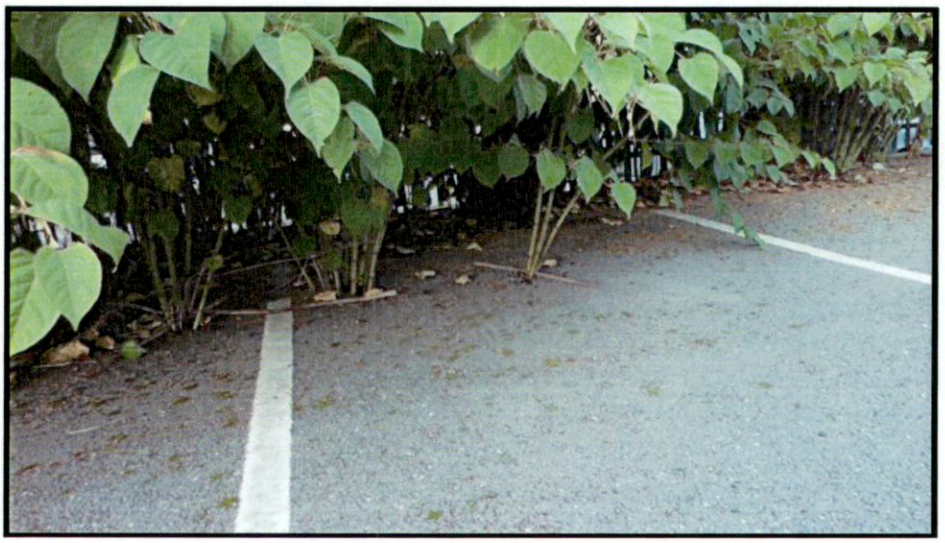


Fig. 3 Impact on hard surface

Within Ireland, concerned interests and statutory agencies have promoted research and best practice for management. This is accessible through the website www.invasivespeciesireland.com. This is based on protocols developed in the UK which are regularly updated by the Environment Agency and are communicated through: http://www.innsa.org/information/sector-information/item/162-new-environment-agency-updated-japanese-knotweed-code-of-practice.html.

Best practice guidance in Ireland has been developed by the National Roads Authority (based on UK experience) and contains survey and control protocols: http://www.nra.ie/environment/environmental-construction-guidelines/Management-of-Noxious-Weeds-and-Non-Native-Invasive-Plant-Species-on-National-Road-Schemes.pdf

1.3 Methodology

The approach to site survey reflects best practice in carrying out habitat and invasive species surveys. Prior to survey work desk based research was carried out (examining historic mapping, aerial photographs, and the National Biodiversity Data Centre data base) to obtain information on landscape history, existing habitats and the current distribution of target species. The NBDC database provided information on the proximity to the site of the target species.

This is summarized in Table 1 together with a risk assessment based on the habitat requirements of each species.

Table 1 Records of invasive species and results of risk assessment

Species English name	**Species Latin name**	**Distance from site (km)**	**Comment on risk**
Japanese knotweed	*Fallopia japonica*	3	High
Bohemian knotweed	*Fallopia japonicaXsachalinensis*	7	Low-medium
Giant knotweed	*Fallopia sachalinensis*	8	Low-medium
Himalayan knotweed	*Persicaria wallichii*	11	Low
Giant hogweed	*Heracleum mantegazzanium*	2	High
Giant rhubarbs	*Gunnera tinctoria* *Gunnera manicata*	6 15	Medium Low
Himalayan balsam	*Impatiens glandulifera*	2	High (if water present)
Hottentot fig	*Carpobrotus edulis*	>20	Low
Rhododendron	*Rhododendron ponticum*	4	Medium

The research showed that while three invasive species have been recorded within 3km of the site experience of IS surveys in this locality suggests that there is the greatest risk of the presence of Giant Hogweed. Himalayan Balsam would only occur if water was flowing through the site. Japanese knotweed would be likely to occur if contaminated soil had been introduced to the site.

Facilitated by the site owner Cairn Homes, Dr Mary Tubridy and field assistant then visited the site on May 27th. All habitats within the site were identified using the Irish Habitat Classification system (Fossitt, 2000). Vegetation was examined very closely for signs of invasive species particularly where present in recently disturbed areas. All accessible areas within 10m of the site boundary were also examined.

Where invasives were identified the following information was collected:

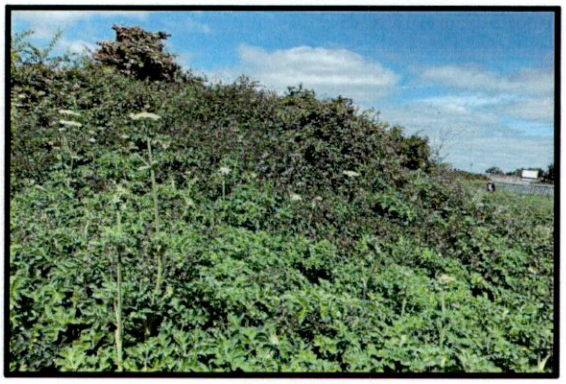
- Species name
- GPS (at the centre of the population)
- Extent of area / m^2
- Photographic record
- Notes on accessibility and terrain to assist with treatment.

2 Results

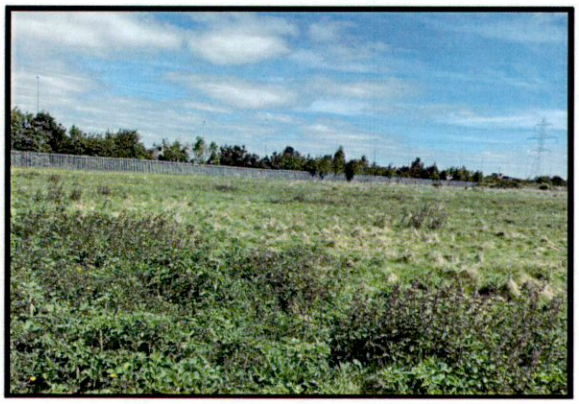
The site features the significant part of an abandoned field surrounded on two sides by hedgerows and on the third by a line of recently planted trees beside

the road. Grass was probably topped c. 2 years ago. Images of the site are in Fig. 2. Vegetation types are GS2 (uncut intensively managed grassland) dominated by Yorkshire Fog *Holcus lanatus*; WL1 Hedgerows, some with Hazel, Elder and Holly; WS1 Semi-natural scrub (with mainly Brambles *Rubus fruticosus* agg) and WS3 scrub consisting of a mixture of non-native and native tree species.

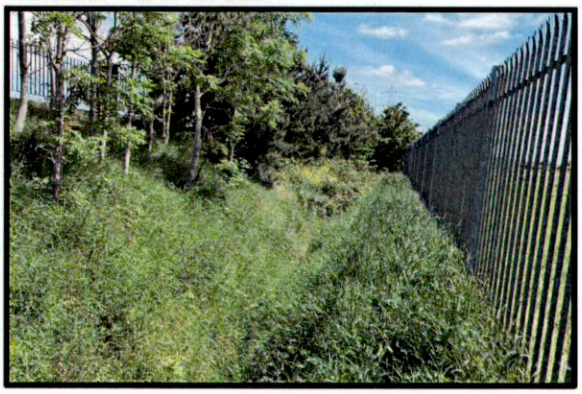
No invasive species were located within or adjacent to the site.



Overgrown hedgerow near western boundary



General view of site



Planted trees along boundary with road

Fig. 2 Features of Kishoge

Table 1 summarises the results of the survey.

Table 1 Invasive Species Assessment

Site Name **Kishoge School Site. Thomas Omer Way, Clondalkin, Co. Dublin**
Date(s) May 27th 2022
Name of Surveyor (s) Dr Mary Tubridy
Fieldmap Maps provided by AFEC Ltd Google aerial photography
Habitats (according to Fossitt, 2000) and their location GS2 (grassland in field) Technically called dry meadows and grassy verges. WL1 (hedgerows (to west and south) of field) WS1 (semi-natural scrub in block in field at eastern end of site) WS3 (ornamental/ non-native shrub resulting from tree planting along border with road.
Current site management Grass topped two? years ago. Fenced to restrict horse grazing.
Invasive Species No invasive species were found
GPS
Description of knotweed stands
Nature of proposed development School
Proposed Control Measures None required

3 Conclusions

Direct inspection of all parts of this site and landscaped area within 10m did not reveal any signs of invasive species.

Care should be taken to ensure that contaminated soil is not brought to the site.

References

Fossitt, J. (2000) A Guide to Habitats in Ireland, Heritage Council, Ireland.

Appendix 1

European Communities (Birds and Natural Habitats) Regulations (S.I. No. 477 of 2011): Regulations relevant to invasive species

The plant species to which the regulations apply are presented in the table following the text. The vector materials are also listed in the table.

Section 49. Prohibition on the introduction and dispersal of certain species.

Section 49 of the act states:
(1) Save in accordance with a license granted under paragraph (7), any person who breeds, reproduces or releases or allows or causes to disperse or escape from confinement, any animal which—
(a) is not—(i) ordinarily resident in or is not a regular visitor to the State in a wild state, or (ii) of a kind that is domesticated or that is in the normal course the subject of human husbandry,
(b) is included in Part 2A of the Third Schedule in any place specified in relation to such animal in the third column of Part 2A of the Third Schedule, or
(c) is included in Part 2B of the Third Schedule in any place specified in relation to such animal in the third column of Part 2B of the Third Schedule, shall be guilty of an offence.
(2) Save in accordance with a license granted under paragraph (7), any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in any place specified in relation to such plant in the third column of Part 1 of the Third Schedule, any plant which is included in Part 1 of the Third Schedule, shall be guilty of an offence.
(3) Subject to paragraph (4), it shall be a defense to a charge of committing an offence under paragraph (1) or (2) to prove that the accused took all reasonable steps and exercised all due diligence to avoid committing the offence.

(4) Where the defense provided by paragraph (3) involves an allegation that the commission of the offence was due to the act or default of another person, the person charged shall not, without leave of the court, be entitled to rely on the defense unless, within a period ending 28 days before the hearing, he or she has served on the prosecutor a notice giving such information identifying or assisting in the identification of the other person as was then in his or her possession.

(5) (a) In this Regulation, an animal or plant listed in the Third Schedule shall mean such an animal or plant or a hybrid of any such animal or plant or any breed, strain, sport, variety, cultivar or other intraspecific

taxon of such plant or animal in relation to the entire State or, where limited for such an animal or plant, the particular areas set forth in the Third Schedule for each such animal or plant. (b) For the avoidance of doubt, an animal or plant of a species to which the Third Schedule refers shall include specimens of such species under any scientific synonym, vernacular name or trade name by which it may be referred to.

(6) In this Regulation, "confinement" means a place in which an animal is secure from escaping and from which its eggs, larvae, young, any life stage or resting stage, or any part from which an adult of the animal could develop are secure from being dispersed or escaping.

(7) (a) One or more persons may make an application for a license, under this paragraph, for the purposes of complying with the requirements of paragraph (1) or (2).
(b) The Minister may seek from the applicant any information that he or she considers necessary for consideration of the application.
(c) The Minister may grant or refuse to grant, or revoke, such a license, and shall give reasons for his or her decision and for any conditions imposed under subparagraph (f).
(d) In making a decision under subparagraph (c), the Minister shall take account of the requirements of the Habitats Directive and the Birds Directive and in particular the requirements of Article 22(b) of the Habitats Directive, and he or she shall take account of such advice or information as he or she considers appropriate in relation to any animal or plant to which the license application relates.
(e) The Minister shall grant a license under this paragraph only if he or she is satisfied that the grant of the license will not pose a threat to the objectives of the Birds Directive or the Habitats Directive.
(f) A license granted under this paragraph shall be subject to such conditions, restrictions, limitations or requirements as the Minister considers appropriate.
(g) Any conditions, restrictions, limitations or requirements to which a license under this paragraph is subject shall be specified in the terms of the license.
(h) Paragraphs (1) and (2) do not apply to anything done under and in accordance with the terms of a license granted by the Minister under subparagraph (c).

(8) For the purposes of this Regulation, "the State" includes the territorial waters of the State and the exclusive economic zone of the State.

(9) For the avoidance of doubt, the Minister may develop threat response plans under Regulation 39 for the purposes of this Regulation and, generally, for the purposes of addressing the exclusion, eradication or control of species referred to in the Third Schedule and any other species that the Minister considers poses a threat to the habitats or species protected under these Regulations.

(10) Where the Minister considers that a species poses a threat to the objectives of the Birds and Habitats Directives, including the protection of European Sites, of habitats, and of species of flora and fauna, including birds, he or she may authorise the destruction by appropriate means including, where appropriate, by shooting, of any of the animals referred to in paragraph (1)(a), or listed in Part 2 of the Second Schedule.

(11) Where an animal that is of a species referred to in Part 2B of the Third Schedule, or that is a hybrid of such a species, is one of a herd that is being farmed for slaughter for commercial meat production, it shall not be an offence under this Regulation to transport the animal from one place of enclosure to another for farming purposes or to transport the animal for sale or for slaughter for commercial meat production.

(12) For the purposes of paragraph (11), "slaughter" does not include the killing of an animal during or following hunting.

Table 1 List of Invasive Plants in 2011 Regs

Common Name	***Scientific Name***	**Geographical application**
American skunk-cabbage	*Lysichiton americanus*	Throughout the State
A red alga	*Grateloupia doryphora*	Throughout the State
Brazilian giant-rhubarb	*Gunnera manicata*	Throughout the State
Broad-leaved rush	*Juncus planifolius*	Throughout the State
Cape pondweed	*Aponogeton distachyos*	Throughout the State
Cord-grasses	*Spartina* (all species and hybrids)	Throughout the State
Curly waterweed	*Lagarosiphon major*	Throughout the State
Dwarf eel-grass	*Zostera japonica*	Throughout the State
Fanwort	*Cabomba caroliniana*	Throughout the State
Floating pennywort	*Hydrocotyle ranunculoides*	Throughout the State
Fringed water-lily	*Nymphoides peltata*	Throughout the State
Giant hogweed	*Heracleum mantegazzianum*	Throughout the State
Giant knotweed	*Fallopia sachalinensis*	Throughout the State
Giant-rhubarb	*Gunnera tinctoria*	Throughout the State
Giant salvinia	*Salvinia molesta*	Throughout the State
Himalayan balsam	*Impatiens glandulifera*	Throughout the State
Himalayan knotweed	*Persicaria wallichii*	Throughout the State
Hottentot-fig	*Carpobrotus edulis*	Throughout the State
Japanese knotweed	*Fallopia japonica*	Throughout the State
Large-flowered waterweed	*Egeria densa*	Throughout the State
Mile-a-minute weed	*Persicaria perfoliata*	Throughout the State
New Zealand pigmyweed	*Crassula helmsii*	Throughout the State
Parrots feather	*Myriophyllum aquaticum*	Throughout the State
Rhododendron	*Rhododendron ponticum*	Throughout the State
Salmonberry	*Rubus spectabilis*	Throughout the State
Sea-buckthorn	*Hippophae rhamnoides*	Throughout the State
Spanish bluebell	*Hyacinthoides hispanica*	Throughout the State
Three-cornered leek	*Allium triquetrum*	Throughout the State

Wakame	*Undaria pinnatifida*	Throughout the State
Water chestnut	*Trapa natans*	Throughout the State
Water fern	*Azolla filiculoides*	Throughout the State
Water lettuce	*Pistia stratiotes*	Throughout the State
Water-primrose	*Ludwigia* (all species)	Throughout the State
Waterweeds	*Elodea* (all species)	Throughout the State
Wireweed	*Sargassum muticum*	Throughout the State

Table 2 Nature of Vector Material listed in 2011 Regulations

Vector material	**Species referred to**	**Geographical application**
Blue mussel (*Mytilus edulis*) seed for aquaculture taken from places (including places outside the State) where there are established populations of the slipper limpet (*Crepidula fornicata*) or from places within 50 km. of such places	Mussel (*Mytilus edulis)* Slipper limpet (*Crepidula fornicata*)	Throughout the State
Soil or spoil taken from places infested with Japanese knotweed (*Fallopia japonica),* giant knotweed (*Fallopia sachalinensis)* or their hybrid Bohemian knotweed (*Fallopia x bohemica*)	Japanese knotweed (*Fallopia japonica*) Giant knotweed (*Fallopia sachalinensis*) Bohemian knotweed(*Fallopia x bohemica*)	Throughout the State