

Invasive Alien Plant Species Management and Control Plan (species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) regulations 2011 (as amended), as regards proposed works/development at Oldcastle, Co. Meath
July 2023



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Document:	Invasive Alien Plant Species Survey, Management and Control Plan (species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) regulations 2011 (as amended), as regards proposed development at Oldcastle, Co. Meath
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Executive Summary

Meath County Council are in the initial phase of drawing up a design for a small brown field site (app 5,000 m²) to transform it into a Play Park for mixed uses to include items such as those listed below and in line with the concept plan in Image No.2 – Concept Plan.

- *Outdoor picnic area*
- *Outdoor exercise area*
- *Toddlers play area*
- *Basketball court*
- *Table tennis*
- *Handball wall*
- *Perimeter pathway*
- *Planting and landscaping*

The primary purposes of the Alien Invasive Plant Species Management and Control Plan, therefore, are:

- *To assess the survey area for the presence of Third Schedule species;*
- *To map the presence of any such species within the survey area;*
- *To outline measures for eradication or control of such populations as may be found present;*
- *To prevent the exportation from site of any propagules of such species; and*
- *To prevent importation to site of any propagules of such species*

There was no evidence for any plant species listed in Part (1) of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 (as amended).

This document comprises an Alien Invasive Plant Species Management and Control Plan designed to prevent the importation of such species to site. It is the responsibility of Meath Co Council to ensure the implementation of this Management and Control Plan in full.

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1 Background Information

1.1 FERS Ltd Company Background

Forest, Environmental Research and Services have been conducting ecological surveys and research since the company's formation in 2005 by Dr Patrick Moran and Dr Kevin Black. Dr Moran, the principal ecologist with FERS, holds a 1st class honours degree in Environmental Biology (UCD), a Ph.D. in Ecology (UCD), a Diploma in EIA and SEA management (UCD) an Advanced Diploma in Environmental and Planning Law (King's Inn) and a M.Sc. in Geographical Information Systems and Remote Sensing (University of Ulster, Coleraine). Patrick has in excess of 20 years of experience in carrying out ecological surveys on both an academic and a professional basis. Dr Emma Reeves, senior ecologist with FERS holds a 1st class honours degree in Botany, and a Ph.D. in Botany. Emma has in excess of 15 years of experience in undertaking ecological surveys on an academic and professional basis. Ciarán Byrne, a senior ecologist with FERS holds a 1st class honours degree in Environmental Management (DIT) and a M.Sc. in Applied Science/Ecological Assessment (UCC). Ciarán has in excess of 10 years in undertaking ecological surveys on both an academic and a professional basis.

FERS client list includes National Parks and Wildlife Service, An Bord Pleanála, various County Councils, the Heritage Council, Teagasc, University College Dublin, the Environmental Protection Agency, Inland Waterways Association of Ireland, the Department of Agriculture, the Office of Public Works and Coillte in addition to numerous private individuals and companies. FERS Ltd. FERS has a large body of experience working with Alien Invasive Plant Species, including the preparation of Alien Invasive Species Management and Control Plans.

1.2 Description of proposed project

Meath County Council are in the initial phase of creating and implementing a design for an existing brown-field area to repurpose the area as a Play Park for mixed uses to include items such as those listed below and in line with the concept plan in Image No.2 – Concept Plan.

- a. Outdoor picnic area;
- b. Outdoor exercise area;
- c. Toddlers play area;
- d. Basketball court;
- e. Table tennis;
- f. Handball wall;
- g. Perimeter pathway; and
- h. Planting and landscaping.

The proposed development is in broad agreement with the Oldcastle Public Realm Plan. The approximate location of the proposed works is illustrated in Figure 1, Figure 2, Figure 3, Figure 4 and Figure 5 **Error! Reference source not found.**. The conceptual layout of the works is illustrated in Figure 6.

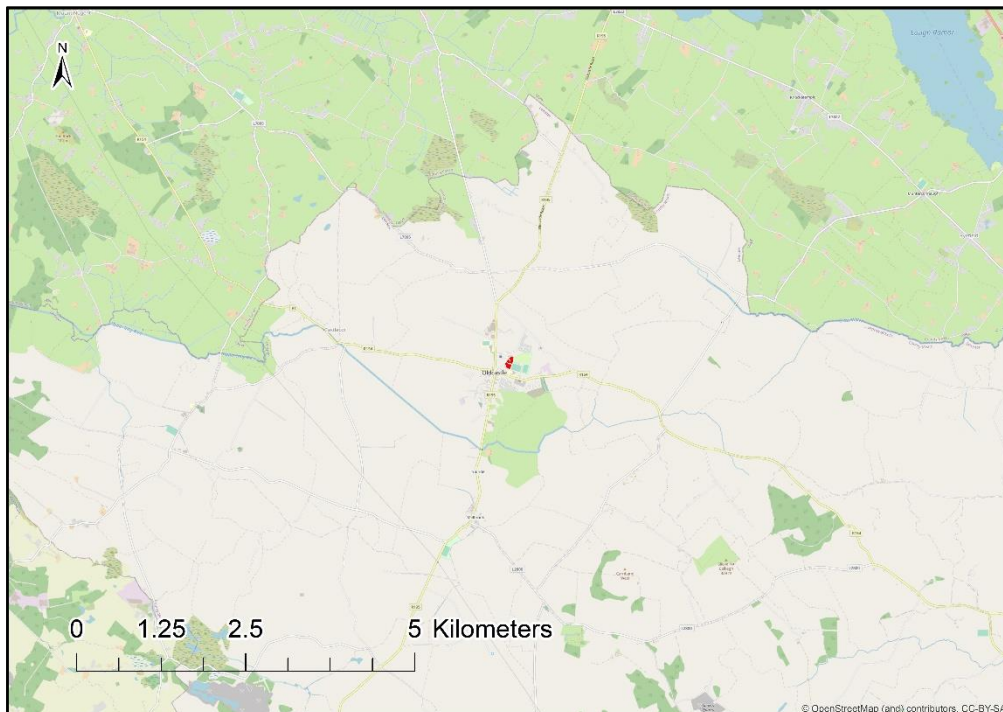


Figure 1: Approximate location of proposed works (1:50,000)

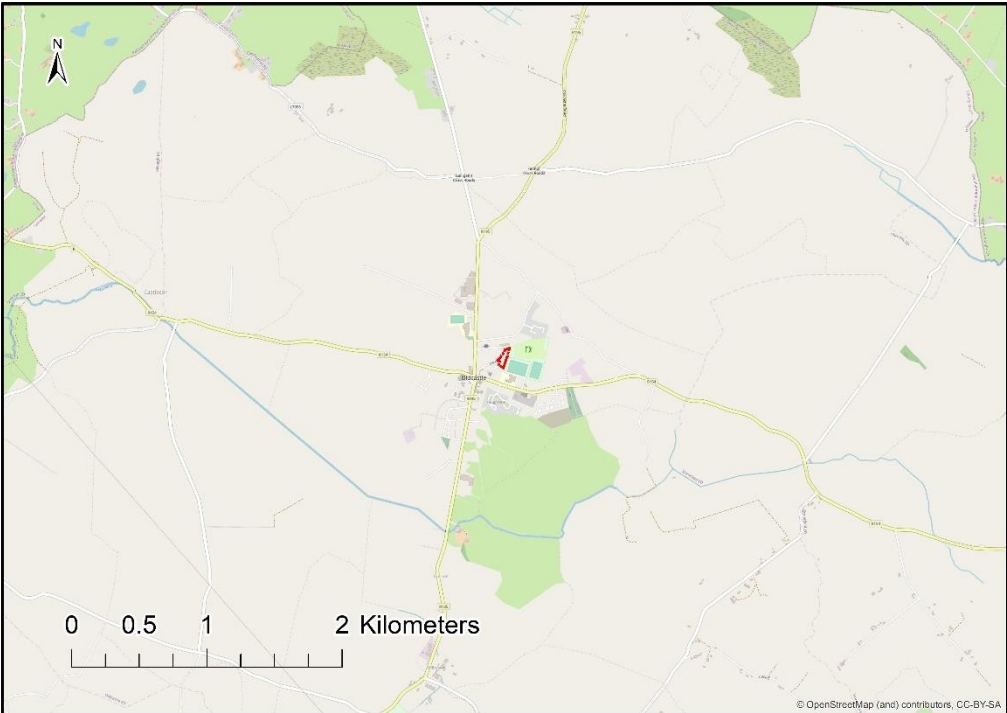


Figure 2: Approximate location of proposed works (1:25,000)

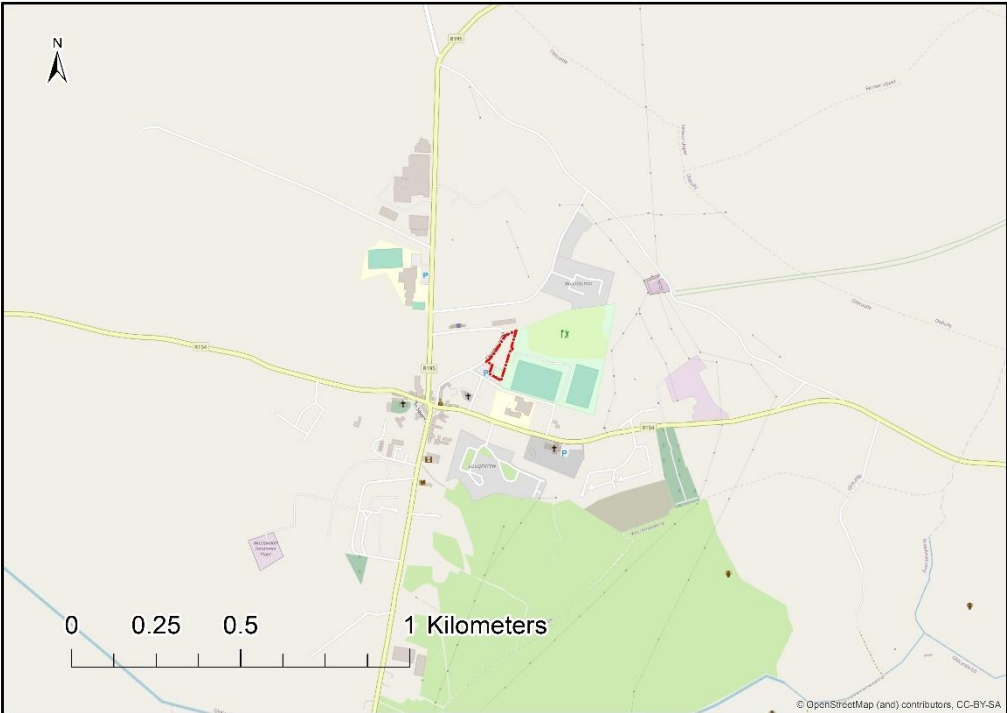


Figure 3: Approximate location of proposed works (1:10,000)



Figure 4: Approximate location of proposed works (1:2,500)



Figure 5: Extent of proposed works site area overlain on satellite imagery (1:1,000)



Figure 6: Option 2 Plan Layout

1.3 Background – Alien Invasive Plant Species

The human introduction of alien plant species into ecosystems (intentionally or unintentionally) is historically a common-place occurrence. The vast majority of these alien plant species, when introduced into a foreign ecosystem for which they are not adapted, will die without specific care. In a small number of cases, however, these plants can come to dominate the ecosystem into which they have been introduced and become “Invasive”. There is presently a great deal of concern regarding the potential for invasive plant species to threaten the species composition, community structure, ecosystem services provided and overall biodiversity of native Irish habitats. Invasive species can change the character and/or condition of an ecosystem over an extensive area through several mechanisms, depending on the species of plant and the nature of the habitat.

Forest, Environmental Research and Services (FERS) Ltd. were commissioned by Meath Co. Council to undertake a survey of invasive plant species on site and to prepare an Alien Invasive Species Management and Control Plan for the site. The plan is informed by desk and field studies and identifies invasive plant species listed in Part 1 of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 (as amended) on site. The stages in this Alien Invasive Plant Species Management and Control Plan as outlined below are based on the recommendations described in TII (2020)¹:

- Phase 1: Carry out detailed site assessment and use results to prioritise risk management needs;
- Phase 2: Devise and management and control plan for implementation; and
- Phase 3: Monitoring - protection to prevent future infestations.

1.3.1 Legislation – Biodiversity and Invasive Species

1.3.1.1 Irish Law – *The Wildlife (Amendment) Act 2000*

The primary domestic legislation providing for the protection of wildlife in general, and the control of some activities adversely impacting upon wildlife is the Wildlife Act of 1976. The aims of the wildlife act according to the National Parks and Wildlife Service are “... *to provide for the protection and conservation of wild fauna and flora, to conserve a representative sample of important ecosystems, to*

¹ TII (2020a). The Management of Invasive Alien Plant Species on National Roads – Standard. Publication number: GE-ENV-01104. Transport Infrastructure Ireland.

TII (2020b). The Management of Invasive Alien Plant Species on National Roads – Technical Guidance. Publication number: GE-ENV-01105. Transport Infrastructure Ireland.

provide for the development and protection of game resources and to regulate their exploitation, and to provide the services necessary to accomplish such aims.” All bird species are protected under the act. The Wildlife (Amendment) Act of 2000 amended the original Act to improve the effectiveness of the Act to achieve its aims. The main objectives of the Wildlife (Amendment) Act, 2000 are to:

- Provide a mechanism to give statutory protection to NHAs;
- Provide for statutory protection for important geological and geomorphological sites, including fossil sites by designation as NHAs;
- Improve some existing measures, and introduce new ones, to enhance the conservation of wildlife species and their habitats;
- Enhance a number of existing controls in respect of hunting, which are designed to serve the interests of wildlife conservation;
- Broaden the scope of the Wildlife Acts to include most species, including the majority of fish and aquatic invertebrate species which were excluded from the 1976 Act;
- Introduce new provisions to enable regulation of the business of commercial shoot operators;
- Ensure or strengthen compliance with international agreements and, in particular, enable Ireland to ratify the Convention on International Trade in Endangered Species (CITES) and the African-Eurasian Migratory Waterbirds Agreement (AEWA).
- Increase substantially the level of fines for contravention of the Wildlife Acts and to allow for the imposition of prison sentences;
- Provide mechanisms to allow the Minister to act independently of forestry legislation, for example, in relation to the acquisition of land by agreement;
- Strengthen the provisions relating to the cutting of hedgerows during the critical bird-nesting period and include a requirement that hedgerows may only be cut during that period by public bodies, including local authorities, for reasons of public health or safety;
- Strengthen the protective regime for Special Areas of Conservation (SACs) by removing any doubt that protection will in all cases apply from the time of notification of proposed sites;
- Give specific statutory recognition to the Minister's responsibilities in regard to promoting the conservation of biological diversity, in light of Ireland's commitment to the UN Convention on Biological Diversity.

1.3.1.2 *European Law*

1.3.1.2.1 *Habitats Directive*

The Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna) is the main legislative instrument for the protection and conservation of biodiversity within the European Union and lists certain habitats and species that must be protected

within wildlife conservation areas, considered to be important at a European as well as at a national level. A “Special Conservation Area” or SAC is a designation under the Habitats Directive. The Habitats Directive sets out the protocol for the protection and management of SACs.

1.3.1.2.2 Birds Directive

The Birds Directive (Council Directive 2009/147/EC on the Conservation of Wild Birds) provides for a network of sites in all member states to protect birds at their breeding, feeding, roosting and wintering areas. This directive identifies species that are rare, in danger of extinction or vulnerable to changes in habitat and which need protection (Annex I species). A Special Protection Area or SPA is a designation under The Birds Directive.

1.3.1.2.3 European Communities (Birds and Natural Habitats) Regulations (As amended 2015)

With the introduction of the Birds Directive and the Habitats Directive, came the obligation to establish the Natura 2000 network. In 1997, the Habitats Directive was transposed into Irish national law. The relevant Regulations, the European Communities (Natural Habitats) Regulations 1997, SI 94/1997 represent a fundamental shift in nature conservation policy and law. The European Communities (Birds and Natural Habitats) Regulations 2011 consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010, as well as addressing transposition failures identified in judgments of the Court of Justice of the European Union (CJEU). The European Communities (Birds and Natural Habitats) Regulations 2011 were amended in 2015 (S.I. No. 355 of 2015).

1.3.2 Species of plant listed in Part (1) of the Third Schedule

There are more than 30 species listed in Part (1) of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011, which states (49) “...Save in accordance with a licence 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...” The species listed on Part (1) the Third Schedule are listed in any time including, where he or she considers it warranted, during the period from 1 March to 31 August.

The species and vectors present within the Third Schedule are presented in Table 1 and Table 2 respectively.

Table 1.Regulation 49 of the Regulations of 2011 was amended by inserting the following paragraphs after paragraph (12),

- (13) Where the Minister considers—
- a) that a species of flora or type of vegetation poses a threat to any of the objectives of the Birds and Habitats Directives, or
 - b) that a population of a species of flora hosts or is likely to host a pathogen, disease, pest or parasite that poses or is likely to pose a threat to that species or to other species of flora and hence to securing compliance with the requirements of the Birds and Habitats Directives, and that the destruction of that population is a practical, appropriate and proportionate measure to reduce that threat,

the Minister may, notwithstanding anything contained in Section 40 of the Wildlife Act 1976, grant a licence for the destruction, by such means as the Minister may specify, of vegetation comprising or containing that species at any time including, where he or she considers it warranted, during the period from 1 March to 31 August.

The species and vectors present within the Third Schedule are presented in Table 1 and Table 2 respectively.

Table 1: List of plant species appearing on the Third Schedule

Common Name	Latin Name	Associated with freshwater habitats
American skunk-cabbage	<i>Lysichiton americanus</i>	Yes
Red alga	<i>Grateloupia doryphora</i>	No
Brazilian giant-rhubarb	<i>Gunnera manicata</i>	Yes
Broad-leaved rush	<i>Juncus planifolius</i>	Yes
Cape pondweed	<i>Aponogeton distachyos</i>	Yes
Cord-grasses	<i>Spartina (all species hybrids)</i>	No
Curly waterweed	<i>Lagarosiphon major</i>	Yes
Dwarf eel-grass	<i>Zostera japonica</i>	No
Fanwort	<i>Cabomba caroliniana</i>	Yes
Floating pennywort	<i>Hydrocotyle ranunculoides</i>	Yes
Fringed water-lily	<i>Nymphoides peltata</i>	Yes
Giant hogweed	<i>Heracleum mantegazzianum</i>	Yes
Giant knotweed	<i>Fallopia sachalinensis</i>	Yes
Giant-rhubarb	<i>Gunnera tinctoria</i>	Yes
Giant salvinia	<i>Salvinia molesta</i>	Yes
Himalayan balsam	<i>Impatiens glandulifera</i>	Yes
Himalayan knotweed	<i>Persicaria wallichii</i>	Yes
Hottentot-fig	<i>Carpobrotus edulis</i>	No
Japanese knotweed	<i>Fallopia japonica</i>	Yes
Large-flowered waterweed	<i>Egeria densa</i>	Yes
Mile-a-minute weed	<i>Persicaria perfoliata</i>	Yes
New Zealand pigmyweed	<i>Crassula helmsii</i>	Yes
Parrot's feather	<i>Myriophyllum aquaticum</i>	Yes
Rhododendron	<i>Rhododendron ponticum</i>	No
Salmonberry	<i>Rubus spectabilis</i>	Yes
Sea-buckthorn	<i>Hippophae rhamnoides</i>	No
Spanish bluebell	<i>Hyacinthoides hispanica</i>	No
Three-cornered leek	<i>Allium triquetrum</i>	No
Wakame	<i>Undaria pinnatifida</i>	No
Water chestnut	<i>Trapa natans</i>	Yes
Water fern	<i>Azolla filiculoides</i>	Yes
Water-primrose	<i>Ludwigia (all species)</i>	Yes

Common Name	Latin Name	Associated with freshwater habitats
Waterweeds	<i>Eloдея (all species except E. canadensis)</i>	Yes
Wireweed	<i>Sargassum muticum</i>	Marine/transition

Table 2: List of plant vector materials appearing on the Third Schedule Part 3

First column	Second column	Third Column
Vector material	Species referred to	Geographical application
Soil or spoil taken from places infested with Japanese knotweed (<i>Fallopia japonica</i>), giant knotweed (<i>Fallopia sachalinensis</i>) or their hybrid Bohemian knotweed (<i>Fallopia x bohemica</i>)	Japanese knotweed (<i>Fallopia japonica</i>) Giant knotweed (<i>Fallopia sachalinensis</i>) Bohemian knotweed (<i>Fallopia x bohemica</i>)	Throughout the State

The majority of the species listed on Part (1) of the Third Schedule are particularly problematic within riparian habitats, with constant disturbance and the presence of a medium for spread. In the case of works/developments adjacent to water-courses, therefore, there is a particular threat posed by many of these plants. In the event of the presence of a Source-Pathway-Receptor linkage between a proposed development and a Natura 2000 site, in particular a riparian site, a very significant threat is posed to the ecological integrity of that site in the event of the spread of an Alien Invasive Plant Species to that site.

1.3.2.1 EU Regulation 1143/2014 on Invasive Alien Species

Regulation (EU) 1143/2014 on invasive alien species (the IAS Regulation) entered into force on 1st of January 2015, fulfilling Action 16 of Target 5 of the EU 2020 Biodiversity Strategy, as well as Aichi Target 9 of the Strategic Plan for Biodiversity 2011-2020 under the Convention of Biological Diversity. The IAS Regulation provides for a set of measures to be taken across the European Union in relation to Invasive Alien Species of Union concern (the Union list). Member states have an obligation to take action on all species included on the list through a range of measures:

1. **Prevention:** a number of robust measures aimed at preventing the intentional or unintentional introduction of IAS of Union concern into the EU.
2. **Early detection and rapid eradication:** Member States must put in place a surveillance system to detect the presence of IAS of Union concern as early as possible and take rapid eradication measures to prevent them from establishing.
3. **Management:** some IAS of Union concern are already established in certain Member States. Concerted management action is needed to prevent them from spreading any further and to minimize the harm they cause.

In July 2022, 22 new species were added to the Union list, bringing the total number of species on the list to 88. Some of these species are absent or very rare in Europe but their introduction and proliferation could cause significant environmental damage. Only one of these additions, Himalayan knotweed (*Koenigia polystachya*) is currently present in Ireland. The 41 plant species listed on the Union list are detailed below in Table 3.

Table 3: EU Regulation 1143/2014 invasive alien plant species of union concern.

Common name	Scientific name	Entry into force
Alligator weed	<i>Alternanthera philoxeroides</i>	02-Aug-17
American skunk cabbage	<i>Lysichiton americanus</i>	03-Aug-16
An alga	<i>Rugulopteryx okamurae</i>	02-Aug-22
Asiatic tearthumb	<i>Persicaria perfoliata</i>	03-Aug-16
Balloon vine	<i>Cardiospermum grandiflorum</i>	15-Aug-19
Broadleaf watermilfoil	<i>Myriophyllum heterophyllum</i>	02-Aug-17
Broomsedge bluestem	<i>Andropogon virginicus</i>	15-Aug-19
Chilean rhubarb	<i>Gunnera tinctoria</i>	02-Aug-17
Chinese bushclover	<i>Lespedeza cuneata (Lespedeza juncea var. sericea)</i>	15-Aug-19
Chinese tallow	<i>Triadica sebifera (Sapium sebiferum)</i>	15-Aug-19
Common milkweed	<i>Asclepias syriaca</i>	02-Aug-17
Crimson fountaingrass	<i>Pennisetum setaceum</i>	02-Aug-17
Curly waterweed	<i>Lagarosiphon major</i>	03-Aug-16
Eastern baccharis	<i>Baccharis halimifolia</i>	03-Aug-16
Fanwort	<i>Cabomba caroliniana</i>	03-Aug-16
Floating pennywort	<i>Hydrocotyle ranunculoides</i>	03-Aug-16
Floating primrose-willow	<i>Ludwigia peploides</i>	03-Aug-16
Giant hogweed	<i>Heracleum mantegazzianum</i>	02-Aug-17
Golden wreath wattle	<i>Acacia saligna (Acacia cyanophylla)</i>	15-Aug-19
Himalayan balsam	<i>Impatiens glandulifera</i>	02-Aug-17
Himalayan knotweed	<i>Koenigia polystachya</i>	02-Aug-22
Japanese hop	<i>Humulus scandens</i>	15-Aug-19
Japanese stiltgrass	<i>Microstegium vimineum</i>	02-Aug-17
Kudzu vine	<i>Pueraria lobata</i>	03-Aug-16
Mesquite	<i>Prosopis juliflora</i>	15-Aug-19
Needlebush	<i>Hakea sericea</i>	02-Aug-22
Nuttall's waterweed	<i>Elodea nuttallii</i>	02-Aug-17
Oriental bittersweet	<i>Celastrus orbiculatus</i>	02-Aug-27
Parrot's feather	<i>Myriophyllum aquaticum</i>	03-Aug-16
Perennial veldt grass	<i>Ehrharta calycina</i>	15-Aug-19
Persian hogweed	<i>Heracleum persicum</i>	03-Aug-16
Purple pampas grass	<i>Cortaderia jubata</i>	15-Aug-19
Salvinia moss	<i>Salvinia molesta (Salvinia adnata)</i>	15-Aug-19
Senegal tea plant	<i>Gymnocoronis spilanthoides</i>	15-Aug-19
Sosnowsky's hogweed	<i>Heracleum sosnowskyi</i>	03-Aug-16

Common name	Scientific name	Entry into force
Tree of heaven	<i>Ailanthus altissima</i>	15-Aug-19
Vine-like fern	<i>Lygodium japonicum</i>	15-Aug-19
Water hyacinth	<i>Eichhornia crassipes</i>	03-Aug-16
Water lettuce	<i>Pistia stratiotes</i>	02-Aug-24
Water-primrose	<i>Ludwigia grandiflora</i>	03-Aug-16
Whitetop weed	<i>Parthenium hysterophorus</i>	03-Aug-16

1.3.3 Stages in Alien Invasive Plant Species Management and Control Plan

The stages in this Alien Invasive Plant Species Management and Control Plan as outlined are based on the recommendations of the recent TII Publication:

- 1) Carry out detailed site assessment and use results to prioritise risk management needs;
- 2) Devise management and control plan for implementation; and
- 3) Monitoring – assess success of mitigation measures and protection to prevent future infestations.

2 PHASE I - detailed site assessment and prioritisation of risk management needs

2.1 Desk study

The desk study undertaken comprised querying the National Biodiversity Data Centre Database (www.biodiversityireland.ie) for records of Alien Invasive Plant Species recorded within the 1 km square in which the proposed development is located. The proposed development has the potential to introduce and/or spread propagules of Alien Invasive Plant Species if such species are present in the vicinity. The database was accessed on the 3rd of May 2023. The location of the 1 km square queried is indicated in Figure 7 **Error! Reference source not found.**. No Alien Invasive Plant Species (Third Schedule) are recorded within this 1 km square.

The NBDC database was accessed on 03/05/23 to query records occurring within the vicinity of the proposed works(1 km square, N5580 - see Figure 7). The species of conservation concern as recorded within this 1 km square are illustrated in Table 4. As indicated by the habitats present, the numbers of species of conservation concern present is rather limited – it is likely that several species of bat do occur but have not been recorded as of yet.



Figure 7: Location of polygon queried (National Biodiversity Data Centre)

Table 4: Species of conservation concern recorded in the vicinity of the proposed development site

Scientific Name	Common Name	Date of last record
<i>Sturnus vulgaris</i>	Common Starling	04/07/2019
<i>Apus apus</i>	Common Swift	04/07/2019
<i>Martes martes</i>	Pine Marten	31/12/2007

There is a rather limited number of records, which likely represents the urban habitats present as well as a low record return for the 1km square. Although no species listed in Part (1) of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (as Amended) are recorded within the 1 km square in which the development is proposed.

There are several species, given the nature of the proposed development (disturbance of and possible importation of material to site) that may be of concern that do occur in Meath. These species have the potential to spread very aggressively, establish sizeable populations very quickly, and are capable of inflicting a high degree of ecological damage within short spaces of time. A brief outline of these species is given as follows.

2.1.1 Three-cornered Garlic

According to Webb's Flora² This spring-flowering bulb (typically flowering from April to June) is described as "...Stem sharply 3-angled, about 30 cm high. Leaves linear, keeled, 5 – 10 m wide, bright green. Flowers nodding in small, 1-sided umbel; perianth bell-shaped, white with as green line along each segment. Stamens without appendages. Hedges and waste places, mainly in the south and east; local but abundant in some districts...". This plant is thought to have introduced into Ireland some three-hundred years ago and it has become naturalised in many counties. The plant fruits abundantly and the seeds are dispersed by ants; it also reproduces vegetatively by daughter bulbs and bulblets that are dispersed with soil movement³. The This plant forms very dense colonies that can outcompete native spring flowers like primroses and violets impacting on biodiversity. This species is particularly problematic as an alien invasive species in Australia.

² Parnell J and Curtis T (2012). Webb's An Irish Flora (8th edition). Cork University Press, Cork, Ireland

³ Terahncian P, Adair R, Van T, Morrison P, Williams H and Lawrie A (2020). Biological control of the noxious weed Angled Onion (*Allium triquetrum*) thwarted by endophytic bacteria in Victoria, Australia. *Australasian Plant Pathology*, **49**, pp 373 - 392



Figure 8: Three-cornered Garlic

2.1.2 Japanese Knotweed

This plant is a rhizomatous perennial, capable of reaching 2m in height. This plant spreads exclusively by vegetative means, spreading very aggressively under disturbed conditions. The plant is capable of forming extensive monoculture stands. There is a negative impact on ecosystem function and biodiversity through a number of mechanisms – primarily through the shading-out of native plants due to the rapidity with which large stands of the plant can form. In addition, this plant has a deleterious effect on the banks of waterways owing to the fact that during the winter, when *F. japonica* dies back, there is little or no vegetation growing underneath, and hence nothing to prevent erosion of the bank. This species is well established in Ireland and is rapidly spreading throughout the country, especially by roadsides and along watercourses.



Figure 9: Established population of Japanese Knotweed occurring at a quarrying operation in Wexford

2.1.3 Himalayan Balsam

Impatiens glandulifera is one of the tallest annuals occurring in Europe, growing up to 150 cm. It is a native of the Himalayas and has rapidly become one of the most problematic of invasive species in Europe, particularly along watercourses. The dominance of large stands of *I. glandulifera* along watercourses causes problems for stream management in addition to the negative impact on native flora due to the formation of large monocultural stands. The massive production of nectar to induce pollinators, in addition to the “explosive” means by which seeds are spread (pods explode on contact, hurling seeds away from the parent plant) contribute to the ability of this plant to out-compete native species. This plant is rapidly becoming a serious threat to biodiversity along Ireland’s waterways.



Figure 10: Himalayan Balsam

2.1.4 *Heracleum mantegazzianum*, Giant Hogweed.

Giant Hogweed, as its name suggests, can reach heights of 5m. This perennial reproduces exclusively by seed, but can produce up to 100,000 seeds per individual, with up to 90% germination rate. In addition to this, this plant is capable of self-fertilisation, which means that one plant is capable of resulting in the invasion of a new habitat. Like *F. japonica*, and *I. glandulifera*, it is the tendency of Giant Hogweed to grow very tall very quickly, forming a monospecific stand that results in the negative impact of this species on native biodiversity. It is, however, the phototoxic sap of this species, and the increasing number of human injuries associated with this sap that has made *H. mantegazzianum* one of the most problematic alien invasive plant species throughout Europe.



Figure 11: Giant Hogweed occurring at a location in Meath

2.2 Field survey

On May 10th 2023, a site visit was undertaken by Dr Emma Reeves in order to assess if any Third Schedule plant species occur within the proposed development area during the optimal survey window. There was no evidence of any Third Schedule Plant species on or adjacent to the site.



Figure 12: Aerial view of proposed development site

3 PHASE II - Alien Invasive Plant Species Management and Control Plan

3.1 Background

A (desk and field) survey undertaken during the optimal survey window has identified that there are no species of plant listed on Part (1) of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 (as Amended) within the proposed works/development site.

3.2 Aims

Given that there was no evidence for any Third Schedule plant species within the survey area, the aim of the Alien Invasive Plant Species Management and Control Plan is:

- (1) To prevent the import of propagules of any species of plant listed on Part 1 of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 (as Amended) to the area.

Risk prioritisation and management options for invasives plant species are informed by impact status as outlined in Kelly et al (2013) and trends in the introduction of invasive alien species as outlined in O'Flynn et al (2014). The risk assessment undertaken in Kelly et al (2013) looked at 377 non-native species recorded in Ireland and 342 non-native species not known to be present in Ireland. Assessment and scoring criteria from Kelly et al (2013) are reproduced here for in Table 5 and Table 6. Species were assessed, scored and ranked into impact categories of high (score of ≥ 18), medium (score of 14-17) and low risk (score of 0-13).

Table 5: Assessment criteria and scoring system for species that have been recorded in Ireland and/or Northern Ireland (Recorded Species’) (reproduced from Kelly et al, 2013).

Factor	Assessment criteria	Maximum score
Invasion history	Does the species currently have a widespread recorded distribution on the island of Ireland?	3
	Is the species currently expanding its range on the island of Ireland?	2
	Is the species in its present range (including Ireland) known to be invasive i.e. to threaten species, habitats or ecosystems?	2
Species spread potential	Is there potential for this species to be spread intentionally or unintentionally across Ireland?	2
Availability of suitable habitats	How widespread are suitable habitats to allow establishment of the species?	2
Impact assessment	Where the species has become established has it impacted upon the conservation objectives for the area?	4
	Is the species poisonous, or does it pose a risk to plant and animal health?	2
	Is the species poisonous, or does it pose a risk to human health due to its parasites, pathogens or other intrinsic factor?	2
	Has the species directly or indirectly caused economic losses in Ireland or elsewhere?	3
Management	Are there acceptable and effective control method/s that can be applied? Assessors are asked to consider control methods for similar or related species in their assessment.	3

Table 6: Assessment criteria and scoring system for species that have not been recorded in Ireland and/or Northern Ireland (‘Potential Species’) (reproduced from Kelly et al, 2013).

Factor	Assessment criteria	Maximum score
Identification of nearest donor region	In which of the following donor regions is the nearest population to the island of Ireland?	3
Occurrence in similar climate	Does the species occur in a similar climatic region to the island of Ireland? (click appropriate map below)	2
Pathway of introduction	Is there a realistic pathway for unintentional introduction to Ireland?	2
	Is there potential for this species to be introduced intentionally?	2
Suitability of habitats	Are habitats in Ireland and/or Northern Ireland suitable to allow establishment of the species?	2
Impact assessment	Where the species has become established has it impacted upon the conservation objectives for the area?	4
	Is the species poisonous, or does it pose a risk to plant and animal health?	2
	Is the species poisonous, or does it pose a risk to human health due to its parasites or pathogens or other intrinsic factor?	2
	Has the species directly or indirectly caused economic losses at its home range or where it has become invasive?	2
Management	Are there acceptable and effective control method/s that can be applied?	3

3.3 Treatment of species on site

Botanical survey of the proposed development site have found no evidence of any species of plant listed on Part 1 of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 (as Amended).

3.4 Implementation of Strict Biosecurity Measures

Botanical survey of the proposed development site found no evidence of any Third Schedule invasive plant on site or adjacent habitats. However, numerous Third Schedule species are present at other sites in Meath under the control of Meath Co. Council. As such, the implementation of biosecurity measures is necessary to prevent the following:

- Importation of propagules of Third Schedule plant species to the site.

The importation of the propagules of any species of Third Schedule species must be prevented. The primary sources of the spread of propagules of Alien Invasive Plant Species are:

- Importation of contaminated material; and
- Importation of propagules on wheels/body of vehicles moving between sites.

Central to the successful implementation of the management and control plan is that staff and contractors working on site are competent in the identification of all stages of Third Schedule plant species recorded on site. Online identification guides are available at:

<https://invasives.ie/resources/identification-guides/>.

To minimise the risk of spread, export and import of Third Schedule invasive plant species staff should be instructed on basic biosecurity protocols regarding the following:

- All vehicles, equipment, footwear, etc. should be free of propagules of Third Schedule invasives before entering the site;
- Any materials (soil, aggregate, etc.) imported to the site must have a written guarantee that they are free from any propagules of Third Schedule invasives; and
- Any vehicles, machinery, etc. working on site must arrive at the site with a written guarantee that they are free from any propagules of Third Schedule invasives.

4 PHASE III - Monitoring

The proposed development area should be subject to a monitoring program post works, with the site being surveyed for the presence of any Alien Invasive Plant Species during the optimal ecological window in May and again in August post completion of works

5 Conclusions of the Invasive Species Management and Control Plan

The risks regarding the facilitation of the spread or dispersal of potential propagules of Alien Invasive Plant Species to/from the proposed development site have been considered in this Alien Invasive Plant Species Management and Control Plan.

The risks regarding the facilitation of the import of potential propagules of Alien Invasive Plant Species to the proposed development site have been considered in this Alien Invasive Plant Species Management and Control Plan.

Having implemented the measures as outlined in this report, the risks regarding the spread or dispersal of species listed on Part (1) of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011) associated with the proposed development will be reduced to negligible levels.

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