Appendix 8.5
Invasive Species Management Plan

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1. INTRODUCTION

This document comprises project-specific Invasive Species Management Plan (ISMP) for the proposed West Clare Greenway Section 1: Kilrush to Kilkee (hereafter referred to as "the proposed development") and has been developed in accordance with the TII Guidelines for *The Management of Invasive Alien Plant Species on National Roads – Standard* (TII, 2020a) and *The Management of Invasive Alien Plant Species on National Roads – Technical Guidance* (TII, 2020b).

The ISMP outlines the procedures for the delivery of environmental mitigation measures and for addressing environmental issues specific to invasive species that can arise during the construction phase of the proposed development. This document serves to assist the Contractor in preventing, managing, and/or minimising significant environmental impacts relating to Invasive Species.

1.1 Background

Ecological walkover surveys were undertaken along the proposed development at various dates between September 2021 and 2022 and July 2024. During the survey, Invasive Alien Plant Species (IAPS) were identified along the proposed development. In the absence of appropriate management, there is a significant risk that IAPS will continue to spread, either independently of or assisted by construction or operational activities associated with the proposed development.

The continued presence of IAPS along the proposed development or the spread of such species to, from or along the proposed development poses a significant threat to biodiversity. Furthermore, the introduction or spread of invasive species, particularly IAPS listed on the Third Schedule to the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended) ("the Habitats Regulations"), poses a risk to the proposed development itself, as, in the absence of appropriate preventative measures, any such introduction or spread would constitute an offence under Section 49 of the Habitats Regulations.

The Clare County Development Plan 2023-2029 (Clare County Council, 2023) outlines how development should proceed in Clare, ensuring environmental sustainability and the protection of biodiversity in the county The following Policy is relevant to invasive species:

CDP15.12: It is an objective of Clare County Council:

(a) To protect and promote the sustainable management of the natural heritage, flora and fauna of the County both within protected areas and in the general landscape through the promotion of biodiversity, the conservation of natural habitats, the enhancement of new and existing habitats, and through the integration of Green Infrastructure (GI), Blue Infrastructure and ecosystem services including landscape, heritage, biodiversity and management of invasive and alien species into the Development Plan.

CDP15.29: It is an objective of Clare County Council:

(a) To raise awareness of the threat of alien invasive species and how they can spread, and take all necessary steps to prevent the spread of non-native invasive species and noxious weeds in the Plan area, including requiring landowners, developers and boat operators to adhere to best practice guidance in relation to their control;
(b) To require all development proposals to address the presence of invasive alien species on the proposed development site and to require an Invasive Species Management Plan where such species are present;
(c) To carry out surveys of invasive species across the County;

(d) To implement the requirements of EU Regulations 1143/2014 on the Prevention and Management of the Introduction and Spread of Invasive Alien Species and to manage invasive hydrological connectivity issues to European Sites to prevent the spread of invasive species to sensitive sites; and
(e) To facilitate the work of agencies addressing the issue of terrestrial and aquatic invasive alien species.

CDP17.10: It is an objective of Clare County Council:

To prepare improvement plans and design briefs for larger derelict areas incorporating an Invasive Alien Species Management Plan if deemed necessary.

In order to address and manage the risks associated with IAPS, ROD have prepared an Invasive Species Management Plan for the proposed development. This document comprises the Invasive Species Management Plan for the proposed development and was prepared by ROD on behalf on Clare County Council. The intention is that this will form the basis for the plan which will be adopted if consent for the proposed development is granted.

1.2 Location

The proposed development is located in County Clare, commencing in Kilkee town at the western end, travelling eastwards through Moyasta towards Kilrush town. The proposed development is approximately 15.2km long and will predominantly follow the route of the former West Clare Railway corridor. The proposed development will intersect a number of local roads along the route where crossings will be provided.

1.3 Evaluation of Risk

Prior to preparing this Invasive Species Management Plan, the risk of IAPS both within and in the surrounding area was assessed. This involved the following:

- A desk study to collect existing records of IAPS within 2km of the proposed development boundary.
- An IAPS survey of the site of the proposed development.
- An evaluation of the risk for allowing the spread of IAPS as an offence under the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended).
- An evaluation of the risk of IAPS to biodiversity.

1.4 Purpose of this Plan

The purpose of the Invasive Species Management Plan is:

- To prevent the spread of IAPS within and outside the proposed development boundary during the construction and operational phase.
- To provide clear instructions and a timeline for the monitoring and eradication of IAPS within the site.

2. METHODOLOGY

2.1 Desk Study

The purpose of the desk study was to review publicly available information and recent and historical records of IAPS within the footprint of the proposed development and the surrounding area. Records of IAPS within 2 km of the proposed development were obtained from the National Biodiversity Data Centre (NBDC) in April 2026.

As with all desk studies, the data considered was only as good as the data supplied by the recorders and recording schemes. The recording schemes provide disclaimers in relation to the quality and quantity of the data they provide, and these were considered when examining the outputs of the desk study.

2.2 Survey Methodology

The presence of invasive alien species was recorded as part of the habitat survey. The ecologists had particular regard for invasive species subject to restrictions under Regulation 49 of the Habitats Regulations. Other invasive species which can negatively impact biodiversity were also recorded. The distribution of recorded species was sketched on field maps and target notes were taken which detailed height, density, and any signs of previous management.

Standard survey methods (TII, 2020a, b) were followed. The most recent survey of the route was carried out in July 2024, which falls within the optimal time of year for botanical surveys (April to September).

3. RESULTS

3.1 Desk Study

Table 3.1 lists the invasive plant species listed on the Third Schedule of the Habitats Regulations recorded within the 2km grid squares of the proposed development, sourced from the National Biodiversity Data Centre (NBDC) in April 2026.

Table 3.1 Records of Third Schedule Invasive Alien Plant Species within the 2km grid squares encompassing the proposed development. Source: NBDC (2026).

Common name	Scientific name
Common Cord-grass	*Spartina anglica*
Giant Rhubarb	*Gunnera tinctoria*
Himalayan Knotweed	*Persicaria wallichi*
Japanese Knotweed	*Reynoutria japonica*
Rhododendron	*Rhododendron ponticum*
Three-cornered Garlic	*Allium triquetum*

3.2 Field Survey

During the field surveys, one species restricted under Regulation 49 of the Habitats Regulations, namely Japanese Knotweed (*Reynoutria japonica*), was recorded at various locations along the route of the proposed development. Japanese Knotweed was recorded primarily along the former railway line between Kilrush and Kilkee, with smaller infestations at the proposed trail head in Kilrush and outside the red line boundary in Kilkee. The location of Japanese Knotweed is presented on drawings in Appendix A to this report and detailed below in Table 3.2.

Table 3.2 Records of Third Schedule Invasive Alien Plant Species recorded during the field surveys (July 2024).

Reference	ITM X	ITM Y	Location	Description
1	*497796*	*654556*	Kilrush, former railway line adjacent to Kilrush Wastewater Treatment Plant.	3x3m stand in an area of scrub along a path.
2	*498685*	*654869*	Kilrush, former railway line to rear of houses between Merchant's Quay and Shankyle Road.	Two very large dense stands, 5x20m and 5x10m.
3	*498710*	*654880*		
4	*498829*	*654920*	Kilrush, two stands open green area between Merchant's Quay and Shankyle Road at the location of the proposed trail head.	Two small stands recorded in 2023 but had been treated and was absent in 2024 and 2026.
5	*498879*	*654925*		
6	*489048*	*659616*	Kilkee, on former railway line which meets Gurrane.	3x8m stand.
7	*489494*	*659428*	Kilkee, near Meadow View Court	5m long parallel to route, outside of red line boundary

3.2.1 Japanese Knotweed

3.2.1.1. Ecology and Distribution

Japanese Knotweed (*Reynoutria japonica*) is a member of the *Polygonaceae* family, which includes docks and rhubarb and is native to Japan and Northern China. This species has become widely distributed throughout Europe and was first recorded in Ireland in the wild in 1902 (Reynolds, 2002). Japanese Knotweed is a threat in open and streamside areas. It can spread rapidly to form dense stands, excluding native vegetation and reducing species diversity. Once stands become established, they are extremely persistent and difficult to remove. This plant has the ability to grow through tarmac and concrete (in some cases within dwellings). Failure to manage Japanese Knotweed on a development site may result in eventual structural damage.

3.2.1.2. Identification

The following provides a brief summary of the defining characteristics of Japanese Knotweed (TII, 2020b):

- It is a fast growing, robust, perennial plant that rapidly produces dense and extensive vegetation stands. In spring, the plant produces new shoots from rhizome buds on a dense underground crown. These shoots are green, tinged with red/purple and have distinctively rolled leaves; they can appear asparagus-like. As the shoots grow, they extend to produce upright, hollow, bamboo-like green stems, covered in red/purple speckles. The stems can grow to 3m high and achieve a diameter of 40mm in a single season.
- The leaves of the mature plant are bright green, heart-shaped, up to 170mm in length with a flattened (truncate) base and pointed tip, and are arranged in a characteristic zig-zag pattern (**Error! Reference source not found.**). Close examination reveals no or few hairs on the midrib or lateral veins on the underside of Japanese Knotweed leaves. Giant and Bohemian knotweeds have long and short hairs, respectively, on the veins on the underside of the leaves.
- In winter, following leaf die-back, the upright shoots turn deep red or straw-coloured and form characteristic clumps of hollow canes that can remain standing long into the following season
- The plant flowers between August and October, producing clusters of small creamy-white flowers from the leaf axils (point at which the leaf joins the stem). The flowers occasionally produce dark brown seeds within three-winged seed capsules
- The rhizomes or underground stems are thick (from 5–100mm diameter) and fleshy to woody. The bark of the rhizome is dark brown and the texture is leathery. The nodes along the rhizome are often enlarged and impart a knotty appearance to the rhizome. Small white roots commonly emerge from these nodes. Beneath the bark, the rhizome is bright orange or carrot-coloured. The rhizome system of large plant stands is extensive (extending 15–20m in length) and acts as a storage organ, allowing for rapid growth in spring.

Figure 3.1 Japanese Knotweed in winter recorded near Kilrush.

4. CONTROL AND MANAGEMENT PROCEDURES

The management measures described below are in accordance with the following guidance documents:

- CCC (2025) Clare County Biodiversity Action Plan. Clare County Council.
- CCC (2023) Clare County Development Plan 2023-2029. Clare County Council.
- Kelly, J., Maguire, C.M. and Cosgrove, P.J., Muir, R.A. (2015). Best Practice Management Guidelines Japanese knotweed Fallopia japonica. Prepared for NIEA and NPWS as part of Invasive Species Ireland.
- TII (2020a) The Management of Invasive Alien Plant Species on National Roads – Standard. Transport Infrastructure Ireland, Dublin.
- TII (2020b) The Management of Invasive Alien Plant Species on National Roads – Technical Guidance. Transport Infrastructure Ireland, Dublin.

4.1 General Control and Management Procedures

In order to minimise risk of introduction or spread of IAPS during construction, all works shall be executed in accordance with best practice for biosecurity in construction. It will be a condition of the Construction Contract for the construction of the proposed development that, prior to commencement, the successful Contractor shall prepare a detailed Biosecurity Protocol describing their proposed approach to ensuring that IAPS are not imported or spread during the construction of the proposed development. The Contractor's Biosecurity Protocol shall be in accordance with *The Management of Invasive Alien Plant Species on National Roads – Standard* (TII, 2020a) and *The Management of Invasive Alien Plant Species on National Roads – Technical Guidance* (TII, 2020b) and subject to approval by the Ecological Clerk of Works (ECoW) prior to its acceptance and implementation. The Biosecurity Protocol is a live document and will be updated by the Contractor as needed throughout the construction of the proposed development. It will be the duty of the successful Contractor to ensure that all sub-contractors fully adhere and implement the procedures and measures of the Biosecurity Protocol. The Biosecurity Protocol shall include, as a minimum, the following measures to prevent the spread of invasive species:

- All plant and equipment employed on the construction site (e.g. excavators) will be thoroughly cleaned down using a power washer unit prior to arrival on site to prevent the spread of IAPS.
- All washing must be undertaken in areas where there is no potential for the spread of IAPS.
- Any soil and topsoil required on the site will be sourced from a stock that has been screened for the presence of any IAPS and where it is confirmed that none are present.

The infestations within the works areas will be eradicated prior to commencement of construction. The measures outlined below shall be followed to assist in the eradication of these species from the site:

- A preconstruction invasive species survey will be carried out during the optimum surveys season in advance of construction.
- Areas of infestation will be isolated and signage indicating their presence will be erected in each area.
- No materials will be stored adjacent to invasive species areas.
- No movement of invasive species contaminated material will occur unless as part of the invasive species management plan.

- All personnel on the site will attend a 'toolbox talk' as part of the site induction. The toolbox talk will include the identification of invasive species.

4.2 Specific Control and Management Procedures

4.2.1 Japanese Knotweed within the works area

The above ground stems of Japanese Knotweed will be mapped in detail to inform future buffers and excavations. The boundary of the stands will be marked with pegs sprayed with a bright colour. An exclusion zone of 10m will be established around Japanese Knotweed stands and will be demarcated with hazard tape and warning signs around this so no workers or plant accidentally enter the exclusion zone. This exclusion zone will remain in place until the management of Japanese Knotweed is complete. No workers or plant may track through contaminated areas or exclusion zones to access other areas of the proposed development.

The Biosecurity Protocol for Japanese Knotweed management will follow best practice guidance. At the time of writing a process called 'Eraginate' is the best method available. The final plan will be dependent on the method statement written by the contractor. A detailed description of the Eraginate process is presented in Appendix B. The process involves a treatment with herbicide followed by excavation. The material is screened to remove canes, crowns and rhizomes. Once the screening is completed, the leftover soil can be re-used in the development below a 400mm clean cap if it is being used as a growing medium. It is recommended that the soil is reused in one location, to simplify future monitoring and treatment of any regrowth. The treated material does not have to be bunded or fenced off. The canes, crowns and rhizomes will be treated off-site at a licenced facility.

It is possible that given certain topographical and environmental constraints, the soil will not be screened at the location of the infestation. If this is the case and the material is screened off site, designated haul routes and a designated treatment area, along the cleaning areas, will be established.

A method statement will be in place to ensure that water quality is protected, and the Japanese Knotweed is not spread within or outside the proposed development area.

The original site of infestation and the location of treated soil will be monitored closely during the construction phase to ensure that any Japanese Knotweed is eradicated immediately. Two successive years of no regrowth will confirm the area free from Japanese Knotweed.

Infested material will be moved by designated plant only, via internal access tracks to be constructed within vested land. A specialist contractor will be appointed to oversee excavation & transport, biosecurity and treatment as necessary.

4.2.1.1 Japanese Knotweed outside the works area

the treatment of Japanese Knotweed on lands owned by Clare County Council will continue. This will ensure that in the long term this species is eradicated and that it does not spread back into the proposed development boundary from the adjacent lands.

The recommended measures set out in this plan are valid for the construction phase of the proposed development.

5. TRAINING AND OPERATIVE COMPETENCY

5.1 Legislative Context

A suitably qualified person with sufficient training, experience, and knowledge in the control of IAPS should be employed to assist in the planning and execution of control measures in relation to the invasive species listed above, namely Japanese Knotweed, Giant Knotweed, Rhododendron and Himalayan Balsam. While treating invasive species, operators must comply with all legislation regulating the treatment and management of invasive species. The relevant standards and legislation that will dictate how eradication is undertaken include:

- European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended) (S.I. No. 477 of 2011);
- European Communities (Sustainable Use of Pesticides) Regulations, 2012 (S.I. No. 155 of 2012);
- European Communities (Plant Protection Products) Regulations, 2012 (S.I. No. 159 of 2012);
- Safety, Health and Welfare at Work Act, 2005;
- Safety, Health and Welfare at Work (Construction) Regulations, 2013;
- Safety, Health and Welfare at Work (General Application) Regulations, 2007;
- Waste Management Acts, 1996 to 2013, and related legislation; and,
- Wildlife Act, 1976 (as amended) ("the Wildlife Act").

Training

The Sustainable Use of Pesticides Directive requires Member States to '[...] *set up systems of both initial and additional training for* [...] *professional users of pesticides and certification systems to record such training so that those who use or will use pesticides are fully aware of the potential risks to human health and the environment and of the appropriate measures to reduce those risks as much as possible*.'[1] Regulation 5(1) of the European Communities (Sustainable Use of Pesticides) Regulations, 2012,[2] which came into effect on the 26th of November, 2015,[3] states that a professional user of pesticides shall, subject to exception, '*hold a certificate confirming that the professional user has been trained to a standard determined by the Minister in the subjects listed in Annex I of the Directive*', and '*comply with any additional training requirements as determined by the Minister*.'[4]

Register of Professional Users

Regulation 4 of the European Communities (Sustainable Use of Pesticides) Regulations, 2012, grants the Minister for Agriculture, Food and the Marine the power to establish a register of professional users and any class or classes of professional users.[5] The Minister is also granted the power to set conditions for registration.[6] Information relating to professional users and the register is available on the website of the Pesticide Registration and Controls Divisions (PRCD) of the Department of Agriculture, Food and the Marine (DAFM):
https://www.pcs.agriculture.gov.ie/sud/professionalusersprayeroperators/

[1] Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides Recital 8 of the Preamble.
[2] European Communities (Sustainable Use of Pesticides) Regulations, 2012, (S.I. No. 155 of 2012) Regulation 5(1).
[3] European Communities (Sustainable Use of Pesticides) Regulations, 2012, (S.I. No. 155 of 2012) Regulation 2(1).
[4] European Communities (Sustainable Use of Pesticides) Regulations, 2012, (S.I. No. 155 of 2012) Regulation 5.
[5] European Communities (Sustainable Use of Pesticides) Regulations, 2012, (S.I. No. 155 of 2012) Regulation 4(1).
[6] European Communities (Sustainable Use of Pesticides) Regulations, 2012, (S.I. No. 155 of 2012) Regulation 4(2).

Specific Areas

The Sustainable Use of Pesticides Directive[7] and related Irish transposing Regulations[8] place additional restrictions and, in some cases, prohibitions, on the use of pesticides in certain specified areas. Such areas include: areas for the abstraction of drinking water; transport routes (such as railway lines); areas with sealed or very permeable surfaces; groundwater vulnerable areas; areas used by the general public or defined vulnerable groups; and, European sites.

In relation to '*Specific Areas'*, Regulation 12(1) of the Sustainable Use of Pesticides Regulations provides that, subject to paragraph (2), a person shall not apply a pesticide in:

(a) Areas used by the general public or by defined vulnerable groups;[9] and,
(b) a European a European site.[10]

'Vulnerable groups' are defined in the Plant Protection Product Regulation to mean *'persons needing specific consideration when assessing the acute and chronic health effects of plant protection products*' and include '*pregnant and nursing women, the unborn, infants and children, the elderly and workers and residents subject to high pesticide exposure over the long term.*'[11] The term 'European Site' is defined in the European Communities (Birds and Natural Habitats) Regulations, 2011, and includes special areas of conservation and special protection areas.[12] Regulation 12(2) of the Sustainable Use of Pesticides Regulations states, inter alia: '*Where a person, having completed a risk assessment, is obliged to use a pesticide in [a specified] area [...] he or she shall ensure that preference is given to the use of low risk plant protection products or biological and cultural control measures and where such measures are not capable of performing the necessary function, a person shall prioritise the use of plant protection products that are not classified as R50 [...].*'13 Regulation 12(3) provides further:

> *Where a person uses a pesticide in an area referred to in paragraph (1) the onus of proof will lie with that person to show that there was no viable alternative and appropriate risk management measures were put in place.*[14]

[7] Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides.
[8] European Communities (Sustainable Use of Pesticides) Regulations, 2012, (S.I. No. 155 of 2012).
[9] Regulation 12(1)(a) of the European Communities (Sustainable Use of Pesticides) Regulations, 2012, (S.I. No. 155 of 2012).
[10] Regulation 12(1)(b) of the European Communities (Sustainable Use of Pesticides) Regulations, 2012, (S.I. No. 155 of 2012).
[11] Article 3(14) of the Regulation (EC) No. 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC.
[12] Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended) (S.I. No. 477 of 2011).
[13] Regulation 12(2) of the European Communities (Sustainable Use of Pesticides) Regulations, 2012, (S.I. No. 155 of 2012).
[14] European Communities (Sustainable Use of Pesticides) Regulations, 2012, (S.I. No. 155 of 2012) regulation 12 (3).

6. CONCLUSION

One invasive species listed on the Third Schedule was identified during the ecology surveys undertaken for the proposed development, namely Japanese Knotweed.
This will be undertaken for each area to ensure that invasive species are treated appropriately and not spread within or outside the proposed development site.

7. REFERENCES

CCC (2025) Clare County Biodiversity Action Plan 2025-2031. Clare County Council.

CCC (2023) Clare County Development Plan 2023-2029.Clare County Council.

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European Communities (Sustainable Use of Pesticides) Regulations, 2012. S.I. No. 155 of 2012.

European Communities (Plant Protection Products) Regulations, 2012. S.I. No. 159 of 2012.

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NBDC (2026) *Biodiversity Maps* <https://maps.biodiversityireland.ie> [Accessed April 2026]. National Biodiversity Data Centre, Waterford.

NBDC (2026) Japanese Knotweed (Reynoutria japonica) https://maps.biodiversityireland.ie/Species/41674 [accessed 28/04/2026]. National Biodiversity Data Centre, Waterford.

Reynolds, S.C.P. (2002) *A catalogue of alien plants in Ireland*. National Botanic Gardens. Glasnevin, Dublin.

Safety, Health and Welfare at Work Act, 2005. No. 10 of 2005.

Safety, Health and Welfare at Work (Construction) Regulations, 2013. S.I. No. 291 of 2013.

Safety, Health and Welfare at Work (General Application) Regulations, 2007. S.I. No. 299 of 2007.

TII (2008) *Guidelines for Ecological Survey Techniques for Protected Flora and Fauna during the Planning of National Road Schemes*. Transport Infrastructure Ireland, Dublin.

TII (2020a) *The Management of Invasive Alien Plant Species on National Roads – Standard.* GE-ENV-01104*.* Transport Infrastructure Ireland, Dublin.

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

Waste Management Acts, 1996 to 2013. No. 10 if 1996.

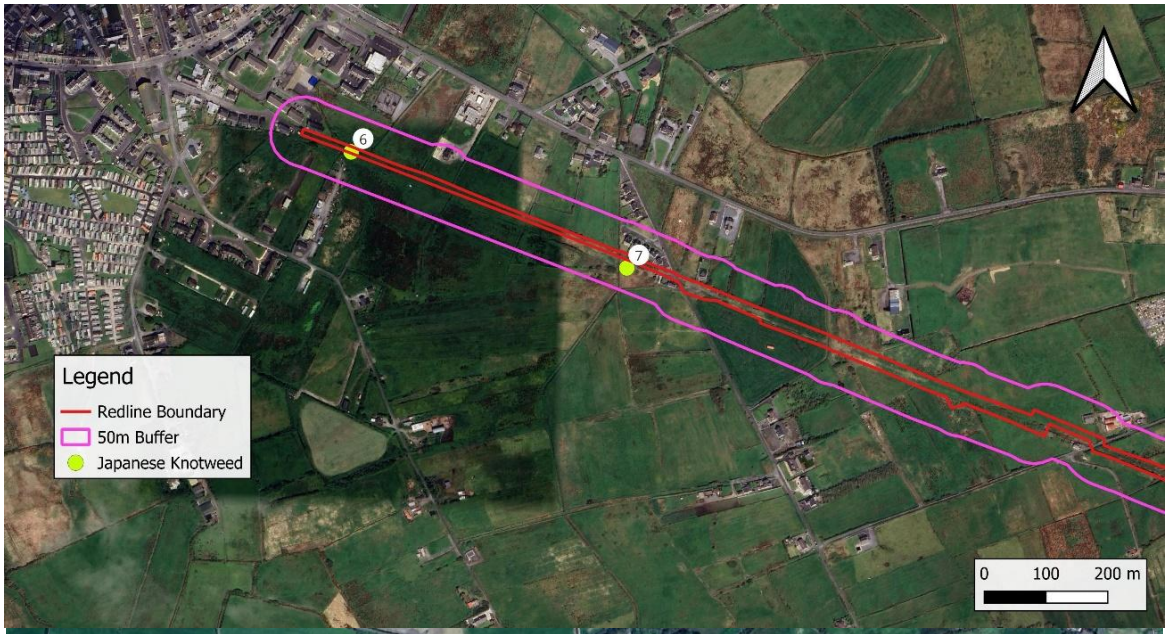
Wildlife Act, 1976. No. 39 of 1976.

Wildlife Act, 1976 (Protection of Wild Animals) Regulations, 1990, SI No. 112/1990.
Wildlife (Amendment) Act, 2000. No. 38 of 2000.

Wildlife (Amendment) Act, 2012. No 29 of 2012.

APPENDIX A

Invasive Species Mapping


6
7
Legend
Redline Boundary
50m Buffer
Japanese Knotweed
0 100 200 m

1
2
3
4
5
Legend
Redline Boundary
50m Buffer
Japanese Knotweed
0 100 200 m

APPENDIX B

Eraginate Process

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Eraginate ® Treatment Process – Japanese Knotweed

The Japanese Knotweed (JKW) is excavated from the ground and transported to a designated treatment area where the rhizomes/root material is screened/handpicked and transported to a skip for disposal at a suitably licensed landfill facility. This process greatly reduces the volume of material being sent to landfill. The remaining soils can be re-used on site in a designated location and monitored for any signs of regrowth.

The general sequence of works would be as follows;

- The first operation will be to carry out a pre-treatment spraying operation of the JKW.
- Designated haul routes will then be agreed and marked out for the transport of the JKW impacted soils to the central treatment area.
- A quarantine/lay down and treatment area will be established on site. This will comprise a sufficiently large area to hold the excavated JKW impacted soils. A cleaning station will also be established at the entrance to the quarantine area so that any pedestrians entering or leaving the area can wash and scrub their footwear with herbicidal formulae to ensure that no JKW is spread throughout any other area of the site.
- All other vegetation surrounding the JKW will then be removed. This will be carried out by hand or riddle bucket. It will be done in such a fashion as not to cause any disruption to the JKW growth but rather expose the growth for eradication.
- The JKW stalk material will be removed and loaded into lined skips for disposal off site to a suitably licensed facility.
- A controlled excavation of the soils that are impacted with knotweed rhizomes will be carried out. A specialist supervisor will determine the extent of the excavation to ensure all rhizomes are removed. All excavated soils are stockpiled and handpicked to remove any visible roots, rhizomes or crowns.
- All excavated and handpicked material will be stockpiled in the treatment area for mechanical processing. An Allu bucket will be used to mechanically process the rhizome material from the soils. Any remaining rhizome fractions will be treated with herbicides.
- During treatment operations, all spray protocols are to be followed including handling requirements, operators PPE, environmental protection, spray drift and protection of other site operatives and visitors. Protection measures include; forming of an embankment of soils

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around where spraying takes place, spraying low to ground level and not spraying if it is a windy day.

- All plant is to remain in the quarantined area for the duration of the works. If any plant is to be removed, the wheels and tracks should be jet washed with approved herbicides prior to removal off site. This ensures that no JKW is spread to any other area of the site. Upon completion the treatment area will be de-mobilised and the site handed back to the client.

Example of Warranty and Warranty Conditions

ATG Services (Ireland) Ltd ("ATG") will design, carry out and complete such treatment of Japanese knotweed as ATG sees fit (subject to clause 5 below) to see that the eradication will be successful in the areas in which ATG will carry out treatment works and will monitor these areas as a watching brief service and as further described in ATG's appointment, provided that the programme of application as advised by ATG is adhered to ("the treatment"). In carrying out any services and the treatment, ATG Services (Ireland) Ltd shall not be construed as owing any greater duty than the use of reasonable skill and care in accordance with the normal standards of its profession.

1) If there is any evidence that the treatment has not been successful despite the above, ATG undertakes to take such reasonable further steps as shall be necessary, to eradicate the Japanese Knotweed.
2) If the client requires greater insurance cover than the above, it must in its own interests arrange such cover.
3) On completion of the treatment, ATG will write to the client and to the beneficiary confirming that the control has been successful in those areas, which have been previously identified and treated in accordance with ATG's method statement.
4) ATG Services (Ireland) Ltd shall have no liability whether in contract or in tort, in negligence, for breach of statutory duty or otherwise for the emergence of any Japanese Knotweed that has been introduced during the period of the treatment or the period of this warranty by the actions of a third party.
5) This warranty does not confer any rights other than expressly set out above and does not cover any claims for consequential loss or damage. ATG Services (Ireland) Ltd shall have no liability whether in contract or in tort, in negligence, for breach of statutory duty or otherwise for any special, indirect or consequential loss.

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6) If Japanese Knotweed regrows in the site area treated by ATG, then ATG undertakes to re-treat the site area using any reasonable methods, provided that the cause of the regrowth is not due to the actions of a third party.
7) ATG Services (Ireland) Ltd confirms that it has taken out professional indemnity insurance with a limit of indemnity of not less than £2,000,000 (two million pounds) for any one claim or series of claims arising from the same originating or underlying cause. ATG will maintain such insurance at all times until five years after the completion of the treatment provided such insurance is available in the United Kingdom on commercially reasonable rates and terms. When reasonably requested, ATG will provide documentary evidence that the insurance required under this warranty is being maintained.
8) During the period of the treatment certain factors could affect timing and effectiveness or eradication methodology. These include; force majeure; fire; lightning; explosion; flood; riot and civil commotion; manufacture or transportation of any of the goods or materials require for the treatment, or any persons engaged in the preparation of the design of the treatment; exceptionally adverse weather conditions; and any other man made factors whatsoever. ATG will take reasonable steps to modify its eradication methodology to mitigate the effects of the foregoing where these are identified by ATG.
9) ATG Services (Ireland) Ltd shall have no liability whether in contract or in tort, in negligence, for breach of statutory duty or otherwise for Japanese Knotweed brought to the site after the treatment has been completed, or present in an area outside of the original stands treated.
10) Subject to the terms set out above, this warranty shall remain valid for a period of five years from completion of the treatment.

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Warranty Conditions

The warranty is conditional on the following:

- Eradication is carried out 100% under ATG's control and to detailed ATG methodology.
- A detailed site survey to identify and map at a suitable scale consistent with the site to show all knotweed infestations, and any trees or shrubs of ecological value that should be protected from the eradication treatment works. Such survey to identify any potential watercourses or other factors that would affect methodology.
- Complete Health and Safety audit of site.
- Historical record of all ground works over the last twenty-four months.
- Agreement with client that the plan accurately reflects the extent of all knotweed on site, and agreement of course of action for any boundary issues with adjacent landowners. Plan to form basis of site control document. This to be used in conjunction with proposed site development plan.
- All proposed works on site during the eradication period to be notified to ATG prior to commencement. This to include all proposed site activity and any local authority and utility works. It is the sole responsibility of the client to keep ATG informed of any potential disturbance of the site in any way whatsoever.
- Site security to be the sole responsibility of the client and should be consistent with any recommendations made by ATG.
- All fly tipping subsequent to contract and GPS map being agreed with the client to be disposed of at discretion of ATG in approved manner at additional cost to client. Disposal to be organised at cost by ATG and to be charged as incurred.
- ATG to approve source and importation of any topsoil onto site and to agree any significant change in ground levels to be carried out post site treatment.
- If the performance of any part of the treatment is prevented, restricted or delayed by reason of any cause beyond the reasonable control of ATG (including (without limitation) fire, flood, rain, wind, sleet, hail and other Act of God, industrial action including strike and lock out, riots, war, armed conflict, trade sanctions, contamination, disease and epidemic, interruption or failure of a utility service, failure of computer or other machinery, and change in law or regulatory requirements) ATG shall be excused from such performance to the extent of such prevention, restriction or delay, provided that ATG shall use commercially reasonable

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endeavours to avoid or remove such causes of non-performance or to find an alternative manner or means of performance.

- ATG to monitor site for a period of one-year post treatment during the knotweed growing season and after that time as appropriate or as notified by Client.

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