



JAPANESE KNOTWEED INVASIVE SPECIES MANAGEMENT PLAN

Project Reference	Galway Harbour Extension (240528).
Date & Time	05/09/2024
Subject	Invasive Species Management Plan (ISMP)
Author(s)	Rachel Minogue (B.Sc., Env).

Background

MKO were commissioned to conduct a targeted Invasive Species Survey of the lands within the Galway Harbour Development Footprint, and lands adjacent. This survey was undertaken on Thursday the 1st of August 2024. A large, mature, extensive growth (approx 123m) of Japanese Knotweed, a high impact invasive species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations (S.I. 477 of 2011) was recorded to the northeast corner of the development footprint within Scrub (WS1) habitat (**Plate 1**). Further, two individual immature Japanese Knotweed stands were recorded to the west of the Scrub (WS1), along an area of Recolonising Bare Ground (ED3) (**Plate 2**). The extent of Japanese Knotweed growth within the Proposed Development Footprint is shown on **Figure 1.1**.

The works proposed within the vicinity of the recorded Japanese Knotweed infestation include the construction of a new spur of rail line and associated embankment from the existing rail line at the northeast corner of the proposed development footprint, to service the new Galway Harbour development.

As such, the Invasive Species Management Plan (ISMP) prescribes measures that will be employed to prevent any potential for the proposed works to cause the spread of this invasive species, which is a High Impact invasive species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations (S.I. 477 of 2011).





Plate 1 A large, mature, extensive growth (approx 123m) of Japanese Knotweed recorded to the northeast corner of the development footprint within Scrub (WS1) habitat.








Plate 2 An individual immature Japanese Knotweed stand recorded to the west of the Scrub (WS1), along an area of Recolonising Bare Ground (ED3)





Map Legend

-  Redline Boundary
-  Survey Area
-  Japanese Knotweed Growth
-  Japanese Knotweed Point



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Drawing Title

Extent of Japanese Knotweed Growth Within and Adjacent to Galway Harbour

Project Title

Galway Harbour Extension

Drawn By	Checked By
RM	CM

Project No.	Drawing No.
240528	Figure 1

Scale	Date
1:4,650.053	07.08.2024



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Statement of Authority

A baseline ecological survey of the proposed development footprint and surrounding lands was undertaken on the 4th of July 2024 by Rachel Minogue (B.S.c, Env) and Tom Peters (B.S.c., Env., MSc) of MKO. A targeted Invasive Species survey of the northern boundary of the proposed development footprint, and adjacent lands was conducted on the 1st of August 2024 by Rachel Minogue (BSc., Env) and Matthew Kieran (BSc., Eco). This Invasive Species Management Plan (ISMP) has been prepared by Rachel Minogue (B.Sc.). Rachel is an ecologist with MKO, with the relevant qualifications in Environmental Science. This report has been reviewed by Pat Roberts (B.Sc. (Env.)). Pat is an experienced project ecologist and has over 19 years' professional consultancy experience.

Legislative Framework

Regulations 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011) include legislative measures to deal with the dispersal and introduction of invasive alien species.

Non-native species subject to restrictions under Regulations 49 and 50 are included in the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). High impact invasive species on this list include, among others, Japanese Knotweed, Giant Hogweed, Giant Knotweed, Giant Rhubarb, Himalayan Balsam, Himalayan Knotweed, Bohemian Knotweed and Rhododendron. Vector materials which aid in the spread of these species include soil or spoil taken from places infested with Japanese Knotweed (*Reynoutria japonica*), Giant Knotweed (*Reynoutria sachalinensis*) or their hybrid Bohemian Knotweed (*Reynoutria x bohemica*). Two vector materials are referred to in the regulations (Third Schedule Part 3), one is blue mussel seed and the second is:

“Soil or spoil taken from places infested with Japanese knotweed, Giant knotweed or their hybrid Bohemian knotweed”.

Regulation 49

“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.”

Regulation 50

“a person shall be guilty of an offence if he or she has in his or her possession for sale, or for the purposes of breeding, reproduction or propagation, or offers or exposes for sale, transportation, distribution, introduction or release

- (a) an animal or plant listed in Part 1 or Part 2 of the Third Schedule, (b) anything from which an animal or plant referred to in subparagraph
- (a), can be reproduced or propagated, or
- (c) a vector material listed in Part 3 of the Third Schedule,”

Guidance Documents

The following guidance documents and literature sources were consulted during the preparation of this report:

- Irish Water (2016) IW-AMT-SOP-009 Information and Guidance Document on Japanese Knotweed
- Stokes et al. (2004). Stokes, K., O'Neill, K. & McDonald, R.A. (2004) Invasive species in Ireland. Unpublished report.
- TII (2020) The Management of Invasive Alien Plant Species on National Roads – Technical Guidance
- Property Care Association (2018) Code of Practice for the Management of Japanese Knotweed
- NRA (2010). Guidelines on management of noxious weeds and non-native invasive plant species on national roads. National Roads Authority.
- Actions for Biodiversity 2017-2021, Ireland's 3rd National Biodiversity Action Plan.
- www.invasivespeciesireland.com
- www.invasivespeciesni.co.uk



Proposed Treatment of Japanese knotweed

The proposal for treatment of Japanese knotweed as set out below, follows the relevant guidelines as set out above and aims to retain all potentially contaminated material on the site of the proposed development and to avoid the requirement to remove it from the site and to ensure that the proposed development does not cause the spread of this invasive species. If, for any reason, the retention of contaminated material on the site is not possible due to unforeseen circumstances (following SI results etc.), a licence will be obtained from the National Parks and Wildlife Service to remove the contaminated material from the site and dispose of it at a waste facility that is licenced to receive it.

Site Set-Up and Associated Measures

- Prior to the commencement of any works, a pre-commencement survey for invasive species including Japanese knotweed will be undertaken by a fully qualified ecologist to determine the locations and extent of the species within the development site and to determine whether there have been any changes in the extent of the infestation since the undertaking of surveys in August 2024.
- The locations and extent of Japanese Knotweed within the site will be clearly marked out using temporary fencing to ensure they are not disturbed. An exclusion zone surrounding each stand will also be identified and this will inform the extent of the area to be treated as potentially contaminated. The exclusion zone will extend where works are proposed, to a distance of at least 7m from the identified stands.
- The entire fenced off area will be treated as potentially contaminated and strict biosecurity measures will be put in place to avoid the potential for spread of invasive species outside the fenced area.
- Exclusion zones will be large enough to accommodate any potentially contaminated material that is excavated to facilitate the construction works within the zones.
- As a precautionary measure, machinery will be thoroughly cleaned down before entering the site to prevent potential spread of invasive species from elsewhere.
- Clean machinery will enter the exclusion zones. No machinery will leave the exclusion zones without having been thoroughly cleaned down to ensure that it is not transporting contaminated material outside the potentially contaminated area.
- The machine will track out of the cell over plywood or other suitable material in order to protect the machine from potential contamination while exiting the contaminated cell area.
- Material used for tracking machinery out of the cell e.g. plywood will be thoroughly cleaned down under supervision of the invasive alien plant species (IAPS) specialist prior to removal off site.
- Personnel working within any exclusion zone will thoroughly clean/brush down their tools/boots/clothing etc. To ensure that they do not transport any contaminated material outside the site.
- Tool box talks will be held with all members of the construction team responsible for carrying out measures detailed in this management plan. This will detail locations of infested material and how to carry out work on site in a biosecure way.
- The appointed contractor that will carry out the works within the exclusion zones for Japanese Knotweed on site will include the measures outlined in this management plan into their own method statements.
- The site manager/contractor will appoint an environmental manager to ensure all measures in this invasive species management plan are undertaken correctly and to record all associated actions and outcomes.
- The work will be undertaken under the supervision of an invasive alien species specialist who will oversee the project on behalf of the Galway Harbour Company.



Pre-Treatment and Keeping of Soil and Plant Material on site (In-Situ)

- Prior to the outset of works, the plant will be sprayed with herbicide that is suitable for use in or near water such as Glyphosate or 2,4-D Amine. This will be undertaken to reduce above ground biomass. This may commence prior to the permitting of the proposed development in order to reduce the amount of contaminated material to be managed during construction and to minimise any potential for works to cause the spread of the species.
- Spraying with glyphosate in the autumn months, before leaves discolour and fall is most effective. Spring treatment is also an option but less effective.
- Spraying will be carried out by a competent person adhering to the specific label instructions.
- Spraying must be carried out on still, cool, dry days without any rain.
- Note: After the above spraying schedule, it is still possible for regrowth to occur. Additionally, root materials may still be viable within the soil (can remain viable up to 20 years) and any disturbance to the soil is likely to stimulate more growth.

Construction within the Exclusion Zones

- Any construction within the exclusion zones will treat all material as potentially contaminated.
- The works area will be cleared to formation level with any excavated material retained within the exclusion zone, in a temporary bund (lined with root barrier membrane) and not exported from it.
- A root barrier membrane will be laid at the base, and the proposed embankment will be constructed on top of the barrier using imported material and avoiding the use of potentially contaminated material.
- Once the construction works within exclusion zone are completed, a root barrier membrane will be lain over the sides of the embankment and the excavated and potentially contaminated spoil will be used as landscaping alongside the embankment in secure bund or bunds. These will be fenced off to prevent access and chemical treatment will continue during the operation of the development or until no Japanese knotweed is recorded.

Methodology for Laying of Root Barrier Membrane

- In order to prevent live rhizomes potentially compromising the construction, potentially infested areas will be overlain with a solid root barrier membrane. The root barrier membrane must stay intact for at least 50 years. A manufacturers' guarantee is required. This will be sized and installed under the supervision of a suitably qualified ecologist and in accordance with the relevant guidelines.
- A layer of no sharps sand or equivalent will be placed on the ground beneath the membrane to ensure that there are no opportunities for it to become ripped. The membrane will be inspected for damage prior to it being laid.
- Ideally, the membranes would consist of a single sheet with no joints. However, if joints are necessary, they will be sufficiently overlapped and sealed with a solid seam (either glue, heat or tape as per manufacturer's recommendations).
- The supervising ecologist will oversee the installation of the membrane and determine whether further measures are required to prevent lateral spread of the plant outward from under the excavated area.
- Following satisfactory laying of the membrane, it will be covered with a 50mm sand to allow construction on top and to prevent potential damage from burrowing animals.
- Once the soil has been removed, the membrane placed and the embankment constructed, the area will be considered uncontaminated for the purposes of continued construction.
- A record will be kept of the affected areas and no further excavations or below ground works will be permitted in these areas.



Post Treatment Monitoring

Ongoing monitoring will be required for all Third Schedule Invasive Species and non-native Invasive Species of potential concern recorded with suitable follow-up management in order to control new growth or re-establishment within the infested areas.

Following the initial treatment and completion of the development, the treated areas will be re-surveyed annually and if necessary, re-treated until no growth is recorded for two consecutive years. If invasive plants are found to be re-establishing, they shall be treated as per the measures outlined above.

