MKO

APPENDIX 6-3

INVASIVE SPECIES MANAGEMENT PLAN

Planning and Environmental Consultants

Invasive Species Management Plan

Curraglass Wind Farm, Co. Cork

Table of Contents

1. INTRODUCTION

1.1 General Introduction

MKO were commissioned by Wingleaf Ltd. to prepare an Invasive Species Management Plan (ISMP) to submit with a planning application for a Proposed Development at Curraglass, Co. Cork.

The Proposed Development is located within a rural, agricultural setting in southwest Cork, approximately 6.8 km northeast of Kealkill Village and 3.8 km southwest of the village of Ballingeary. The Site, which historically hosted an operational windfarm (Kealkill Wind Farm), is centred approximately at E508999, N562646 (ITM).

Two Invasive Species (ISs) listed on the 'Third Schedule' of Regulations 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011) and the 'First Schedule' of the European Union (Invasive Alien Species) Regulations 2024 (S.I. 374 of 2024) were identified either within or directly adjacent to the Site, or along the proposed turbine delivery route (TDR), during the Multidisciplinary walkover surveys carried out by MKO throughout 2024 and 2025. Those species include:

- Rhododendron (*Rhododendron ponticum*)
- Japanese Knotweed (*Reynoutria japonica*)

This ISMP has been prepared with reference to current legislation and best practice guidelines in the identification, treatment and management of invasive alien species listed on the 'Third Schedule' and the 'First Schedule' of the above-mentioned European Union/Communities Regulations. The document does not provide advice or guidance with reference to waste legislation.

The objectives of this report are summarised below:

- Provide site specific best practice guideline measures for the control and management of invasive species.
- Provide detailed recommendations for the management of invasive species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011) and the 'First Schedule' of the European Union (Invasive Alien Species) Regulations 2024 (S.I. 374 of 2024).

The recorded ISs are mapped in Figure 3-1, Figure 3-2 and Figure 3-3, showing their distribution within and adjacent to the Site or along the TDR.

1.2 Legislative Framework

Regulations 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011) and Regulation 17(a)/(b) of the First Schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. 374 of 2024), include legislative measures to deal with the dispersal and introduction of invasive alien species. These regulations are highlighted below.

Regulation 49 of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011)

> "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 of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011)

"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

(b), can be reproduced or propagated, or

(c), a vector material listed in Part 3 of the Third Schedule,"

Regulation 17 of the First Schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. 374 of 2024)

(1)A person shall not

(a) introduce into the State,
(b) keep, including in contained holding,
(c) breed, including in contained holding,
(d) import into, export from or transport within the State, except for the transportation of species to facilities in the context of eradication,
(e) place on the market,
(f) use, exchange or offer for exchange,
(g) permit to reproduce, grow or cultivate, including in contained holding, or
(h) release into the environment,

an invasive alien species of national concern.

(2)A person shall not

(a) import or otherwise introduce into the State,
(b) place on the market,
(c) use, exchange or offer for exchange, or
(d) release into the environment,

a vector material.'

1.3 Guidance Documents

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

- TII (2020). *The management of Invasive Alien Plant Species on National Roads.* TII Publications, Transport Infrastructure Ireland.
- Crushell, P., Foss, P., Hurley, C. & O'Loughlin, B. (2011). *County Kerry Invasive Species Survey 2011 - Pilot Mapping Study of the River Lee Catchment, Tralee.* Report prepared for Kerry County Council and The Heritage Council.
- Stokes et al. (2004). Stokes, K., O'Neill, K. & McDonald, R.A. (2004) *Invasive species in Ireland.* Unpublished report.
- Actions for Biodiversity 2017-2021, Ireland's 3rd National Biodiversity Action Plan.
- Inland Fisheries Ireland (2016) Best Practice for Control of Japanese Knotweed (*Fallopia japonica*)
- Property Care Association (2015) Guidance Note – Management of Himalayan Balsam
- www.invasivespeciesireland.com

1.4 Statement of Authority

This report has been prepared by Pádraig Desmond and reviewed by John Hynes.

Pádraig is a Project Ecologist with MKO with 4.5 years post graduate ecological experience, four years of which have been in ecological consultancy. Pádraig holds a BSc (Hons) in Ecology and Environmental Biology from University College Cork. Pádraig took up his position with MKO in December 2021, prior to which he worked as an Ecologist with Envirico. Through these consultancy roles Pádraig has gained excellent experience in producing ecological reports such as Natura Impact Statements, Ecological Impact Assessments, Biodiversity chapters, Invasive Species Management Plans, and Constraints Reports for a wide range of projects including small private developments to housing developments and renewable energy projects such as solar and wind farms. Prior to the above roles, Pádraig worked as a field ecologist for the Department of Conservation in New Zealand, where he developed a strong field-based skill set. Pádraig's key strengths and areas of expertise are in terrestrial ecology, including vegetation surveys, habitat identification, invasive species surveys, mammal surveys, Appropriate Assessment and Ecological Impact Assessment. Pádraig is also skilled in GIS.

John is the Ecology Director at MKO, with over 15 years' professional experience in the public and private sector. John oversees MKO's Ecology, Ornithology, Forestry, Bats, and GIS teams. John holds a B.Sc. in Environmental Science and a M.Sc. in Applied Ecology.

John's key strengths and areas of expertise are in Appropriate Assessment of plans and projects, Ecological Impact Assessment, Flora and Fauna survey methods and design, project management and project strategy. John is experienced as a coordinator or large multi-disciplinary teams on complex ecological projects. John has been involved as a lead Ecologist on a range of energy infrastructure, commercial, transport, housing, forestry, biodiversity net gain and nature restoration projects. John is a Full member of the Chartered Institute of Ecology and Environmental Management, a member of Galway County Council Climate and Biodiversity Special Policy Committee (SPC) and a contributor to the Wind Energy Ireland (WEI) Biodiversity and Sustainability Working Group.

The baseline ecological surveys were conducted by MKO ecologists; Sara Fissolo (BSc), Stephanie Corkery (BSc, MSc), Pádraig Desmond (BSc), and Molly O' Hare (BSc). All surveyors have relevant academic qualifications and are competent in undertaking the habitat and ecological assessments.

2. CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The Proposed Development comprises the construction of 3 No. wind turbines and all associated works. The proposed turbines will have a maximum blade tip height of 156.5m, above the top of the foundation.

The proposed turbines installed on the Site will have the following dimensions:

- Total tip height of 156.5m,
- Rotor diameter of 133m,
- Hub height of 90m.

The overall layout of the Proposed Development is shown on Figure 4-1 of the EIAR. This drawing shows the locations of the proposed turbines, existing onsite 38kV substation, 38 kV underground cabling, peat and spoil management areas, temporary construction compound, borrow pit, internal roads layout, and the main site entrance.

Full details of the Proposed Development are provided in Chapter 4: Description of the submitted EIAR.

3. LOCATION/EXTENT OF INVASIVE SPECIES WITHIN THE DEVELOPMENT SITE

3.1 Rhododendron (*Rhododendron ponticum*)

Rhododendron (*Rhododendron ponticum*) is an evergreen, acid loving shrub introduced to Ireland in the 18th Century. Since its introduction it has established itself as a major weed of acid woodlands in Wicklow, Kerry and Cork. It can withstand considerable shade and thrives as an understorey species in woodland, though it also tolerates open conditions in suitable acid soils. In additional to shading, The foliage of rhododendron contains various compounds that have an allelopathic action on other species (inhibiting their growth) which may further inhibit plants from growing within close proximity.

During field surveys undertaken, Rhododendron was recorded at three locations within the Site, two in close proximity to each other in the northern section of the Site and another minor infestation at the Site entrance. All recordings of this species within the Site were minor but each overlap with the footprint of the Proposed Development. The locations of this plant within the Site are shown on Figure 1-1. All records of Rhododendron plant identified within the construction footprint are shown in Plate 1-1, Plate 1-2 and Plate 1-3.

Additional stands of this species were recorded in third party lands adjacent to the proposed TDR, as per Figure 3-2 and Figure 3-3.

The coordinates of all Rhododendron recorded, as well as size of infestation, are provided in Table 3-1.

Table 3-1 Locations of Rhododendron recorded during the surveys undertaken

Map ID	Description	Coordinates
R1	One semi-mature bush recorded in isolation, adjacent to existing road to be upgraded. (<1x1m)	51.821139, -9.300555
R2	One semi-mature bush recorded in isolation, within construction footprint (<1x1m)	51.817469, -9.313889
R3	Seedling infestation, minor infestation within, construction footprint (<0.5x0.5m)	51.817444, -9.314087
R4	Large stand in third party lands adjacent to TDR (>5x5m)	51.814056, -9.301531
R5	Semi-mature stand in third party lands adjacent to TDR (>2.5x2.5m)	51.756184, -9.301471
R6	Large stand in third party lands approximately 15m from TDR (>5x5m)	51.782655, -9.099975
R7	Large stand in third party lands adjacent to TDR (>5x5m)	51.836539, -8.840007
R8	Extensive stand running adjacent to TDR for approximately 20m (>20x5m)	51.837462, -8.838655

The proposed TDR will require one small section of land take, northeast of the Site entrance and along the R584. No invasive species were recorded within this area. There will be no additional land take along the remaining sections of the TDR.

Plate 3-1 Third Schedule species Rhododendron (R3) to the north of the Site boundary in close proximity to the Proposed Development footprint

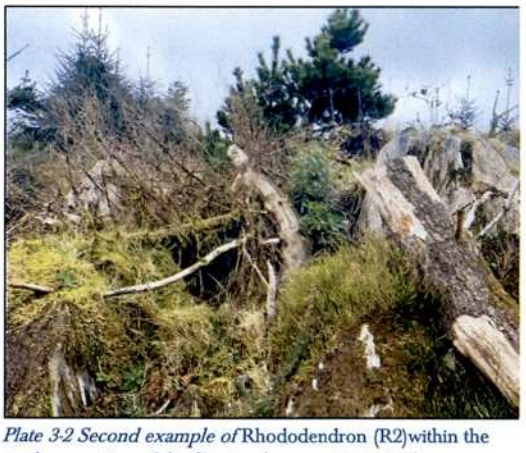


Plate 3-2 Second example of Rhododendron (R2) within the northern section of the Site, in close proximity to the Proposed Development footprint.

Plate 3-3 Third example of *Rhododendron* (R1) at the entrance of the Site within the Proposed Development footprint.

3.1.1 Proposed Management Strategy

Recordings of Rhododendron were recorded within the construction footprint and therefore, the following steps will be taken to ensure that this species does not spread into the wider environment as a result of the Proposed Development. There is no potential for disturbing or spreading this species along the TDR, and therefore, the below applies to plants within the Site only.

3.1.1.1 Site Set Up

Prior to the commencement of any works, the following site setup procedures will be carried out:

- A pre-commencement survey for Rhododendron will be undertaken by a fully qualified ecologist to determine the locations and extent of the species within the Site and to determine whether there have been any changes in the extent of the infestation since the undertaking of surveys in 2024 and 2025.
- The locations and extent of Rhododendron within the Site will be clearly marked out using hazard tape to ensure they are not disturbed. A 10m buffer zone (Higgins, G.T. 2008) surrounding each stand will also be applied using temporary fencing, to avoid disturbance of potentially contaminated soils.

Due to the minimal recordings of this species within the Site, it is proposed to treat the plant *in-situ*. The recommended option for *in-situ* treatment is to manually remove the upper parts of the plant and apply the Ecoplug method (www.landscapedepot.ie) as to avoid spray drift and to minimise the potential for spraying of non-target species. The Ecoplug method is outlined below.

- Cut the tree/plant as close to the ground as possible. This should be carried out from October to early March, outside the bird nesting season.
- The cut material can be stacked and stored on site, used as firewood or mulched as this plant material is deemed inert and can be used for landscaping as natural weed barriers or other horticultural purposes.
- A 30 mm hole will be drilled into the remaining stump and the Ecoplug will be inserted into the hole until it is flush with the top of the stump.
- Where immature plants occur, hand pulling can be undertaken at any time of the year and left to dry out on an impermeable surface.

Where the Ecoplug method is unsatisfactory, manual extraction of the root/stump from the ground is recommended. The following methods for root extraction are outlined below.

- Cut the tree/plant as close to the ground as possible. This should be carried out from October to early March, outside the bird nesting season.
- The root/stump will be removed from the ground using hand tool or an excavator.
- The cut material can be stacked and stored on the Site, used as firewood or mulched as this plant material is deemed inert and can be used for landscaping as natural weed barriers or other horticultural purposes.
- The root/stump will be placed on an impermeable surface such as palettes or a radon barrier membrane and left to dry out.

Following treatment or eradication of the plant, the soil at the Site of the infestation should still be considered to be contaminated on a precautionary basis. In order to avoid the potential spread of the species, the top layer of soil/peat from the 10m buffer zone will be removed and stored outside of the construction footprint, and within the Site and will then be clearly fenced off. This area will then be monitored and if necessary, re-treated following the initial treatment and should continue until no growth is recorded for a period of at least two consecutive years. Alternatively, the excavated buffer zone can be moved to an offsite waste facility, under licence from NPWS.

As the infestations within the Site were recorded within the construction footprint, any excavated material within the established buffer zones will not be transported to another location within the Site but can be used as back fill in the infested area. Alternatively, the excavated spoil from within the buffer zone can be transported to a licenced waste facility, under licence.

3.1.2 Post Treatment Monitoring

Ongoing monitoring will be required, with suitable follow-up management in order to control new growth or re-establishment of this species 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 in this report.

3.2 Japanese Knotweed (*Reynoutria japonica*)

Japanese Knotweed (*Reynoutria japonica*) is a tall, vigorous, ornamental plant that escaped cultivation in the late nineteenth century and has since become an aggressive invader in both rural and urban environments. The plant can grow up to 2-3m high and its root system can extend up to 3m into the ground and 7m laterally from the parent plant. The reason this plant is such a threat is due to the nature of its regeneration. Cut fresh stems can produce fresh shoots and roots (rhizome) from nodes when immersed in soil or water. Very small fragments (0.7g) of fresh Knotweed shoot and root material have the potential to start a whole new plant.

During field surveys undertaken Japanese Knotweed was not recorded within the Site, it was recorded at six locations on road verges along the proposed TDR. The identified stands along the TDR are indicated in Figure 3-2 and Figure 3-3. Infestations varied in size, but all were recorded directly adjacent to the existing road infrastructure, within third party lands.

The coordinates of all Japanese knotweed recorded, as well as size of infestation, are provided in Table 3-2.

Table 3-2 Locations of Japanese knotweed recorded during the surveys undertaken

Map ID	Description	Coordinates
JK1	Small stand in road verge, adjacent to TDR (<1x1m)	51.734609, -9.414684
JK2	Medium sized stand, on riverbank below the TDR (<3x3m)	51.734728, -9.414025
JK3	Large stand on other side of river, approximately 15m from TDR (>3x10m)	51.734864, -9.414265
JK4	Small stand in road verge, adjacent to TDR (<1x1m)	51.769660, -9.329322
JK5	Low long stand on banks of unmapped watercourse, below the TDR (>2x20m)	51.793998, -9.055632
JK6	Low long stand on banks of unmapped watercourse, below the TDR (>2x10)	51.794313, -9.054165

The proposed TDR includes the upgrade of an existing access track as a turning area, northeast of the Site entrance along the R584. No invasive species were recorded within this area. There will be no additional land take along the remaining sections of the TDR.

Plate 3-4 Example of a small infestation of Japanese knotweed recorded on a road verge along the TDR.

Plate 3-5 Japanese knotweed recorded adjacent to a watercourse along the TDR

Plate 3-6 Japanese knotweed recorded with scrub and bracken habitat along the TDR

3.2.1 Proposed Management Strategy

All recordings of Japanese knotweed were recorded in habitats adjacent to the proposed TDR. This species was not recorded within the Site. Therefore, the proposed management strategy below has been designed to ensure that there is no inadvertent spread of this species only, as a result of the Proposed Development.

3.2.1.1 Site Set-up

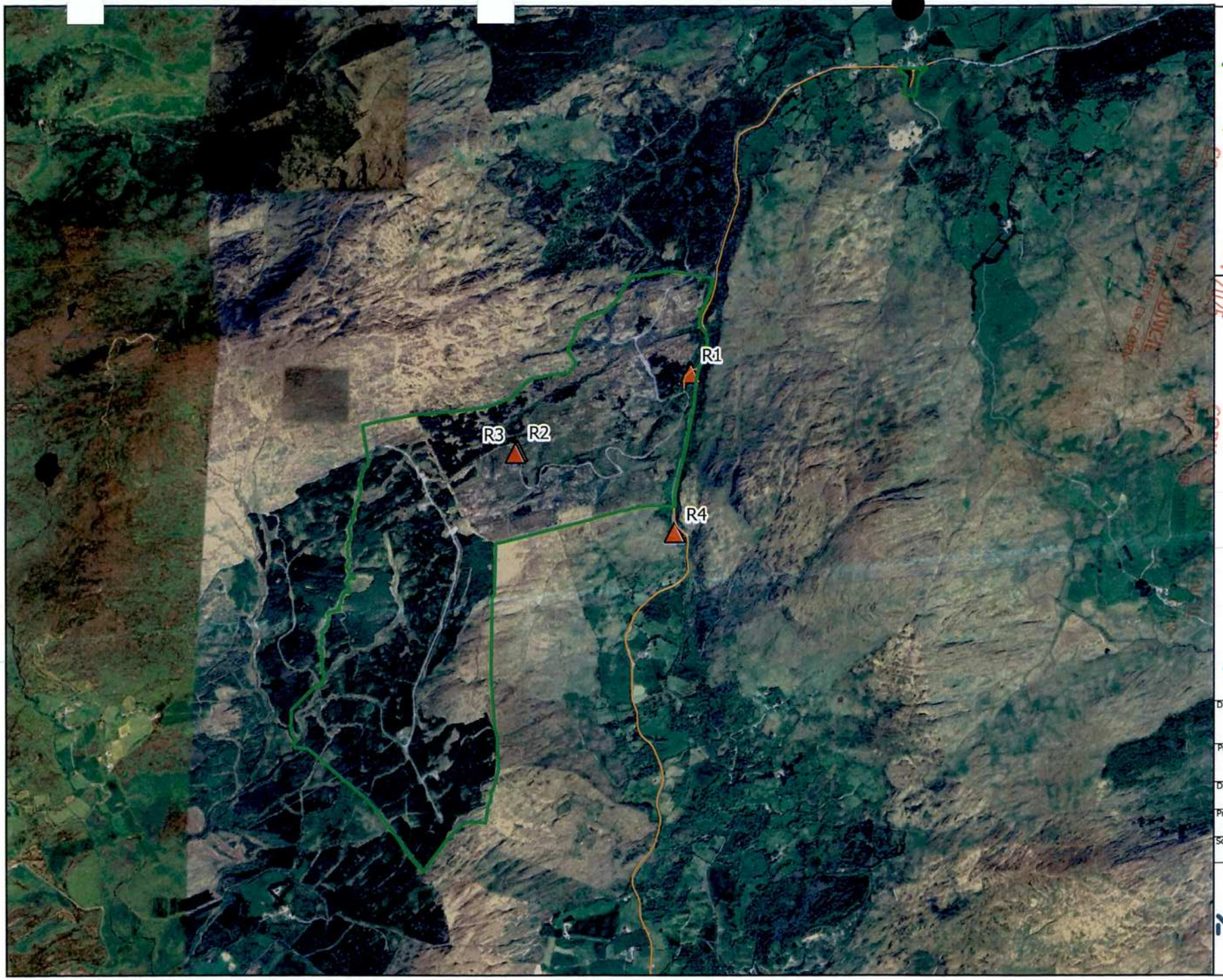
Prior to the commencement of any works, the following steps will be undertaken:

- A pre-commencement survey for Japanese knotweed will be undertaken by a fully qualified ecologist to determine the locations and extent of the species along the TDR to determine whether there have been any changes in the extent of the infestation since the surveys undertaken in 2024 and 2025. It will also serve to identify if this species has established within the Site.
- The locations and extent of Japanese knotweed along the TDR, and within the Site should it establish, will be clearly marked out using hazard tape to ensure they are not disturbed. An exclusion zone surrounding each stand will also be identified and an appointed ecological clerk of works (ECoW) will inform the extent of the area to be treated as potentially contaminated. The exclusion zone will extend to 7m around the identified stands.
- The ECoW will be appointed to supervise all works carried out within the exclusion zones, when required.
- All site and turbine transport staff will receive a toolbox talk from the ECoW regarding the identification and protocols surrounding Japanese knotweed along the TDR.

3.2.1.2 Vegetation clearance

To accommodate the proposed TDR, the requirement for the removal of vegetation adjacent to existing roads is likely to arise. As stands of Japanese Knotweed are located along the proposed TDR, the following will be undertaken to ensure these accommodation works do not result in the further spread of this species into the wider environment:

- All vegetation clearance in proximity to recorded stands of Japanese knotweed will be undertaken under the supervision of the appointed ECoW. No vegetation cleared from within the 7m exclusion zone will be removed from the infested area.
- All personnel and machinary which enter the exlcusion zones must be thouroughly washed down, as per the follwoing:
    - All plant, machinery, tools and personnel will be cleaned down prior to leaving the contaminated areas.
    - Clean down will be undertaken on an impermeable membrane such as a radon barrier and following completion of the clean down operation, this will be brushed clean with sweepings left within the contaminated area to ensure that there is no potential to spread any contaminated material.
    - Power washing will be avoided to prevent potentially contaminated run-off spreading outside the Site.
    - No plant, machinery, tools, or personnel will leave the exclusion zone, until authorised by the ECoW. All washed down material will remain within the 7m exclusion zone.



Map Legend

- EIAR Site Boundary
- Rhododendron
- Turbine Delivery Route

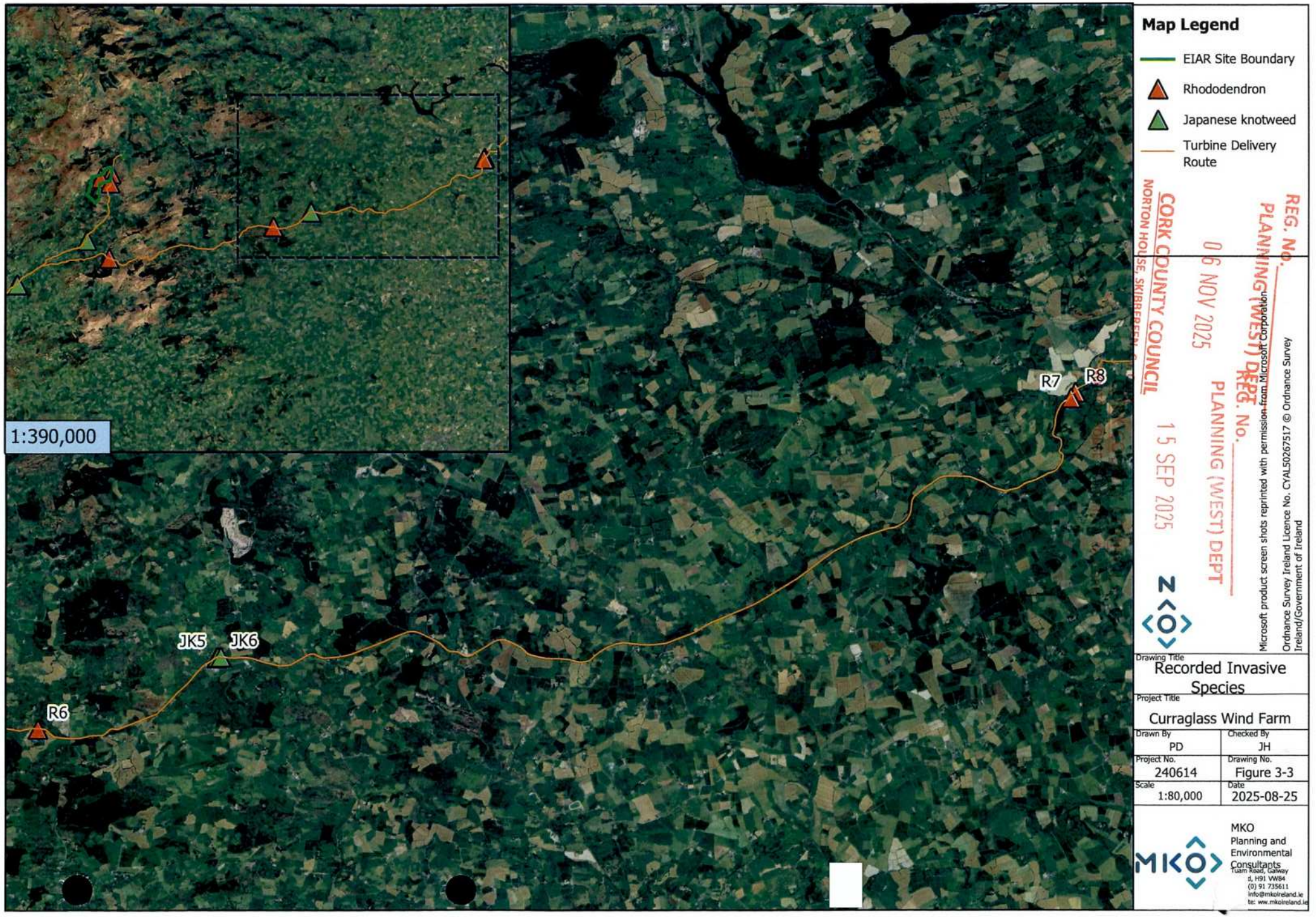
N

Drawing Title
Recorded Invasive Species

Project Title
Curraglass Wind Farm

Drawn By	Checked By
PD	CC
Project No.	Drawing No.
240614	Figure 3-1
Scale	Date
1:25,000	2025-08-25

MKO
Planning and Environmental Consultants
Tuam Road, Galway
Ireland, H91 VW84
+353 (0) 91 735611
email:info@mkoireland.ie
Website: ww.mkoireland.ie



Map Legend

- EIAR Site Boundary
- Rhododendron
- Japanese knotweed
- Turbine Delivery Route

N

Drawing Title
Recorded Invasive Species

Project Title
Curraglass Wind Farm

Drawn By	Checked By
PD	JH
Project No.	Drawing No.
240614	Figure 3-3
Scale	Date
1:80,000	2025-08-25

MKO
Planning and Environmental Consultants
Tuam Road, Galway
d, H91 VW84
(0) 91 735611
info@mkoireland.ie
te: www.mkoireland.ie

4. SITE HYGIENE AND BIOSECURITY MEASURES

The following site hygiene and biosecurity measures will be adhered to for the management of invasive species within the Site and along the TDR:

- All works in relation to the invasive species will be supervised by an ECoW.
- All staff will be given a Toolbox Talk, by a suitably qualified person or ecologist, on invasive species removal in relation to Japanese Knotweed and Rhododendron and their management on site.
- The contractor will assign a member of their team as Environmental Officer to ensure the management plan is adhered to throughout the proposed works.
- A designated bio-secure area/exclusion zone will be set up at recorded invasive species locations to prevent disturbance in these areas. Invasive species will be marked with hazard tape in order to identify the species prior to vegetation clearance works and to keep it separate from other brash material.
- All machinery should be thoroughly cleaned down prior to arriving on the site to avoid the potential spread of invasive species from elsewhere.
- Machinery that is used for excavation and onsite removal of invasive material will not be used for any other works until they are fully cleaned down and then visually inspected by a specialist to ensure no fragments of invasive plant material are present.
- Prior to leaving the invasive species exclusion zones, all boots and clothing will be thoroughly brushed down to remove any contaminated material prior to leaving the area.
- As a precautionary measure, machinery will be thoroughly cleaned down before exiting the Site to prevent potential spread of invasive species elsewhere.
- Clean down will be carried out using brushes and shovels and power washing will be avoided insofar as possible. This is to prevent potentially contaminated run-off spreading outside the
- Site.
- Material used for tracking machinery out of the contaminated areas onsite e.g. plywood will be thoroughly cleaned down under supervision of the ECoW prior to removal off site.
- Any soil and topsoil required on the Site will be sourced from a stock that has been screened for the presence of any invasive species and where it is confirmed that none are present.
- Any material imported to the Site should be screened for invasive species by a suitably qualified ecologist before transportation to the Site.

5. CONCLUSIONS

This invasive species management plan has been designed to facilitate the eradication and/or management of First and Third Schedule Invasive Species recorded within the Site, or along the associated TDR. This management plan has provided a record of the locations of invasive species recorded to date.

Infestations of all invasive species identified within the Site during surveys undertaken in 2024 and 2025 will require additional surveys within the relevant growing season prior to commencement of any works to determine if the recorded species have spread further throughout the Site.

Any First or Third Schedule Invasive species and their established buffers that are located outside of the construction footprint will be left undisturbed and will not be the subject of any management as part of the current proposal. All such areas will be avoided during construction activities to avoid potential spread of any invasive plant species.

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