AVRIO

Invasive Species Survey Report

Lisdaran, Cavan, Co. Cavan

Project Details:

Project Reference:	AEMP - 519 (A6XD-T6)
Date of Issue:	11th July 2025
Client:	Genesis Planning
Address:	Lisdaran, Cavan, Co. Cavan (IGR: H 41173 06650)
Services Provided:	Preparation of an 'Invasive Species Survey Report'

AVRIO Quality Information:

Prepared by:	Emily Roulston (Ecological Consultant) AVRIO Environmental Management	Signed: 
Reviewed by:	Callum Neill (Senior Ecological Consultant) AVRIO Environmental Management	Signed: 
Approved by:	Fergal Maguire (Principal Ecological Consultant) AVRIO Environmental Management	Signed: 

Contents

Project Details: 2
AVRIO Quality Information: 2
Contents 3
Limitations 5
Executive Summary 6
1.Introduction 7
1.1 Remit 7
1.2 Surveyors 7
1.3 Site Location & Description 8
1.4 Proposed Development 8
2. Methodology 9
2.1 Fossitt Habitat Survey 9
2.1.1 Significance of Habitats 9
2.1.2 Invasive Species (Flora) Survey 9
2.2 Survey Limitations 10
3. Policy, Legislation & Guidance 11
4. Results 14
4.1. Invasive Species Listed Under the Third Schedule 14
4.2 High Risk Invasives 15
4.3 Medium Risk Invasives 16
4.4 Low Risk Invasives 24
4.5 Other Invasive Species Located 24
5. Impacts of Invasive Species 28
5.1 Third Schedule Invasives 28
5.1.1 Three-cornered Leek 28
5.2 High Risk Invasives 28
5.2.1 Cherry Laurel 28
5.3 Medium Risk Invasives 28
5.3.1 Buddleia 28
5.3.2 Sycamore 29
5.3.3 Wall Cotoneaster 29
5.4 Low Risk Invasives 29
5.4.1 Snowberry 29
5.5 Other Invasives 29
5.5.1 Hollyberry Cotoneaster 29
5.5.2 Franchet's Cotoneaster 29
6. Recommendations 30

6.1 Breeding Birds 30
6.2 Invasive Species listed under the Third Schedule 30
6.3 Non-Scheduled Invasive Species 30
6.3.1 Management Options for Cherry Laurel 30
6.3.2 Management Options for Buddleia 31
6.3.3 Management Options for Cotoneaster Species (Hollyberry, Franchet's, Wall) 32
6.3.4 Management Options for Snowberry 32
6.3.5 Management Options for Sycamore 32
7. Figures 34
7.1 Site Boundary Map 34
7.2 Invasive Species Survey Map 34

Limitations

AVRIO Environmental Management ("AVRIO") has prepared this report for the sole use of the Client in accordance with the Agreement under which AVRIO's services are performed. No other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by AVRIO. This report is confidential and may not be disclosed by the Client nor relied upon by any other party without the prior and express written Agreement of AVRIO.

Conclusions and recommendations contained within this report are based on information provided by others. AVRIO assumes all relevant information provided by those parties from whom it was requested is accurate. Information obtained by AVRIO was not independently verified by AVRIO unless otherwise stated in the report.

The works described in this report were undertaken between June 2025 and July 2025. These works were based on the conditions encountered and the information available during this said period of time. AVRIO accepts no liability for any matters arising if any recommendations contained in this document are not carried out or are partially carried out without further advice being obtained from AVRIO. This report is based on site conditions witnessed by AVRIO or other parties as required in accordance with the Agreement under which AVRIO's services are performed. The scope of this report and the services are accordingly factually limited by these circumstances.

Where assessments of works or costs identified in this report are made, such assessments are based upon the information available at the time and, where appropriate, are subject to further investigations or information which may become available.

AVRIO disclaim any undertaking or obligation to advise any person of any change in any matter affecting the report, which may come or be brought to AVRIO's attention after the date of the report.

Certain statements made in this report that are not historical facts may constitute estimates, projections, or other forward-looking statements. Even though these are based on reasonable assumptions as of the date of the report, such forward-looking statements, by their nature, involve risks and uncertainties that could cause actual results to differ materially from the results predicted. AVRIO explicitly does not guarantee or warrant any estimate or projections contained in this report.

Unless otherwise stated in this report, the assessments made assume that the sites and facilities will continue to be used for their current purpose without significant changes.

Where field investigations are carried out, these investigations have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time, and further confirmatory analyses should be made after any significant delay in issuing this report.

Executive Summary

AVRIO Environmental Management was engaged to undertake an Invasive Species Survey of lands at Lisdaran, Cavan, Co. Cavan (IGR: H 41173 06650). Proposed works include a residential development with public open space and associated landscaping.

A survey was undertaken on the 5th of June 2025 and 6th of June 2025. The survey area encompassed lands associated with the proposed development hereafter ('application site'), the extended landholding and a surrounding buffer area.

The site is approximately 1.5km northwest of Cavan Town Centre, 11.5km southeast of Belturbet Town Centre, and 41.3km northeast of Longford Town Centre. The application site is located north of Cavan General Hospital and south of the L1513 Carrickane Road.

A range of non-scheduled invasive species were identified within the survey area. These species were Cherry Laurel (*Prunus laurocerasus)*, Wall Cotoneaster (*Cotoneaster horizontalis)*, Hollyberry Cotoneaster (*Cotoneaster bullatus*), Franchet's Cotoneaster (*Cotoneaster franchatii Bois*), Snowberry (*Symphoricarpos albus*) and Sycamore *(Acer pseudoplatanus*). Specific recommendations for each invasive species are highlighted within the recommendations section of this report. Additionally, Buddleia (*Buddleja davidii*) was noted opportunistically outwith the survey area.

1-no. species listed under the Third Schedule, Three-Cornered Leek *(Allium triquetrum*), was found opportunistically outside of the ecological survey area. Given its location outwith the 30m Ecological Buffer, no further management is needed as it will not be spread by works.

1.Introduction

1.1 Remit

AVRIO Environmental Management was engaged to undertake an Invasive Species Survey of lands at Lisdaran, Cavan, Co. Cavan (IGR: H 41173 06650). Proposed works include a residential development with public open space and associated landscaping.

This report details the Invasive Species Survey results for the development and describes the habitats present within the site boundary and extended environs and evidence/suitability for invasive species.

1.2 Surveyors

Surveys and the drafting of this report herein were undertaken by Emily Roulston BSc (Hons). This report was reviewed by Callum Neill MSci (Hons) and approved by Fergal Maguire NDA, BSc (Hons), PIEMA.

Emily Roulston: The site survey and drafting of this report was undertaken by Emily Roulston. Emily is a Junior Ecologist at AVRIO Environmental Management. She holds a BSc (Hons) in Zoology from The University of Manchester. Emily has been working in Ecology since 2024, where she has experience contributing to habitat assessments including JNCC Phase I Habitat Surveys and Fossitt Habitat Surveys as well as producing a range of ecological reports including Preliminary Ecological Appraisals, protected species reports, Invasive Species Management Plans, and Habitat Regulation Assessments (HRA/AASR/NIS). Emily has also taken part in species monitoring schemes for a variety of NGOs since 2022, including bat, seabird, cetacean and pollinator surveys.

Callum Neill: The review of this report was undertaken by Callum Neill. Callum is an ecologist at AVRIO Environmental Management. Callum has a master's degree in marine biology from Queen's University Belfast. Callum has been undertaking environmental surveys in Northern Ireland and the Republic of Ireland since 2020 including Preliminary Ecological Appraisal (PEA), Preliminary Roost Assessments (PRA) and bat emergence/re-entry surveys on a variety of sites. Callum also has vast experience in leading intertidal surveys and at-sea/marine surveys, working for a variety of non-governmental organisations and academic institutions. Callum has experience contributing to habitat assessments including JNCC Phase I Habitat Surveys and Fossitt Habitat Surveys as well as producing a range of ecological reports including Preliminary Ecological Appraisals, Invasive Species Management Plans, Habitat Regulation Assessments (HRA/AASR/NIS).

Fergal Maguire: The approval of this report was undertaken by Fergal Maguire. Fergal is the founder of AVRIO Environmental Management Limited and brings over 12 years of experience in environmental and ecological consultancy. He has expertise in compliance, ecology, and resource efficiency, having worked on a wide range of projects with clients from large organizations to smaller companies. He has experience contributing to Environmental Impact Assessments, Strategic Environmental Assessments, environmental licence applications (IEL, IPC, and Waste Licences), and worked with agencies such as the EPA, NIEA, SEPA, and UK Environment Agency. His experience includes

managing IED-licensed facilities across Ireland, the UK, and Europe, as well as providing general consultancy in waste management, environmental compliance, and ecology. Fergal is highly skilled in producing Ecological Impact Assessments (EcIA), Habitat Regulation Assessments (HRA/AASR/NIS), Invasive Species Management Plans (ISMPs), and Construction Environmental Management Plans (CEMPs). He has served as an Ecological Clerk of Works (ECoW) for various construction projects, ensuring regulatory compliance and environmental protection. Fergal is a licensed ecologist in both the Republic of Ireland and Northern Ireland for a range of protected and priority species, including, but not limited to, bats, badger, otter, common lizard, smooth newt and priority bird species, underpinning his capability to deliver specialist ecological services across jurisdictions. Fergal has led large-scale survey projects for clients within Northern Ireland and the Republic of Ireland. His work involved conducting comprehensive ecological surveys, producing Appropriate Assessment Screening Reports and Habitat Regulation Assessments, and managing applications for derogation licenses. He collaborated closely with the NPWS and NIEA to ensure regulatory compliance, further solidifying his role as a trusted environmental consultant.

1.3 Site Location & Description

The site is approximately 1.5km northwest of Cavan Town Centre, 41.3km northeast of Longford Town Centre, and 11.5km southeast of Belturbet Town Centre. Figure 1 below details the survey location and area.

Habitats found on site included Buildings and Artificial surfaces (BL3), Hedgerows (WL1), Treelines (WL2), Mixed Broadleaved Woodland (WD2), Improved Agricultural Grassland (GA1), Dry meadows and grassy verges (GS2), Drainage Ditches (FW4) and Other Artificial Lakes and Ponds (FL8). The application site is located north of Cavan General Hospital and south of the L1513 Carrickane Road. The wider landscape is dominated by agricultural lands, with scattered residential properties, lakes, amenity grassland and areas of woodland. Cavan River is approximately 60m northeast of the site, running alongside the northeastern boundary of the site.

1.4 Proposed Development

The proposed development includes the construction of residential housing, with associated landscaping and areas of public open space.

2. Methodology

2.1 Fossitt Habitat Survey

The method adopted for the field survey follows the standard Fossitt Habitat Survey methodology as outlined in 'A Guide to Habitats in Ireland'[1]. This method is used due to its wide applicability and accepted usage for determining existing conditions from which potential impacts arising from a development can be assessed.

The Fossitt habitat survey method involves mapping and assigning habitats within an established classification system and, where necessary, recording using Global Navigation Satellite System (GNSS) of small features of ecological importance (e.g., the presence of rare plant species or dead trees providing potential bat roosts). A plant species list and photographs are produced and taken to convey to the reader a sense of the nature of the habitat(s) or to illustrate important ecological features.

The entire application site and immediate environs were surveyed for floral species and habitats classified by observing and recording the relative abundance of key species while also assessing the composition and condition of various vegetation communities. These surveys were augmented by the examination of aerial photographs, records and data compiled during a desktop study. Habitats were then classified according to the Fossitt habitat methodology Habitat Surveys.

2.1.1 Significance of Habitats

Ecological evaluation within this section follows a methodology that is set out in Chapter 4 of CIEEM Good Practice Guidance for Habitats and Species. The habitats within and adjacent to the development site was evaluated in accordance with the ecological context evaluation criteria outlined in CIEEM Good Practice Guidance for Habitats and Species[2]. The evaluation methodology also took cognisance of the National Roads Authority (NRA) outlined in Guidelines for Assessment of Ecological Impacts of National Road Schemes[3] which classifies sites in terms of their ecological importance, i.e., International Importance, National Importance, County Importance, Local Importance (Higher Value) or Local Importance (Lower Value).

2.1.2 Invasive Species (Flora) Survey

2.1.2.1 Third Schedule Species

Throughout the survey, the site was searched for invasive weed species, focusing on those species listed under the Third Schedule Part 1[4] of regulations 49 and 50, subject to restrictions. Invasive species included in this list include Japanese Knotweed (*Fallopia japonica*), Giant Hogweed (*Heracleum mantegazzianum*), Giant Knotweed (*Fallopia sachalinensis*), Giant Rhubarb (*Gunnera manicata*), Himalayan Balsam (*Impatiens glandulifera*), Himalayan Knotweed (*Polygonum polystachyum*), Bohemian Knotweed (*Fallopia bohemica*) and Rhododendron (*Rhododendron ponticum*).

[1] Habitat classification: Fossitt, J. (2000): A Guide to Habitats in Ireland - Fossitt.pdf (npws.ie)
[2] CIEEM-Good Practice Guidance for Habitats and Species: Good-Practice-Guide-July-2021-Update.pdf (cieem.net)
[3] NRA (2009): https://www.tii.ie/technical-services/environment/planning/Guidelines-for-Assessment-of-Ecological-Impacts-of-National-Road-Schemes.pdf
[4] http://invasivespeciesireland.com/wp-content/uploads/wp-post-to-pdf-enhanced-cache/1/third-schedule-part-1-plants.pdf

2.1.2.2 High, Medium & Low Risk Species

Attention was also given to invasive weed species that have been subject to risk analysis and prioritisation by Invasive Species Ireland[5]. Risk assessments of invasive species is a pro-active measure enabling both governments in the North and South of Ireland to prioritise management actions for invasive species that were already established in Ireland and ones that were likely to invade and impact on native biodiversity in the future. All invasive species that have been subject to risk analysis and prioritisation have been categorised into one of three classifications: High, Medium or Low. Invasives are categorised using ten questions designed to assess the relative level of risk and allocate the species into high, medium and low risk categories. All species categorised as High, Medium and Low risk identified onsite have been recorded.

2.1.2.3 Other Invasive Species

Invasive Species included in NRA Guidelines on the Management of Noxious Weeds and Non-native Species on National Roads[6] was also searched for as these species have been shown to have an adverse impact on landscape quality, native biodiversity or infrastructure; and is likely to be encountered during road schemes.

2.2 Survey Limitations

Weather conditions were dry and clear throughout the duration of the survey. It was not possible to access the 30m site buffer in places due to dense scrub, or due to access constraints e.g., residential premises and private lands.

[5] Kelly, J., O'Flynn, C., and Maguire, C. 2013. Risk analysis and prioritisation for invasive and non-native species in Ireland and Northern Ireland. A report prepared for the Northern Ireland Environment Agency and National Parks and Wildlife Service as part of Invasive Species Ireland.

[6] NRA Guidelines on the Management of Noxious Weeds and Non-native Species on National Roads 2010

3. Policy, Legislation & Guidance

The global threat of invasive species is recognised in the suite of international, European and national policy and legislation. From an international perspective the Conference of the Parties to the 10th Convention on Biological Diversity addressed invasive species under Target 9 which states:

> "By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment."

In Europe, the Regulation on the prevention and management of the introduction and spread of invasive alien species [1143/2014], a binding legal tool for all Member States, entered into force on the 1st of January 2015. This Regulation sets out rules to prevent, minimise and mitigate the adverse impacts of the introduction and spread, both intentional and unintentional, of invasive alien species on biodiversity and the related ecosystem services, in addition to human economy/ health impacts. The main outcomes of this Regulation are:

- Publication of a list of Invasive Alien Species of Union concern (Table 1 – plant only);
- Early detection issue of alert notification to Commission and other Member States;
- Rapid eradication in place within 3 months after alert notification (if possible/ feasible);
- Management measures put in place for widely spread species by February 4th, 2018;
- Restoration of damaged ecosystems undertaken [proportionate];
- Reporting on surveillance system, distribution of species, action plans etc.

Table 3-1: Invasive Plant Species of Union Concern

Common Name	*Scientific Name:*	*Common Name*	*Scientific Name:*
Alligator Weed	*Alternanthera philoxeroides*	Giant hogweed	*Heracleum mantegazzianum*
American Skunk Cabbage	*Lysichiton*	Indian balsam	*Microstegium vimineum*
Asiatic Tearthumb	*Persicaria perfoliate*	Kudzu vine	*Pueraria lobata*
Broadleaf Watermilfoil	*Myriophyllum heterophyllum*	Nuttall's waterweed	*Elodea nuttallii*
Chilean rhubarb	*Gunnera tinctoria*	Parrot's feather	*Myriophyllum aquaticum*
Common milkweed	*Asclepias syriaca*	Persian hogweed	*Heracleum persicum*
Crimson fountaingrass	*Pennisetum setaceum*	Sosnowsky's hogweed	*Heracleum sosnowskyi*

Curly waterweed	*Lagarosiphon major*	Water hyacinth	*Eichhornia crassipes*
Eastern baccharis	*Baccharis halimifolia*	Water-primrose	*Ludwigia grandiflora*
Fanwort	*Cabomba caroliniana*	Floating primrose-willow	*Ludwigia peploides*
Floating pennywort	*Hydrocotyle ranunculoides*		

Nationally, the European Communities (Birds and Natural Habitats) Regulations 2011 [SI.477] contain the provisions to address the invasive species problem. A blacklist of unwanted species is set out in the Regulations (Table 2). It will be an offence without a licence, to release or allow to disperse or escape, to breed, propagate, import, transport, sell or advertise such species. Two regulations that deal specifically with these scheduled lists of species are:

- Regulation 49: Prohibition on introduction and dispersal of certain species
- Regulation 50: Prohibition on dealing in and keeping certain species
- Regulation 74: Transitional provisions in relation to Regulations 49 and 50

  (Incl. Regulation 50 is not yet in effect until such time that the Minister gives public notice of it)

Furthermore, disposal of invasive plant species is regulated under Section 32 of the Waste Management Act, 1996 to 2008; and Section 4 of the Air Pollution Act, 1987.

Table 3-2: Invasive plant species listed in the Third Schedule (Part 1) of Regulations 49 and 50, Birds and Natural Habitats Regulations 2011 [SI. 477]

Common Name	*Scientific Name:*	Common Name	*Scientific Name:*
American skunk-cabbage	*Lysichiton americanus*	Japanese knotweed	*Fallopia japonica*
A red alga	*Grateloupia doryphora*	Large-flowered waterweed	*Egeria densa*
Brazilian giant-rhubarb	*Gunnera manicata*	Mile-a-minute weed	*Persicaria perfoliata*
Broad-leaved rush	*Juncus planifolius*	New Zealand pigmyweed	*Crassula helmsii*
Cape pondweed	*Aponogeton distachyos*	Parrot's feather	*Myriophyllum aquaticum*
Cord-grasses	*Spartina (all species and hybrids)*	Rhododendron	*Rhododendron ponticum*
Curly waterweed	*Lagarosiphon major*	Salmonberry	*Rubus spectabilis*
Dwarf eel-grass	*Zostera japonica*	Sea-buckthorn	*Hippophae rhamnoides*
Fanwort	*Cabomba caroliniana*	Spanish bluebell	*Hyacinthoides hispanica*
Floating pennywort	*Hydrocotyle ranunculoides*	Three-cornered leek	*Allium triquetrum*
Fringed water-lily	*Nymphoides peltata*	Wakame	*Undaria pinnatifida*

Giant hogweed	*Heracleum mantegazzianum*	Water chestnut	*Trapa natans*
Giant knotweed	*Fallopia sachalinensis*	Water fern	*Azolla filiculoides*
Giant-rhubarb	*Gunnera tinctoria*	Water lettuce	*Pistia stratiotes*
Giant salvinia	*Salvinia molesta*	Water-primrose	*Ludwigia (all species)*
Himalayan balsam	*Impatiens glandulifera*	Waterweeds	*Elodea (all species)*
Himalayan knotweed	*Persicaria wallichii*	Wireweed	*Sargassum muticum*
Hottentot-fig	*Carpobrotus edulis*		

Furthermore, a number of other resources pertaining to invasive plant species within Ireland were utilised:

1. Catalogue of Ireland's Non-native Species https://species.biodiversityireland.ie;
2. Invasive species of Ireland list, derived from the prioritisation risk assessment undertaken by NBDC and IFI; ranked as 'at risk of having High Impact (52 species)', 'at risk of having Medium Impact (78 species)', and 'potential invaders with a risk of High Impact to Ireland' (51 species)[7]
3. Invasive Species included in NRA Guidelines on the Management of Noxious Weeds and Non-native Species on National Roads[8] were recorded, as these species have been shown to have an adverse impact on landscape quality, native biodiversity or infrastructure; and are likely to be encountered during road schemes.
4. Additionally, Bamboo species recorded within Invasive Bamboos: Their Impact and Management in Great Britain and Ireland[9] were recorded, as Bamboo can be highly invasive and can impact negatively on the built environment and local habitats.

[7] Kelly, J., O'Flynn, C., and Maguire, C. 2013. Risk analysis and prioritisation for invasive and non-native species in Ireland and Northern Ireland. A report prepared for the Northern Ireland Environment Agency and National Parks and Wildlife Service as part of Invasive Species Ireland.
[8] NRA Guidelines on the Management of Noxious Weeds and Non-native Species on National Roads 2010
[9] Taylor B, Glaister J, and Wade P. M. (2021). Invasive Bamboos 2021: Their Impact and Management in Great Britain and Ireland. UK: Liverpool University Press.

4. Results

The Invasive Species survey was undertaken on the 5th of June 2025 and 6th of June 2025 by qualified ecologists and encompassed the entirety of the site works area, 30m ecological survey buffer, and the immediate environs, where possible. The weather during the survey was dry and clear. No survey limitations or constraints other than those listed in section 2 above were experienced.

4.1. Invasive Species Listed Under the Third Schedule

Invasive Species listed under the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 [S.I. No. 477/2011], which were identified during the survey are listed in table 4-1 below.

Table 4-1: Third Schedule Invasive Species identified during the Invasive Species survey

Species	Irish Grid Reference	Description of Infestation	Photograph
Three-cornered Leek (*Allium triquetrum*)	H 41152 06761	1-no. small stand of Three-cornered Leek was noted on the border of a residential property, outside of the 30m ecological buffer. This infestation was noted opportunistically.	

4.2 High Risk Invasives

Invasive species of Ireland has a list of 52 species that are at risk of having a high impact. High risk invasives not listed under the third schedule identified during the survey are listed in table 4-2 below.

Table 4-2:High Risk Invasive Species identified during the Invasive Species survey

Species	Irish Grid Reference	Description of Infestation	Photographs
Cherry Laurel (*Prunus laurocerasus*)	H 40890 06452	A cherry laurel hedge was identified bordering a residential property within the 30m ecological survey buffer to the northwest of the site. This hedgerow was approximately 100m long, with breaks, and showed evidence of regular management.	

4.3 Medium Risk Invasives

Invasive species of Ireland has a list of 78 species that are at risk of having a medium impact. Medium risk invasive species identified during the survey are detailed in table 4-3 below.

Table 4-3: Medium Risk Invasive Species identified during the Invasive Species survey

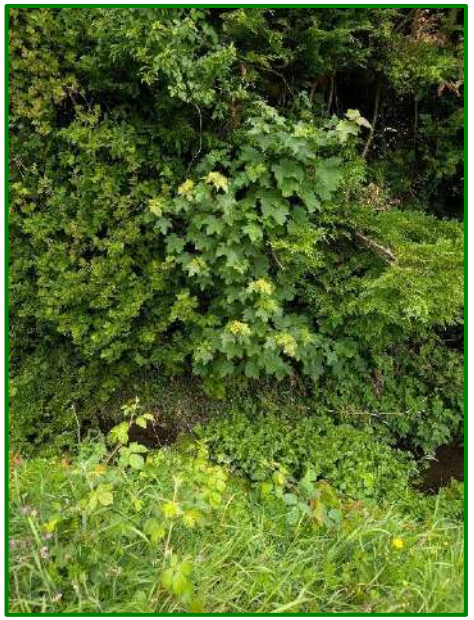
Species	Irish Grid Reference	Description of Infestation	Photographs
Buddleia (*Buddleja davidii*)	H 41098 06682	A large Buddleia bush was identified along a hedgerow, bordering a residential property. This species was recorded outside the 30m ecological buffer of the site. This infestation was noted opportunistically.	

Sycamore (*Acer pseudoplatanus)*	H 40981 06520	Sycamore was identified growing amongst a hedgerow along the northern boundary of the site works area.	
Sycamore (*Acer pseudoplatanus)*	H 41021 06576	Sycamore was identified growing along a hedgerow, within the 30m ecological buffer to the north of the site.	

Sycamore (*Acer pseudoplatanus)*	H 41228 06659	Young sycamore trees were noted growing amongst a treeline along the northeastern boundary of the site.	
Sycamore (*Acer pseudoplatanus)*	H 40969 06462	A line of large sycamore trees was noted in the northwest of the site.	

Sycamore (*Acer pseudoplatanus)*	H 41134 06121	A young sycamore tree was noted growing amongst a hedgerow, within the ecological buffer of the site.	
Sycamore (*Acer pseudoplatanus)*	H 41214 06149	A 3m^2 stand of sycamore was noted growing amongst a hedgerow within the ecological buffer of the site.	

Sycamore (*Acer pseudoplatanus)*	H 41002 06359	A line of three large Sycamore trees was noted within the site works area.	
Sycamore (*Acer pseudoplatanus)*	H 40983 06515	Scattered Sycamore was noted growing amongst a hedgerow to the northeast of the site.	

Sycamore (*Acer pseudoplatanus)*	H 41111 06625	2-no. large trees were noted growing along a hedgerow with trees along the boundary of the site.	
Sycamore (*Acer pseudoplatanus)*	H 41139 06650	Young sycamore trees were noted growing amongst a hedgerow along the boundary of the site works area.	

Sycamore (*Acer pseudoplatanus)*	H 41207 06652	Several Sycamore saplings were noted growing along a hedgerow along the boundary of the site works area.	
Wall Cotoneaster (*Cotoneaster horizontalis*)	H 41099 06681	A hedgerow dominated by Wall Cotoneaster was noted growing outside of the 30m ecological buffer of the site.	

Wall Cotoneaster (*Cotoneaster horizontalis*)	H 41320 06118	Wall Cotoneaster was widespread among an area of scrub along the north of the hospital carpark. The northeast corner of this was inside the 30m ecological buffer of the site. This infestation was very well established amongst the dense scrub.	
Wall Cotoneaster (*Cotoneaster horizontalis*)	H 41113 06118	A small stand of Wall Cotoneaster was noted growing along a fence line, outside of the 30m ecological buffer of the site.	

4.4 Low Risk Invasives

Low risk invasive species identified during the survey are detailed in table 4-4 below.

Table 4-4: Low Risk Invasive Species identified during the Invasive Species survey

Species	Irish Grid Reference	Description of Infestation	Photographs
Snowberry (*Symphoricarpos albus*)	H 41021 06576	Snowberry was identified amongst a hedgerow bordering the site. This infestation was approximately 2m^2.	

4.5 Other Invasive Species Located

A further two invasive species were identified within the survey area that are not listed under main Irish legislation. These two invasive species are:

- Hollyberry Cotoneaster (*Cotoneaster bullatus*); and
- Franchet's Cotoneaster (*Cotoneaster franchatii Bois*).

Table 4-5 below details these species on-site.

Table 4-5: Other Invasive Species identified during the Invasive Species survey

Species	Irish Grid Reference	Description of Infestation	Photographs

Hollyberry Cotoneaster (*Cotoneaster bullatus*)	H 41418 06105	A stand of Hollyberry Cotoneaster scrub was noted growing amongst an area of scrub to the south of the site, within the 30m ecological buffer.	
Hollyberry Cotoneaster (*Cotoneaster bullatus*)	H 41353 06108	Hollyberry Cotoneaster was noted growing amongst an area of scrub to the south of the site, within the 30m ecological buffer. This infestation was well established.	

Franchet's Cotoneaster (*Cotoneaster franchatii Bois*)	H 41144 06652	Franchet's Cotoneaster was noted growing amongst a hedgerow to the south of the site, along the boundary of the site works area.	
Hollyberry Cotoneaster (*Cotoneaster bullatus*)	H 41425 06121	Hollyberry Cotoneaster was noted growing amongst a treeline, within the 30m Ecological Buffer of the site.	

Hollyberry Cotoneaster (*Cotoneaster bullatus*)	H 41275 06148	A 10m stretch of well established Hollyberry Cotoneaster was noted growing along the south of the survey area, within the 30m ecological buffer.	

5. Impacts of Invasive Species

5.1 Third Schedule Invasives

5.1.1 Three-cornered Leek

Three-cornered leek (*Allium triquetrum*) is very aggressive, having the potential to rapidly occupy large tracts of land. Once established, it can have serious impacts on the natural habitats that it invades. Spread of the plant is mainly through seed. The plant forms dense clumps of growth. The white bulbs can also reproduce by vegetative propagation and can be spread by movement of soils. The aggressiveness of this plant's spread can cause a loss of biodiversity as plants forms dense and persistent stands that totally dominate the ground flora when conditions are suitable (moist and shaded).

5.2 High Risk Invasives

5.2.1 Cherry Laurel

Cherry Laurel *(Prunus laurocerasus)* reproduces through seeds, which are distributed by birds and other animals, and it also spreads laterally by layering (growing roots from stems where they touch the ground). When cut, Cherry Laurel will sucker from the roots and re-sprout from cut stems. Cherry Laurel grows in sun or shade, moist or dry soils, but does best in moist, well-drained soils. Cherry Laurel is considered an invasive species of high impact because it shades out native plants and degrades habitats. Very fast-growing and tolerant of disturbance and a wide range of conditions, Cherry laurel is a strong competitor and thrives in Irelands climate.

5.3 Medium Risk Invasives

5.3.1 Buddleia

Buddleia (*Buddleja davidii*) often known as the "Butterfly Bush", is an invasive species which has been spread throughout the rail network by both wind-borne seeds and the low pressure drag created by trains. The plant typically invades areas such as quarries, urban wastelands, railways, gravel workings, and building sites. Though many homeowners have Buddleia in their gardens due to the beautiful flowers and scent it produces, the plant grows aggressively and will become dense unless managed correctly. This species will cause other plants to die off, taking over the habitat in which it is located. The impacts of Buddleia are as follows:

- Loose surfaces of stone and soil embankments form a happy substitute for native slopes and screes, and the thickets of Buddleia formed can encroach on safety zones and hamper access for maintenance on the rail network.
- Buddleia also causes damage to built structures, both abandoned and used buildings, bridges, warehouses etc. Indeed, anywhere a small crack or softening of mortar exists which can admit a seed is as suitable for germination and growth as any fissure in a rock face. Deeply penetrating and thickening roots and woody stems soon force masonry apart to costly effect.
- As with Japanese knotweed and Himalayan Balsam, the denudation of the understorey of native plants renders banks susceptible to erosion in times of flood.

5.3.2 Sycamore

Sycamore (*Acer pseudoplatanus)* is a prolific invader of sensitive ecosystems like woodlands, forests, and riparian zones. With rapid growth, it thrives at woodland edges, old fields, and roadsides, even in densely shaded areas where minimal canopy light penetrates. Its abundant seed production, ranging from 10,000 to 170,000 viable seeds per mature tree, enables wind dispersal of winged seeds up to 50m. This prolific seeding can lead to dense stands of seedlings, outcompeting native species for resources and disrupting ecosystems. Established trees can displace native plants and wildlife, potentially impacting food and shelter sources without offering suitable alternatives.

5.3.3 Wall Cotoneaster

The stiff, semi-hardwood branches of Wall Cotoneaster fan out over each other. This provides a visual effect of filling in the gaps between the branches. This also allows the plant to dominate areas outcompeting native flora creating dense thickets once it becomes established. Seeds are spread over large areas by birds as they feed on the berries, seed longevity may be several years contributing to its widespread distribution. Wall Cotoneaster also forms an extensive root system which is difficult to remove.

5.4 Low Risk Invasives

5.4.1 Snowberry

Snowberry (*Symphoricarpos albus)* is a bushy rhizomatous thicket-forming shrub. It has been widely planted as cover for game in woodland, and used for hedging. Over time it is spreading into woodland, scrub, hedgerows and waste ground. This plant displaced native species by forming dense thickets by suckering. In suitable conditions the rhizome can grow rapidly, out-competing native plants. The berries are also poisonous to humans.

5.5 Other Invasives

5.5.1 Hollyberry Cotoneaster

Hollyberry Cotoneaster (*Cotoneaster bullatus*)is a large deciduous shrub within the genus Cotoneaster, native to Eastern Asia. The shrub produces red berries, which are fed upon by birds, which can disperse seed over large areas. Hollyberry Cotoneaster can outcompete native plants, and form extensive root systems which are difficult to remove.

5.5.2 Franchet's Cotoneaster

Franchet's Cotoneaster (*Cotoneaster franchatii Bois*) is a deciduous shrub from the genus Cotoneaster, native to southwestern China. Cotoneaster species seeds are spread over large areas by birds as they feed on the berries. The plant also forms an extensive root system which is difficult to remove.

6. Recommendations

6.1 Breeding Birds

All species of breeding birds are protected under legislation. Therefore, removal of vegetation on-site must be undertaken outwith the breeding season, which extends from 1st March to 31st August inclusive. Should these operations be required during this period, it is recommended that a qualified ecologist is appointed to survey the areas of vegetation prior to removal for evidence of use by nesting birds. Should any nesting birds be identified, the area will need to remain undisturbed until all dependent young have fledged the nest and the nest is no longer in use.

6.2 Invasive Species listed under the Third Schedule

Three-cornered Leek was found outside the site works area, and extended survey buffer at IGR: H 41152 06761. The species identified on-site listed under the 'Regulation 49 or 50: Prohibition on introduction and dispersal of certain species, which places restrictions on the introduction of any plant species listed in Part 1 of the Third Schedule' should be managed appropriately as this legislation states, a person shall be guilty of an offence if they:

- *Plant, disperse, allow or cause to disperse, spread or cause to grow the plant in the Republic of Ireland.*[10]

Current site plans indicate that this infestation is further than 7m from the site works area, therefore an Invasive Species Management Plan (ISMP) is currently not required to manage this infestation. If future plans include works within 7m of this infestation, an ISMP will be required for works to proceed.

6.3 Non-Scheduled Invasive Species

While not deemed as invasive as Third Schedule species, nonetheless, they are invasive species and should be managed appropriately. Due care and consideration should be given to the management of these species within the site to ensure this species does not disperse, spread or cause to grow elsewhere as part of construction activities. Physical and Chemical Control options are provided for each species.

6.3.1 Management Options for Cherry Laurel

Physical Control

Cut during the winter (September to March), focussing on older, seedbearing bushes first, and follow up with stump treatment immediately. Seeds dispersal tends to be very low, generally within a few metres of the bush, and research shows that destroying the oldest/core plant is more effective than starting at the edge of the infested area and

[10] EC Birds and Natural Habitats Regulations, Regulation 49 & 50

dealing with younger plants and seedlings. Pull up any seedlings if they come out easily and dig out any plants manually where feasible (don't leave any roots behind). Burn the cuttings but make sure you limit the number of fire sites since any bare ground created will result in more sites being available for the seeds to take hold.[11]

Chemical Control

Treat young bushes, any regrowth from stumps and any remaining seedlings with a foliar spray mixed with an adjuvant (this breaks down the waxy layer on the surface of the leaf) between May to October. Research seems to show that these sprays are most effective on younger bushes that are less than 1.3m tall. Treat mature bushes with a stem injection treatment, if available. If not, then apply a foliar spray as for other younger bushes.

6.3.2 Management Options for Buddleia

The infestation of Buddleia was noted outwith the 30m Ecological Survey Buffer, and as such, will not be spread by works in accordance with current site plans/layout. Management options are recommended below, if future plans include works within proximity to the area of Buddleia identified.

Physical Control

Management methods such as digging the species out are applicable only to minor infestations at the initial stage of invasion. Hand-picking of young plants is feasible but should be undertaken with care to avoid soil disturbance which can give rise to a flush of new seedling. Grubbing of mature stands as a sole attempt at control is not recommended for the same reason. After uprooting, it is essential to plant the ground in order to prevent a flush of new seedling growth.

When Buddleia is cut, the species grows back from the stump very vigorously. Mowing of young plants does not provide control as they re-sprout with vigour. Where removal of mature plants is not feasible in the short term, the flower heads should be cut off in June before seeds set[12].

Chemical Control

Recommended practice for the application of herbicides requires cutting back of plants to a basal stump during active growth (late spring to early summer) which is then treated (brushed on) immediately with a systemic weed killer mix. Foliar application of triclopyr or glyphosate may be adequate for limited infestations of younger plants but should be followed up at 6 monthly intervals. At this point it must be restressed that all Plant Protection Products must be used in accordance with the product label and with Good Plant Protection Practice as prescribed in the European Communities (Authorization, Placing on the Market, Use and Control of Plant Protection Products) Regulations, 2003 (S.I. No. 83 of 2003). Again, it should be noted that it is an offence to use Plant Protection Products in a manner other than that specified on the label. The methods just outlined are

[11] Cherry Laurel management - https://www.kentwildlifetrust.org.uk/sites/default/files/2018-06/KWT%20Land%20Mgt%20Advice_Sheet%209%20-%20Woodland%20management%20-%20control%20of%20rhododendron.pdf
[12] Lbid P63

not in accordance with the product label and so it will be necessary to discuss the use of such methods with the Pesticides Control Service with a view to seeking approval under the derogation procedures provided under the Plant Protection Regulations[13].

6.3.3 Management Options for Cotoneaster Species (Hollyberry, Franchet's, Wall)

Physical Control

Physical control includes grubbing cotoneasters at any time of the year, taking care to remove seedlings and small bushes using a mattock or spade. Care should be taken that fruits do not fall on the ground. Removing stumps and roots is vital as the species can resprout. Plants should be removed when the soil is moist and disturbed soil should be immediately replanted with desirable native species to prevent reinfestation.

Chemical Control

To kill small shrubs and control regrowth, the herbicides glyphosate or triclopyr can be applied as a wiper or by handheld sprayer when plants are actively growing between spring and autumn. Alternatively, these herbicides can be applied to cut stumps or to abraded bark.[14]

6.3.4 Management Options for Snowberry

Physical Control

Physical removal is only applicable where there are only minor infestations at the initial stage of invasion. Young plants may be hand-picked but care should be taken to avoid soil disturbance which could lead to further spread via new seedlings or re-rooting from cuttings. Plants should not be removed when in seed as there is a risk of spreading the seeds further. If removal of mature plants is not immediately feasible, then the flower heads should be removed in June before they go to seed. It is essential to plant the ground with native species immediately following removal to prevent new seedlings taking hold. Excavated material can be incinerated or disposed of to a licensed landfill.

Chemical Control

The best herbicide to use for snowberry is glyphosate. It may be eradicated by spraying with a strong glyphosate-based herbicide, which must be applied when the plant is in full leaf. Several applications may be required.

6.3.5 Management Options for Sycamore

Physical Control

Physical control of Immature Sycamore trees may involve:

[13] NRA Guidelines on the Management of Noxious Weeds and Non-native Species on National Roads 2010
[14] Invasive Species Compendium, Cotoneaster horizontalis: https://www.cabi.org/isc/datasheet/16870#tosummaryOfInvasiveness

- Manually removed by digging or hand-pulling, ensuring complete removal of the root system while minimizing soil disturbance.
- Mowing can effectively control groups of newly germinated seedlings, preventing regrowth from residual roots.
- Larger trees can be cut down, and their stumps either ground or regularly monitored and cut back to prevent new shoots from emerging.
- Girdling, involving the removal of a two-inch-wide ring of bark near the base of a tree, is effective for larger individuals but labour-intensive, best suited for isolated cases or along waterways where sycamore dominates the bank. Girdling is most effective when conducted in spring, with ongoing monitoring and removal of new sprouts required. [15]

Chemical Control

Recommended practice for the application of herbicides requires cutting back of plants to a basal stump during active growth (late spring to early summer) which is then treated (brushed on) immediately with a systemic herbicide. Alternatively, specialised herbicide plugs, containing a slow-release herbicide can be used to prevent regrowth of the stumps, these are inserted into drilled openings in the stump. This ensures direct application into the stump, the slow-release herbicide is designed to gradually seep into the cut plants stump, preventing the regrowth of Sycamore, addressing the root system and preventing the plant from resprouting. [16] At this point it must be restressed that all Plant Protection Products must be used in accordance with the product label and with Good Plant Protection Practice as prescribed in the European Communities (Authorization, Placing on the Market, Use and Control of Plant Protection Products) Regulations, 2003 (S.I. No. 83 of 2003). Again, it should be noted that it is an offence to use Plant Protection Products in a manner other than that specified on the label. The methods just outlined are not in accordance with the product label and so it will be necessary to discuss the use of such methods with the Pesticides Control Service with a view to seeking approval under the derogation procedures provided under the Plant Protection Regulations[17].

[15] Management Options for Sycamore: PEI Invasive Species Council - Sycamore Maple
[16] Sycamore Control - How to kill Sycamore tree - Theyardable
[17] NRA Guidelines on the Management of Noxious Weeds and Non-native Species on National Roads 2010

7. Figures

7.1 Site Boundary Map

7.2 Invasive Species Survey Map

Legend:

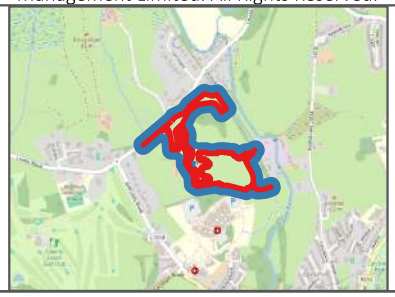
- 30m Ecological Buffer
- Site Boundary

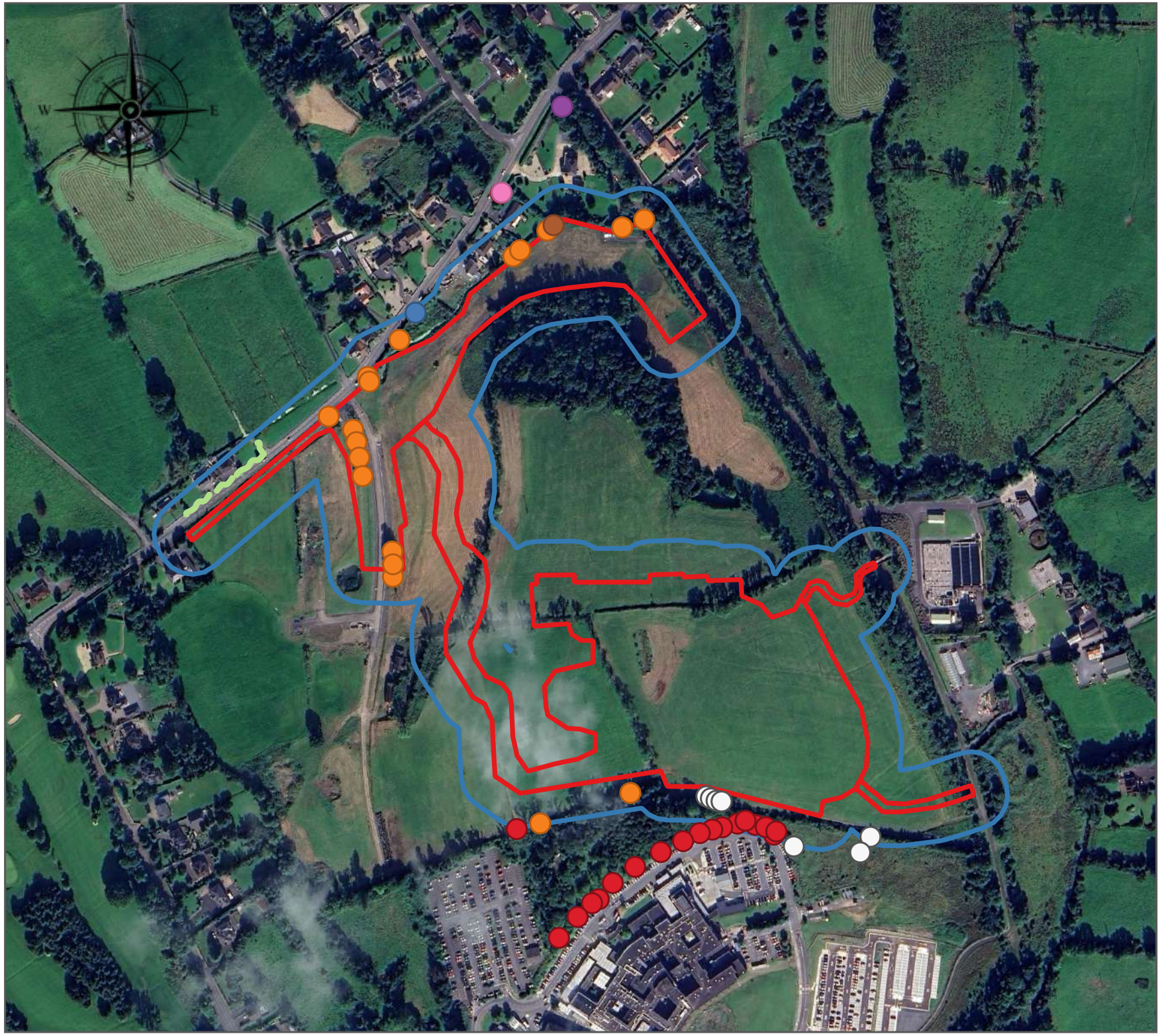
Project Title:	AEMP-2000519 Lisdaran, Cavan, Co. Cavan
Drawing Title:	Site Boundary Map
Drawn By: ER	Checked By: FM
Project No: 2000519	Drawing No: Figure 1
Scale: 1/2900	Date: 10th July 2025

AVRIO

Head Office-Enniskillen
Unit 5, Abbey House Business Centre,
11 Head Street, Enniskillen,
Co. Fermanagh, BT74 7JL

Website: www.avrio-env.com
Email: info@avrio-env.com
Phone: 028 6633 5608





Legend:

- Site Boundary
- 30m Ecological Buffer
- Hollyberry Cotoneaster
- Franchet's Cotoneaster
- Snowberry
- Cherry Laurel
- Sycamore
- Wall Cotoneaster
- Three-Cornered Leek
- Buddleia

Project Title: AEMP-2000519

Lisdaran, Cavan, Co. Cavan

Drawing Title: Invasive Species Map

Drawn By:	Checked By:
ER	FM
Project No:	**Drawing No:**
2000519	Figure 2
Scale:	**Date:**
1/2900	10th July 2025

AVRIO

Head Office-Enniskillen
Unit 5, Abbey House Business Centre,
11 Head Street, Enniskillen,
Co. Fermanagh, BT74 7JL

Website: www.avrio-env.com
Email: info@avrio-env.com
Phone: 028 6633 5608