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ENVIRONMENTAL CONSULTANTS

Ecological Impact Assessment (EcIA)

**Clare Glens River Walk Enhancement Plan, Co.
Tipperary**

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1. Introduction

The following document provides an Ecological Impact Assessment (EcIA) of the proposed improvement of the River Walk in Clare Glens, Co. Tipperary.

The proposed works area is located within the woodland area in Clare Glens, situated approximately 2.5km from the town of Newport. The length of the proposed path to be upgraded is approximately 1,165 m, with starting point at Grid reference: R 72996 59956 in proximity of Clare Glens Playground and finishing point at grid reference R 74024 59071 where the bridge links the path to the existing trail on the Limerick side of Clare Glens. Works are intended to follow the existing path on the Tipperary side.

This assessment is based upon a desk study and field work carried out by suitably qualified ecologists from Flynn Furney Environmental Consultants Ltd; the site was visited in March 2025.

This survey was carried out to evaluate the possible impacts of the project upon the environment, including impacts on habitat, particularly Annex I habitats (EU Habitats Directive), species of interest, particularly Annex I Bird Species (EU Birds Directive), and other features of ecological importance. The surveys further investigated whether 'stepping stones/Ecological Corridors' (as covered under Annex 10 of the EU Habitats Directive) or locally important habitats or species are likely to be impacted upon by the proposed development. In summary, this report is aimed to;

- Establish baseline ecological data for the proposed development site;
- Determine the ecological value of the identified ecological features;
- Assess the impact of the proposed development on ecological features of value (biodiversity);
- Suggest mitigation measures to avoid, reduce, remedy or compensate impacts;
- Suggest ecological enhancements wherein possible;
- Identify any residual impacts after mitigation and compensation.

Note: The following definitions are used for the terms "impact" and "effect" as per CIEEM guidelines:

Impact – Actions resulting in changes to an ecological feature. For example, the construction activities of a development removing a hedgerow.

Effect – Outcome to an ecological feature from an impact. For example, the effects on a dormouse population from loss of a hedgerow.

2. Legislation and planning policy

2.1 European Council Directives

2.1.1 Council Directive on the Conservation of Natural Habitats of Wild Fauna and Flora (92/43/EEC) (The Habitats Directive)

The main aim of the Directive is to promote the maintenance of biodiversity through the conservation of natural habitats and wild species listed on the Annexes of the Directive. Member States are required to take measures to maintain or restore, at favourable conservation status, biodiversity whilst taking account of economic, social, cultural requirements and regional and local characteristics. It gives effect to site and species protection measures through establishment of the Natura 2000 network and designation of European Sites including Special Areas of Conservation (SAC) and Special Protected Areas (SPA). It also establishes a list of species (other than birds) whose habitats must be protected to secure their survival. These priority species and habitats are subject to a higher level of protection. The Directive also requires appropriate assessment of any plan or project not directly connected with or necessary to the management of a European Site, but likely to have significant effects upon a European Site, either individually or in combination with other plans or projects.

2.1.2 Council Directive on the Conservation of Wild Birds (2009/147/EC) (The Birds Directive)

The Directive provides a framework for the conservation and management of, and human interactions with, wild birds in Europe. It makes provisions for the maintenance of the wild bird populations across their natural range; conserves the habitats for rare or vulnerable species listed in Annex I and of migratory species through the classification of SPAs and provides protection for all wild birds.

2.2 Irish Legislation

2.2.1 The European Communities (Birds and Natural Habitats) (Amendment) Regulations 2015 (S.I. No. 355 of 2015)

The European Communities (Birds and Natural Habitats) (Amendment) Regulations provides that the following shall be construed together as one: Wildlife Act 1976 Wildlife (Amendment) Acts of 2000, 2010 and 2012 European Communities (Birds and Natural Habitats) (Restrictions of the Use of Poison Bait) Regulations 2010 European Communities (Birds and Natural Habitats) Regulations 2011 European Communities (Birds and Natural Habitats) (Amendment) Regulations of 2013, 2015 Wildlife Amendment Bill 2016 (proposed legislation)

2.2.2 European Communities (Birds and Natural Habitats) Regulations 2011 to 2015

The Regulations give effect to requirements relating to the designation of protected sites under the Birds Directive and Habitats Directive. The Regulations provide for the protection and management of European Sites and place obligations on all public authorities to have regard to the requirements of the Habitats Directive beyond the realms of planning related consents issued under the Planning and Development Act 2000, as amended (the PDA). The Regulations also provide for the protection of species of European importance.

2.2.3 Wildlife Acts 1976 to 2012

The Acts provides for inter alia the protection of wildlife. The Acts prohibit the intentional killing, taking or injuring of certain wild birds or wild animals; or the intentional destruction, uprooting or picking of certain wild plants.

2.2.4 Wildlife Amendment Bill 2016

The purpose of the Bill is to provide for the implementation of a reconfiguration of the Raised Bog Natural Heritage Area Network arising from (i) the proposals from the Review of Raised Bog Natural Heritage Area Network published in January 2014; (ii) an assessment of the effects on the environment of the proposals arising from the Review and, if required, any other screening for an assessment or as the case may be, assessment, including public consultation undertaken and (iii) observations or submissions received during the course of public consultation.

Taken as a whole, nature conservation legislation is of key importance in undertaking EcIA for proposed development as it shapes planning policy.

3. Methodology

3.1 Desk work

A desk study was carried prior to field work using an array of online resources. The following were used to gain an understanding of the site:

- EPA Maps;
- EPA Appropriate Assessment Tool;
- The Geological Survey of Ireland;
- Geohive maps;
- The National Biodiversity Data Centre archives;
- An Bord Pleanála's online database;
- NPWS database;
- Irish Wetland Bird Survey archives.

The relevant Natura 2000 sites were identified through the EPA appropriate assessment tool, and the shapefiles of the boundaries of such sites downloaded from NPWS website. Site synopsis and conservation objectives were considered for each of the relevant Natura 2000 sites. A species list for the relevant Km squares was generated from the NBDC archives. Soil type, underlying bedrock, groundwater vulnerability, and hydrological features were also investigated.

In order to establish the potential risk of impacts the standard source-pathway-receptor (SPR) model was employed. The model assumes that for the risk of an impact to be significant or relevant all three of the following elements must be present:

- Source – any factor that might interfere with natural ecological processes. E.g. run off from development site
- Pathway – any element connecting source and receptor. E.g. watercourse
- Receptor – any feature (species or habitat) of ecological importance. E.g. Natura 2000 site

Although the presence of all three elements indicates the possibility of a risk, this might not occur, nor it might be significant. The significance of the impact is in fact dependent on the characteristics of the three elements, rather than on their mere presence. On the other hand, the absence of one of the elements allows to exclude the likelihood of an impact altogether.

3.2 Field work

Field work was carried on three separate days, on the 11th and the 25th of March and the 1st of April 2025 by a team of suitably experienced ecologists from Flynn Furney Environmental Consultants Ltd. Field work was carried following the JNCC guidelines illustrated in *Handbook for Phase 1 habitat survey - a technique for environmental audit* (2010), Smith et al. (2010) *Best Practice Guidance for Habitat Survey and Mapping*, and the *Census Catalogue of the Flora of Ireland* (Scannell & Synnott, 1987). Habitats were recorded according to Fossitt's Guide to Habitats in Ireland (Fossitt, 2000). Land use and weather conditions were also noted, as well as the dominant species for each habitat identified. Invasive alien species were recorded, along with relevant ecological features. Signs of presence of animals were also noted.

3.3 Assessment methodology

This report has been prepared in accordance with the guidelines described in the *Chartered Institute of Ecology and Environmental Management Guidelines for Ecological Impact Assessment in the UK and Ireland: terrestrial, freshwater and Coastal* (CIEEM, 2018), and the *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (NRA, 2009). These were used in determining the significance of ecological features, characterising and assessing the effects of impacts, and describing the possible mitigation measures and opportunities for ecological enhancement.

Species and habitat were assessed referring to their conservation status, the extent of their range, abundance, distribution and their quality; Environmental processes, historical context, and ecological relationships were taken into account when assessing potential impacts of the proposed works. Similarly, timing of works, frequency, reversibility and magnitude were also considered. Avoidance was prioritized over other mitigation measures where possible, and where necessary, the mitigations were incorporated into the project design.

3.3.1 Determining ecological value

The 'ecological value' of an area or feature is defined with reference to geographical context. That is, whether it is of value locally, regionally, nationally or internationally. This is assessed by ecologists on reviewing survey outcomes. Key criteria are the presence of designated sites, the site or feature containing protected species or areas of high biodiversity. The criteria for ecological value are given in Table 1, below.

Table 1. Information ecological value of habitats.

Ecological Value	Criteria
International	• 'European Sites' including Special Areas of Conservation (SAC) & Special Protection Areas (SPA). • Sites that satisfy the criteria for designation as a 'European Site' (see Annex III of the Habitats Directive, as amended). • Features essential to maintaining the coherence of the Natura 2000 Network. • Sites containing 'best examples' of the habitat types listed in Annex I of the Habitats Directive. • Resident or regularly occurring populations (assessed to be important at the national level) of the following: • Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or • Species of animal and plants listed in Annex II and/or IV of the Habitats Directive. • Ramsar Sites • World Heritage Sites (Convention for the Protection of World Cultural Natural Heritage, 1972). • Sites hosting significant species populations under the Bonn Convention • Sites hosting significant populations under the Berne Convention
National	• Areas of Special Scientific Interest (ASSI) or Natural Heritage Area (NHA).

	• National Nature Reserves (NNR). • Marine Nature Reserves (MNR). • Area of Outstanding Natural Beauty (AONB). • Refuge for species protected under the Wildlife (Northern Ireland) Order 1985 (as amended). • Undesignated sites fulfilling the criteria for designation as an ASSI; NNR; MNR; and/or refuge for species protected under the Wildlife (Northern Ireland) Order 1985 (as amended). • Resident or regularly occurring populations (important at the national level) of the following: • Species protected under Wildlife (Northern Ireland) Order 1985 or Wildlife Act 1976, as amended); and/or • Species listed on the relevant Red Data list. • Sites containing 'viable areas' of the habitat types listed in Annex I of the Habitats Directive.
Regional	• Sites of Local Nature Conservation Importance (SLNCI). • Areas subject to a Tree Preservation Order. • Resident or regularly occurring populations (assessed to be important at the Regional level) of the following: • Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; • Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; • Species protected under the Wildlife (Northern Ireland) Order 1985 (as amended); and/or • Species listed on the relevant Red Data list. • Sites containing areas of the habitat types listed in Annex I of the Habitats Directive that do not satisfy the criteria for valuation as of International or National importance. • Regionally important populations of species or viable areas of seminatural habitats or natural heritage features identified in the National or Local Biodiversity Action Plan (BAP), if this have been prepared. • Sites containing semi-natural habitat types with high biodiversity in a regional context and a high degree of naturalness, or populations of species that are uncommon within the region. • Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level
Local	• Locally important populations of priority species or habitats or features of natural heritage importance identified in the Local BAP, if this has been prepared; • Resident or regularly occurring populations (assessed to be important at the Local level) of the following: • Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; • Species of animal and plants listed in Annex II and/or IV of the Habitats

	Directive; • Species protected under the Wildlife (Northern Ireland) Order 1985 (as amended); and/or • Species listed on the relevant Red Data list. • Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality; • Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value • Sites containing small areas of semi-natural habitat that are of some local importance for wildlife; • Sites or features containing non-native species that are of some importance in maintaining habitat links.
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3.3.2. Determining the significance of an effect

The term ‘significant effect’ as used in this report follows guidance (CIEEM, 2018) and is an effect that either supports undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general. In the case of designated sites, a negative significant effect would be one that undermines the conservation objectives and targets for that site.

The significance of impacts on habitats was determined with reference to the value of the feature being affected and the magnitude of the impact. Impacts are considered ecologically significant at a stated geographic scale or are considered not significant. The impacts which may be expected from the proposed works are assessed in the following chapters. The criteria for assessment of significance of effects is given in table 2, below. It should be noted that significant effects may also include beneficial effects.

Table 2. Criteria for assessing significance of effects

Impact Significance	Effect	Criteria
Significant Negative Effect	Major Adverse	• Loss of, permanent damage to or adverse impact on any part of a site of international or national importance; • Loss of a substantial part or key feature of a site of regional importance; • Loss of favourable conservation status (FCS) of a legally protected species; • Loss of or moderate damage to a population of nationally rare or scarce species.
	Moderate Adverse	• Temporary disturbance to a site of international or national importance, but no permanent damage; • Loss of or permanent damage to any part of a site of regional importance;

		• Loss of a key feature of local importance; • A substantial reduction in the numbers of legally protected species such that there is no loss of FCS, but the population is significantly more vulnerable; • Reduction in the amount of habitat available for a nationally rare or scarce species, or species that are notable at a regional or county level.
No significant effect	Minor Adverse	• Temporary disturbance to a site of regional value, but no permanent damage; • Loss of, or permanent damage to, a feature with some ecological value in a local context but that has no nature conservation designation; • A minor impact on legally protected species but no significant habitat loss or reduction in FCS; • A minor impact on populations of nationally rare or scarce species or species that are notable at a regional or county level.
	Negligible	• No impacts on sites of international, national or county importance; • Temporary disturbance or damage to a small part of a feature of local importance; • Loss of or damage to land of negligible nature conservation value; • No reduction in the population of legally protected, nationally rare, nationally scarce or notable (regional level) species on the site or its immediate vicinity. • Beneficial and adverse impacts balance such that resulting impact has no overall affect upon feature.
	Minor Beneficial	• A small but clear and measurable gain in general wildlife interest, e.g. small-scale new habitats of wildlife value created where none existed before or where the new habitats exceed in area that habitats lost.
Significant positive effect	Moderate Beneficial	• Larger new scale habitats (e.g. net gains over 1 ha in area) created leading to significant measurable gains in relation to the objectives of biodiversity action plans
	Major Beneficial	• Major gains in new habitats (net gains of at

		least 10 ha) of high significance for biodiversity being those habitats, or habitats supporting viable species populations, of national or international importance cited in Annexes I and II of the habitats Directive or Annex I of the Birds Directive.
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3.3.3 Determining the duration of impact

The duration of impact must also be considered when assessing overall ecological impacts. Criteria for assessment of duration of impacts used (EPA 2002), the following terms are defined when quantifying duration:

- Temporary: up to 1 year
- Short-term: from 1-7 years
- Medium-term: 7-15 years • Long-term: 15-60 years
- Permanent: over 60 years The likelihood of impacts should also be defined.

Assessment of likelihood of impact followed CIEEM guidelines. These assesses likelihood as follows:

- Almost Certain: probability estimated at greater than 95%
- Probable or Likely: probability estimated between 50% and 95%
- Unlikely: probability estimated between 5% and 50%
- Extremely Unlikely: probability estimated at less than 5%

4. Ecological assessment

4.1 Site location

The proposed path to be upgraded is situated within the Clare Glens woods, located approximately 2.5 km from the town of Newport in Co. Tipperary. The path starts at the grid reference R 72996 59956 near Clare Glens Playground and ends at grid reference R 74024 59071, where a bridge connects the path to the existing trail on the Limerick side of Clare Glens. The total length of the path is approximately 1,165 m.

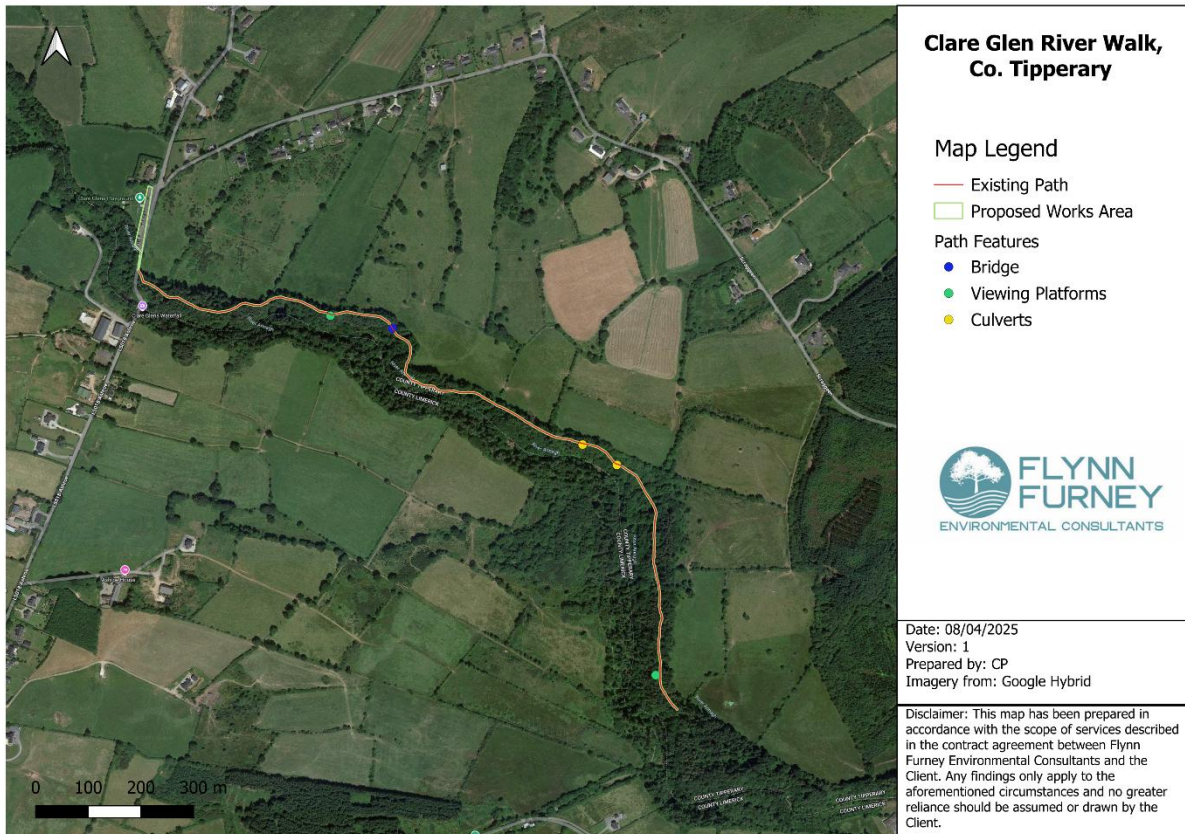


Figure 1. Satellite image with the proposed works area marked in red and light green

4.2 Receiving environment

A description of the habitats of significant ecological value that were observed within the immediate surroundings of the works area are listed below, with descriptions adapted from “A Guide to Habitats in Ireland” by Julie A. Fossitt, 2000 (Figure 2).

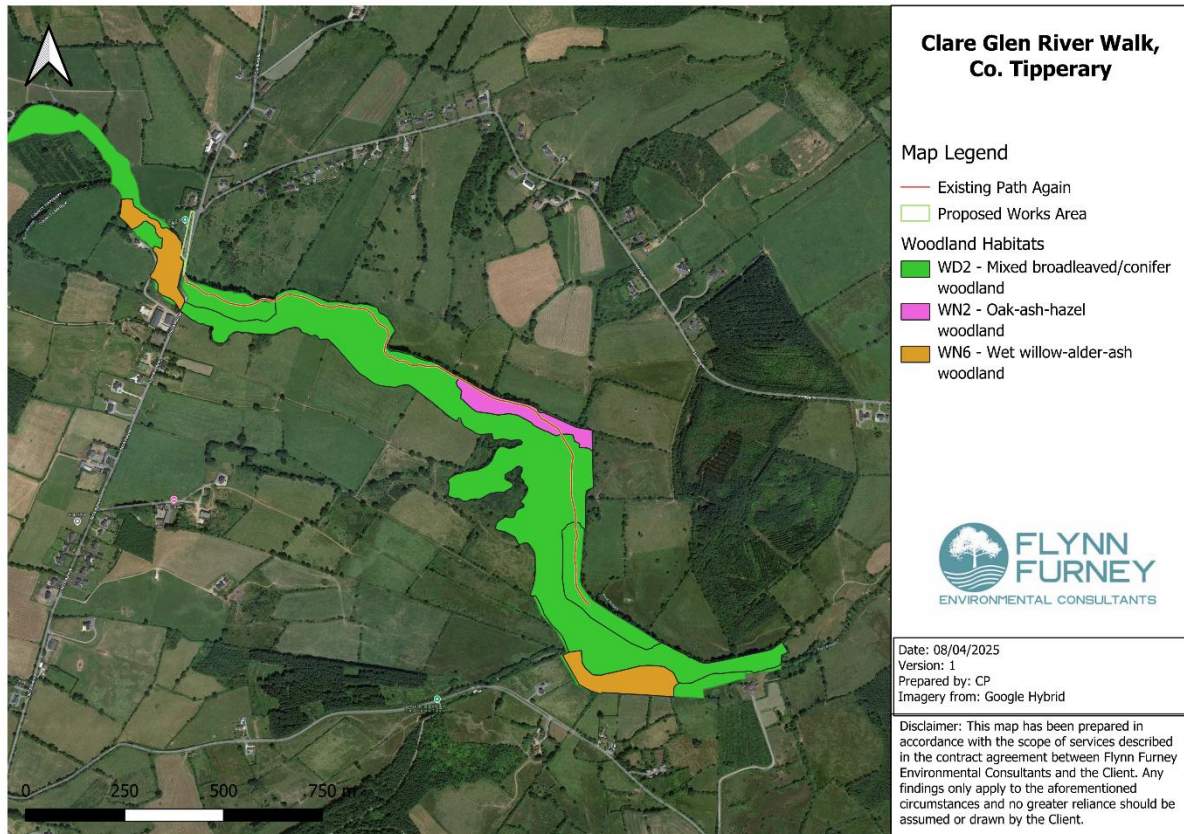


Figure 2. Map of woodland habitats occurring within and adjacent to the footprint of the proposed routes.

4.2.1 Mixed Broadleaf/Conifer Woodland (WD2)

This is the predominant habitat type across Clare Glens. The woodland canopy includes native species such as oak (*Quercus sp.*), Ash (*Fraxinus excelsior*), and a variety of non-native species such as Sitka Spruce (*Picea sitchensis*) and Beech (*Fagus sylvatica*). Holly (*Ilex aquifolium*) dominates the understory; however, the non-native Rhododendron (*Rhododendron ponticum*) and Cherry Laurel (*Prunus laurocerasus*) are abundant throughout the woodland. The ground vegetation includes species such as Greater Woodrush (*Luzula sylvatica*), Wood-sorrel (*Oxalis acetosella*) and Wood Anemone (*Anemone nemorosa*). Killarney fern (*Trichomanes speciosum*) is also recorded in several locations throughout this habitat.

4.2.2 Oak- Ash-Hazel- Woodland (WN2)

A narrow strip of this habitat exists in the north east corner of the site (Fig. 2). This habitat is dominated by Oak (*Quercus spp.*), with Ash (*F. excelsior*) and Hazel (*Corylus avellana*) also present. Rhododendron (*Rhododendron ponticum*) and Cherry Laurel (*Prunus laurocerasus*) are prominent in the understory.

4.2.3 Willow-Alder-Ash (WN6)

This habitat occurs outside the footprint of the works area, on the eastmost and westernmost sides of Clare Glens. Species present are typical of this habitat, with Grey Willow (*Salix cinerea*) and Alder (*Alnus glutinosa*) present in the canopy, and species such as Wood Anemone (*A. nemorosa*), Creeping Buttercup (*Ranunculus repens*), and Meadowsweet (*Filipendula ulmaria*) carpeting the ground layer.

4.2.4 Upland Eroding River (FW1)

The Annagh River runs along the project area within Clare Glens. The river in Clare Glens is fast flowing and has a steep gradient, with several waterfalls and rapids. The riverbed is characterized by exposed bedrock, and loose rock, with rare areas of deposition. The moss *Fontinalis antipiretica* is found across exposed rocks.

4.2.5 Stonewalls and Other Stonework (BL1)

This habitat borders the northern edge of the site. Remnants of old stone walls are also located within the woodland itself. This habitat supports a diverse bryophyte community, with species such as *Thamnobryum alopecurum*, *Hypnum cupressiforme*, *Atrichum undulatum*.

4.2.6 Improved Agricultural Grassland (GA1).

This highly modified habitat surrounds the areas around Clare Glens, and it is dominated by Rye grass (*Lolium perenne*), Fescue (*Festuca spp.*) and Cocksfoot Grass (*Dactylis glomerata*).

4.2.7 Buildings and Artificial Surfaces (BL3)

This broad category encompasses buildings, roads, and parking spaces present in the areas near the northern side of Clare Glens woods. No species were recorded in this habitat.

4.3 Surface and ground water

A review of available data on the catchments and sub-catchments was carried out. This used data from the Environmental Protection Agency and other sources such as www.catchments.ie. The recorded Q values of river waterbodies were examined. A Q-value is assigned under the WFD through the analysis of macroinvertebrate populations and is an indication of water quality status. Under the requirements of the Water Framework Directive all watercourses must achieve good status within the required time frame. The Water Framework Directive (WFD) was transposed into Irish law by the European Communities (Water Policy). It represents a legal requirement to carry out water protection and water management measures that are integrated, targeted, and which ultimately must be effective in achieving the objective of at least 'good status' for Irish waters by 2027.

WFD Q-Value Scores Along with other parameters (fish, morphology, chemistry) The Q value is used to determine the ecological status of the waterbody, which is an action required under the obligations set out in the EU Water Framework Directive. Ireland is now in the third cycle of the Water Framework Directive. Under the requirements of the Water Framework Directive, all watercourses must achieve good status within the required time frame. If a waterbody is unlikely to achieve good status, then it is deemed to be At Risk. The table below summarises the Q values in relation to Water Framework Directive status.

Table 3. Q-value scoring and ecological designations

Q-value	WFD Status	Pollution Status	Condition
5, 4-5	High	Unpolluted	Satisfactory
4	Good	Unpolluted	Satisfactory
3-4	Moderate	Slightly Polluted	Unsatisfactory
3, 2-3	Poor	Moderately Polluted	Unsatisfactory
2, 1-2, 1	Bad	Seriously Polluted	Unsatisfactory

The area is hydrologically important, with several recognised EPA watercourses located in proximity of the proposed works area. The most notable is River Annagh (EPA CODE: 25A020), which splits Clare Glens across its length, running westward to the south of the project area. (Figure 3). This river falls within the WFD sub catchment Kileengarriff_SC_010 (25D_4). From its source on the Mauherslieve and Foilduff mountains, the Annagh River links to the Shannon Catchment via the Killengarriff and the Mulkear Rivers, and it eventually discharges into the Shannon Estuary after flowing westward for approximately 24.5 km. Table 4 below reports on the status of River Annagh as well as other relevant watercourses as collated from the EPA map viewer under WFD 2016-21 and river flow databases.

Table 4. Summary of the status of relevant watercourses.

EPA segment name	Relation to proposed works area	WFD risk	Latest Status (2016-21)	Notes on Pressures
ANNAGH (TIPPERARY)_030	Adjacent to works area	Not at Risk	Q Value 4 - Good	No threats
ANNAGH (TIPPERARY)_020	Upstream of the works area	Not at Risk	Q Value 4 - Good	No threats
KILLEENGARRIFF_010	Downstream of the works area	Not at Risk	Q Value 4 - Good	No threats

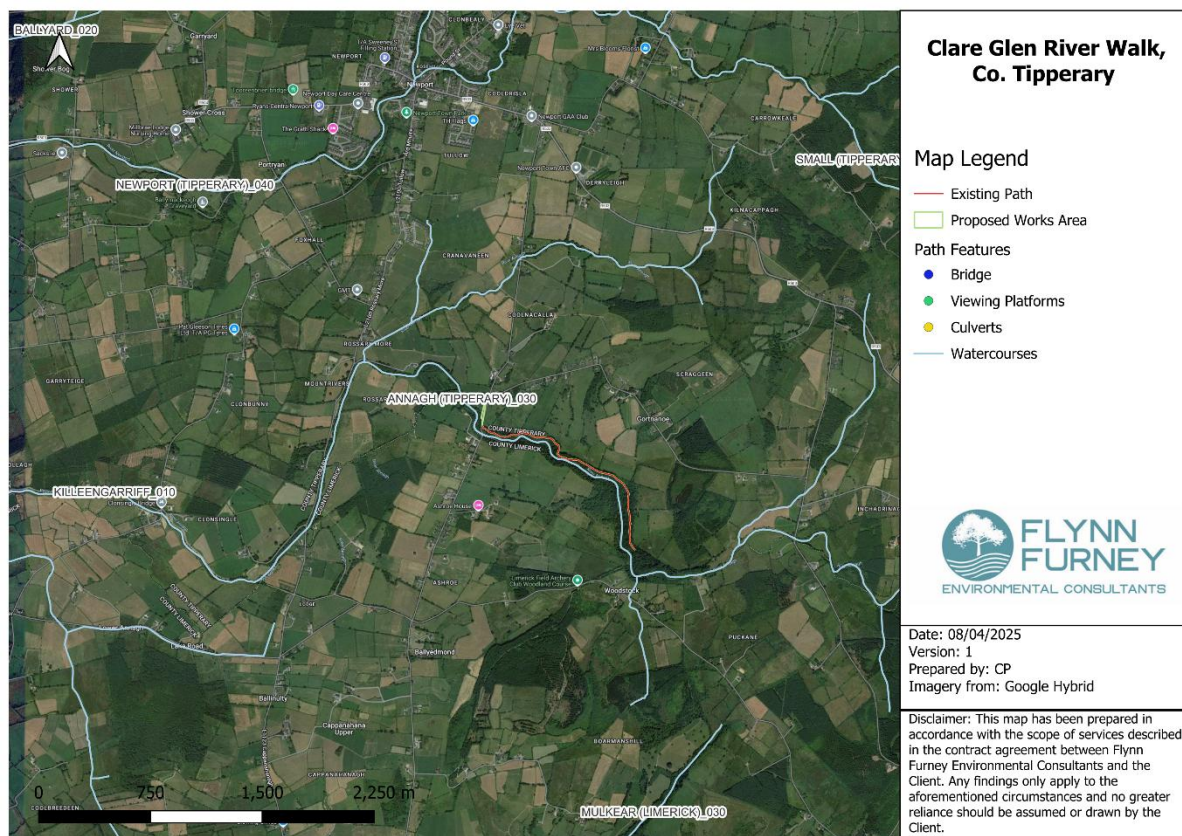


Figure 3. Overview of the local water courses.

Groundwater vulnerability under the works is described as “rock at near surface” throughout the project area, with the surrounding areas being described as “extreme”. (Figure 4). Subsoil permeability not yet been mapped for the project area (Figure 5). Given the lack of works at depth, no risk to any designated or local site is predicted as a result of possible impacts to groundwater.

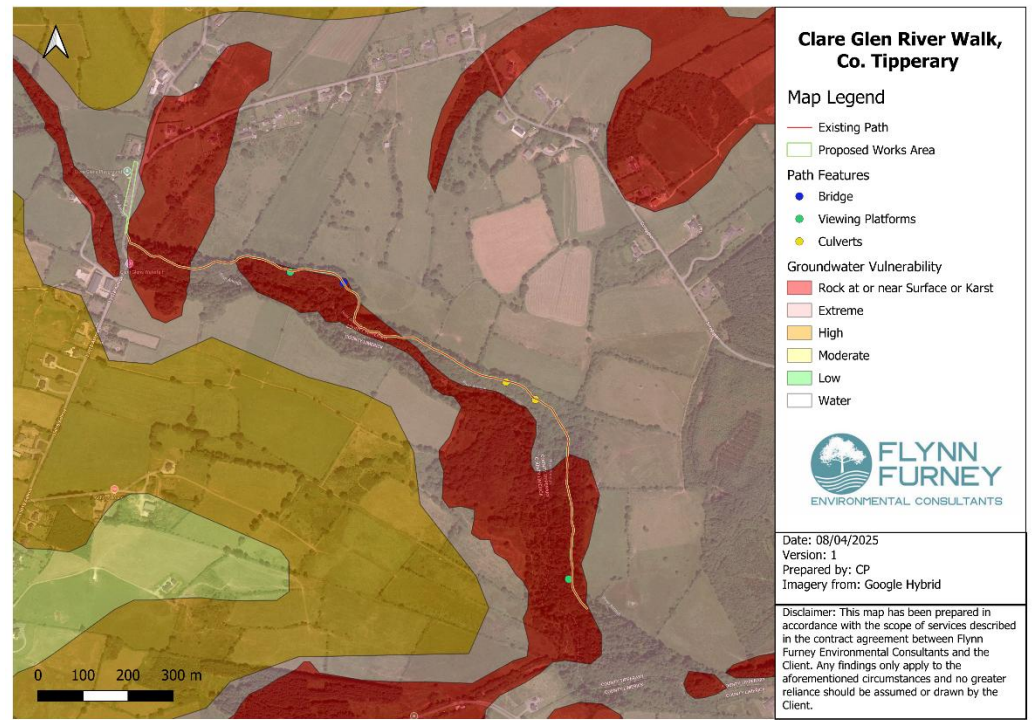


Figure 4. Overview of the groundwater vulnerability in the Proposed Works Area.

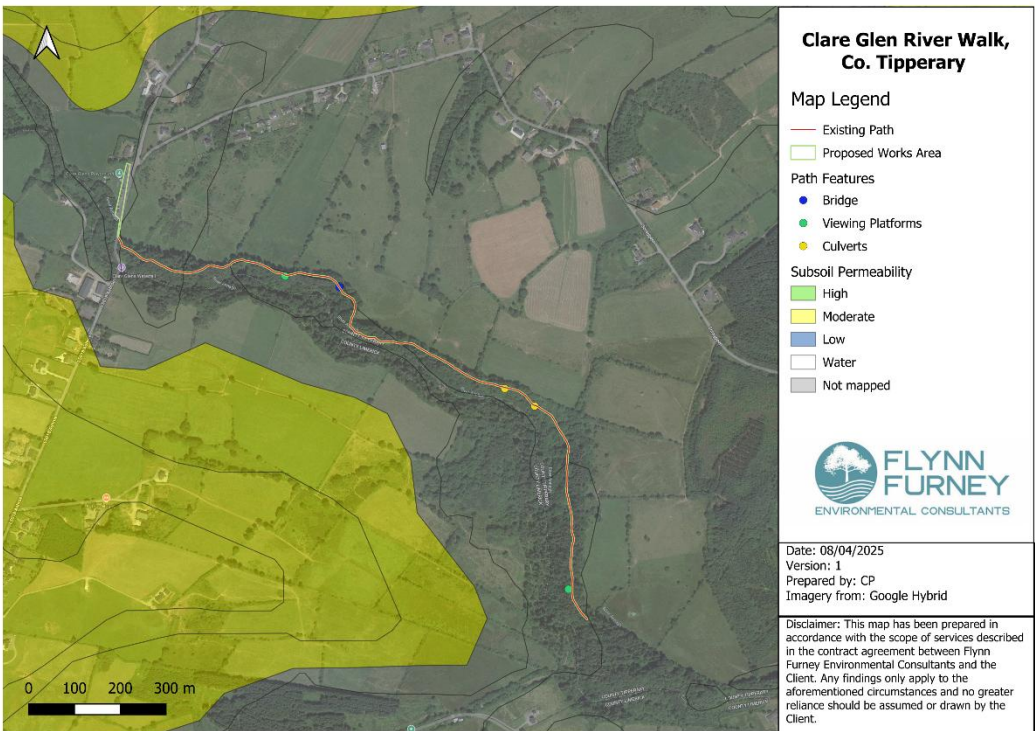


Figure 5. Overview of the Subsoil Permeability in the Proposed Works Area

4.4 Breeding Birds

All species of wild bird that occur naturally in Ireland are fully protected at all times by the Wildlife Act and relevant amending legislation. Similarly, all birds naturally occurring in the wild state are afforded a measure of protection by the EU Birds Directive but derogations may reduce protection for specific reasons. As such, any vegetation clearance must be carried out outside of the bird nesting season (March 1st - August 31st). A dedicated breeding bird survey was not carried out. However, all birds seen and heard were recorded and are reported in Table 5.

Table 5. List of bird species observed during the survey

Species name	Scientific name	Conservation Status
Blackbird	<i>Turdus merula</i>	Green
Blue Tit	<i>Cyanistes caeruleus</i>	Green
Common Chiffchaff	<i>Phylloscopus collybita</i>	Green
Dipper	<i>Cinclus cinclus</i>	Green
European Robin	<i>Erithacus rubecula</i>	Green
Grey Wagtail	<i>Motacilla cinerea</i>	Red
Song Thrush	<i>Turdus philomelos</i>	Green
Treecreeper	<i>Certhia familiaris</i>	Green
Wren	<i>Troglodytes troglodytes</i>	Green

4.5 Amphibians

While suitable habitat for both common frog (*Rana temporaria*) and smooth newt (*Lissotriton vulgaris*) was noted during the survey in the wetter areas of the woodland, no spawning was discovered within the works area. Frog spawn was however recorded in the adjacent green field (Grid reference: R 73197 59914). This is however located outside of the footprint of the works area. This reflects the NBDC records for the area encompassing the project site, which reports one record for Common Frog (*Rana temporaria*) within 2km of the project area.

4.6 Mammals

The NBDC records for the 2km grid squares encompassing the project area were examined. These were tetrads R75P, R75J¹. Mammal species reported are reported in Table 6.

Table 6. Mammal records in proximity of the proposed works area

¹ NBDC tetrad R75P, R75J. Online available at: <https://maps.biodiversityireland.ie/Map> Accessed March 2025.

Tetrad	Species name	Title of dataset	Designation
R75P, R75J	Eurasian Badger (<i>Meles meles</i>)	Badger Setts of Ireland Database	Protected species: Wildlife Acts
R75P, R75J	European Otter (<i>Lutra lutra</i>)	Atlas of Mammals of Ireland 2016-2025	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex II Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
R75J	Eurasian Red Squirrel (<i>Sciurus vulgaris</i>)	Atlas of Mammals in Ireland 2016-2025	Protected Species: Wildlife Acts
R75J	Pine Marten (<i>Martes martes</i>)	Atlas of Mammals in Ireland 2016-2025	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex V Protected Species: Wildlife Acts

Notably, While burrows were noted along the boundary wall these were considered to be unsuitable for badgers (*Meles meles*), and it was determined that no badger activity occurs in this area. Similarly, no badger sett was recorded within the footprint of the works area. No signs of Red Squirrel (*Sciurus vulgaris*) were recorded however Pine Marten (*Martes martes*) droppings were recorded in several locations, indicating the presence of the mammal within the woods. Similarly, Otter (*Lutra lutra*) droppings were recorded at two locations along the Annagh River, indicating that otter likely uses the river for foraging. No holts, couches or slides were recorded.

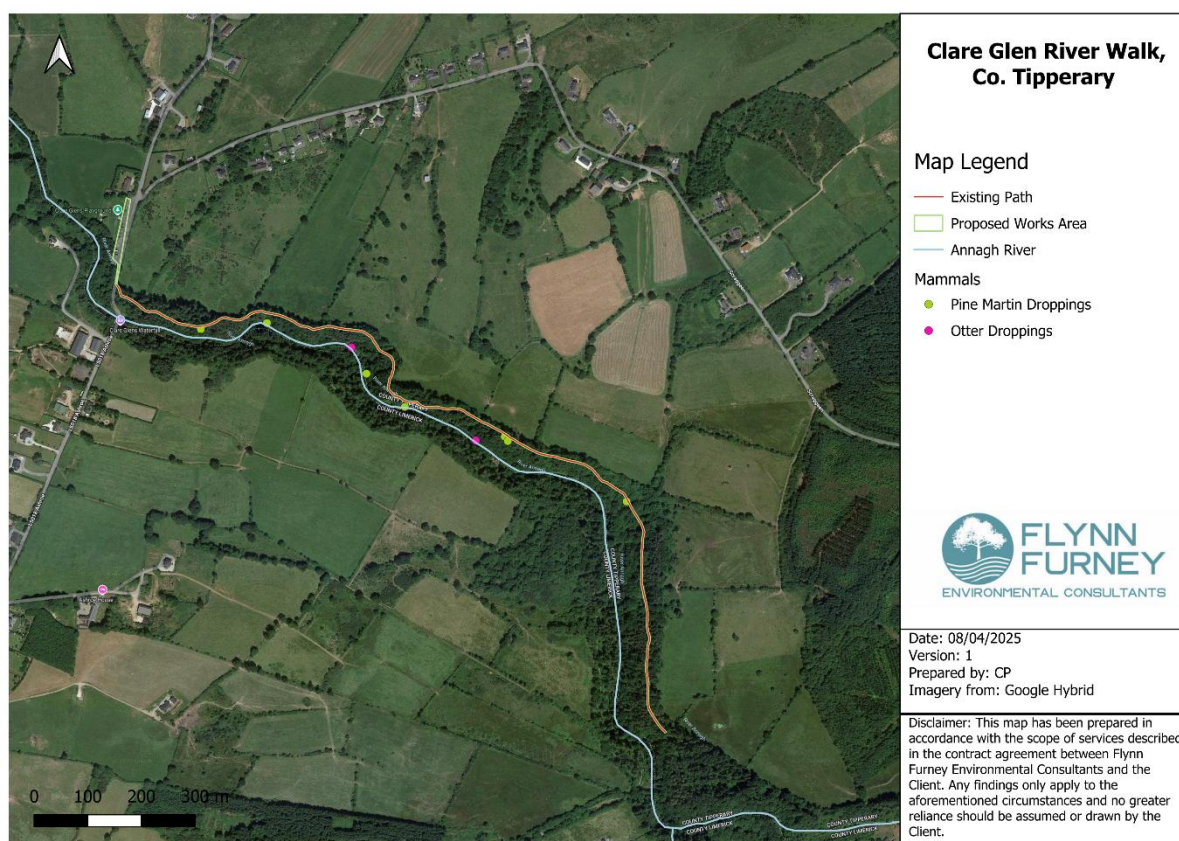


Figure 6. Locations of Otter and Pine Marten droppings recorded during the survey.

4.7 Bats

The NBDC records for the 2km grid squares encompassing the project area were analysed for bats as part of the desk survey. No Bats were recorded for Square Grids R75P, and R75J.

Overall, the suitability index for this area has been assigned a score of 33.89. Specific suitability for each species is described in the table below:

Table 3. Bat habitat suitability index of the proposed works area

Common name	Scientific name	Suitability Index
<i>Lesser horseshoe bat</i>	<i>Rhinolophus hipposideros</i>	4
<i>Brown long-eared bat</i>	<i>Plecotus auritus</i>	47
<i>Natterer's bat</i>	<i>Myotis nattereri</i>	40
<i>Whiskered bat</i>	<i>Myotis mystacinus</i>	42
<i>Soprano pipistrelle</i>	<i>Pipistrellus pygmaeus</i>	45
<i>Leisler's bat</i>	<i>Nyctalus leisleri</i>	44
<i>Common pipistrelle</i>	<i>Pipistrellus pipistrellus</i>	50
<i>Nathusius' pipistrelle</i>	<i>Pipistrellus nathusii</i>	1
<i>Daubenton's bat</i>	<i>Myotis daubentonii</i>	32
All Bats	//	33.89

All trees that have the potential to be removed due to construction works for the proposed routes were recorded and their ecological value assessed. One tree was noted to have moderate bat potential due to storm damage. This tree is to be removed to allow for the construction of the upper viewing platform.

All Irish bat species are protected under the Wildlife Act (1976) and Wildlife Amendment Act (2000). Also, the EC Directive on The Conservation of Natural habitats and of Wild Fauna and Flora (Habitats Directive 1992), seeks to protect rare species, including bats, and their habitats and requires that appropriate monitoring of populations be undertaken. Across Europe, they are further protected under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), which, in relation to bats, exists to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was instigated to protect migrant species across all European boundaries. The Irish government has ratified both these conventions. All bats are listed in Annex IV of the Habitats Directive and the greater horseshoe bat and lesser horseshoe bat are further listed under Annex II.

4.8 Invasive Species

Ireland is a signatory of a number of international treaties and conventions, including the Convention on Biological Diversity. Such treaties and conventions require the Irish Government to address issues of invasive alien species. This has been implemented through national legislation via the Wildlife Acts 1976 and 2000 (as amended) and further regulated through the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477). Articles 49 and 50 of these latter regulations sets out the legal implications associated with alien invasive species and Schedule 3 of the regulations lists non-

native species subject to the restrictions of Articles 49 and 50. Under Article 49 and 50 of these Regulations it is an offence to:

- Plant, disperse, allow dispersal or cause the spread of invasive species.
- Keep the plants in possession for the purpose of sale, breeding, reproduction,
- propagation, distribution, introduction or release.
- Keep anything from which the plant can be reproduced, or propagated from, without a granted licence.

In July 2024, new regulations were enacted to address the shortcomings of previous legislation on Invasive Alien Species. The European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374 of 2024) introduce significant measures aimed at tackling the issue of invasive species. These regulations establish a list of Invasive Alien Species of National Concern, referred to as First Schedule List. The regulations specify various offenses under section 17(1), which prohibit individuals from engaging in certain activities. These activities include the introduction of invasive species into the State, breeding, importing, exporting, or transporting these species within the State—except when such transportation is part of an eradication effort. Additionally, the regulations forbid placing these species on the market, using, exchanging, or offering them for exchange, allowing them to reproduce or cultivate, and releasing them into the environment.

During the survey, two invasive species were recorded. These are Rhododendron (*Rhododendron ponticum*), and Cherry Laurel (*Prunus laurocerasus*). The former is listed amongst the First Schedule species. The National Biodiversity Data Centre (NBDC) classes both species as having “High Risk of Impact”. The extent of the invasive species on site is reported below in Figure 6.



Figure 7. Details of location of Rhododendron and Cherry Laurel.

As Cherry Laurel is not classed as first schedule, it is not predicted that the species will represent a constraint to the works, however its removal and treatment is advised wherever possible.

5. Nearby Designated Areas

The nearest designated sites to the works area are listed below along with distances of the designated sites to the proposed site of works (Figure 7).

Table 8. Designated Areas and their distance from the proposed works area

No.	Site Name & Designation	Avg. distance from works area
1	Clare Glen SAC -	0 km
2	Slievefelim to Silvermines Mountains SPA - 004165	0.2 km
3	Lower River Shannon SAC - 002165	0.4 km
4	Glenstal Wood SAC – 001432 (different catchment)	2.3 km
5	Keeper Hill SAC - 001197	9.9 km
6	Silvermines Mountains West SAC – 002258	11.4 km
7	Silvermine Mountains Sac - 000939	11.5 km
8	Bolingbrook Hill SAC - 002124	14.9 km
9	Glenomra Wood SAC - 001013	15.1 km
10	Lough Derg (Shannon) SPA - 004058	16.3 km
11	River Shannon and River Fergus Estuaries SPA - 004077	17.3 km
12	Slieve Bernagh Bog SAC - 002312	17.5 km

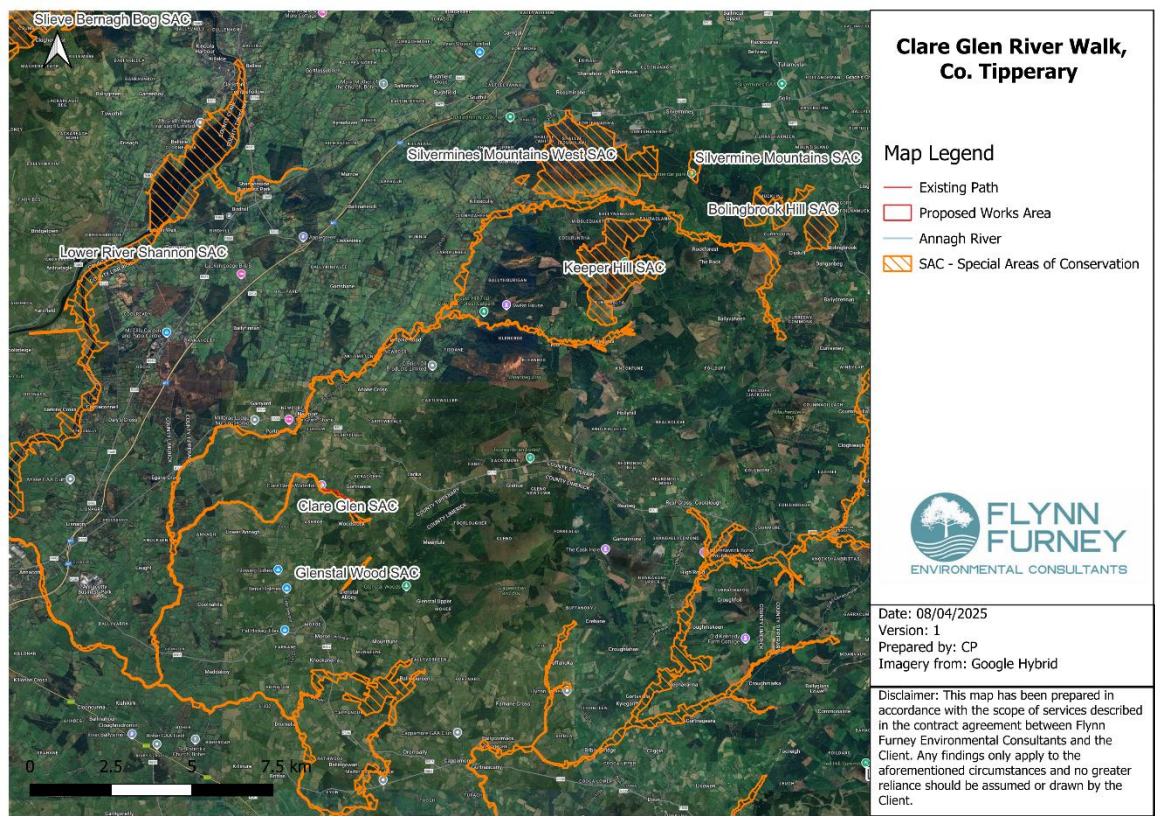


Figure 8. Designated sites (SAC) in proximity of the proposed works area

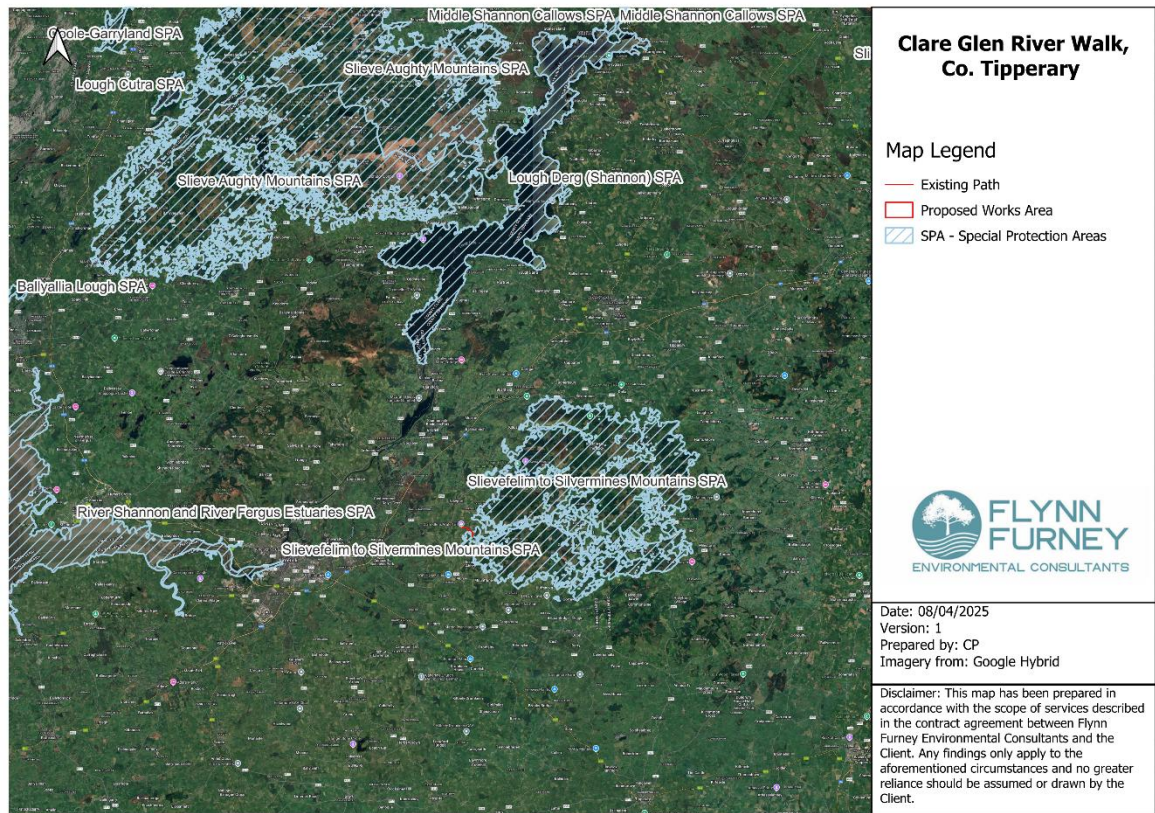


Figure 8. Designated sites (SPA) in proximity of the proposed works area

Table 9. NHA and pNHA and their distance from the proposed works area

No.	Site Name & Designation	Avg. distance from works area
1	Derrygareen Heath pNHA - 000931	2.4 km
2	Grageen Fen and Bog NHA - 002186	5.3 km
3	Bleanbeg Bog pNHA - 002450	5.8 km
4	Mauherslieve Bog NHA - 002385	12.8 km
5	Ballyvorheen Bog pNHA -001849	5.8 km
6	Dromsallagh Bog pNHA - 001850	6.2 km
7	Bilboa an Gortnageragh River Valleys pNHA - 001851	10.8 km

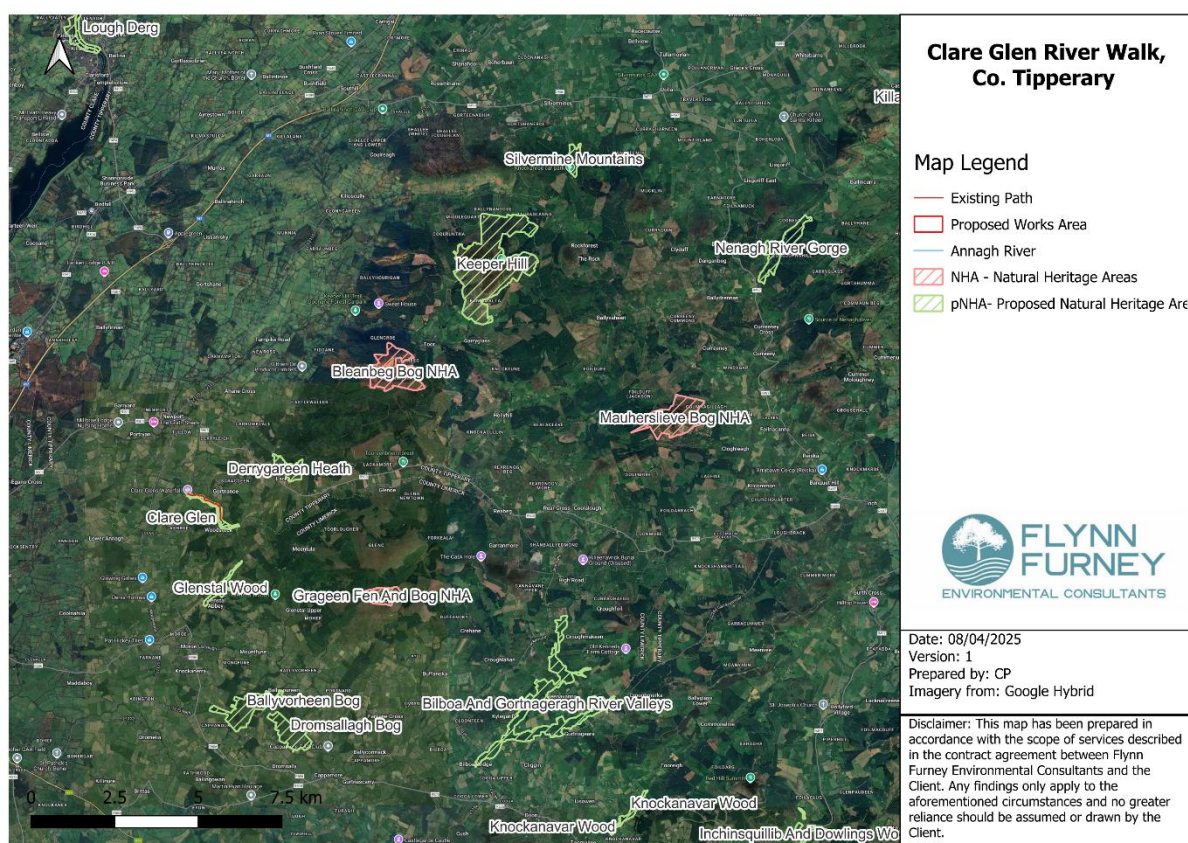


Figure 9. NHA and pNHAs in proximity of the proposed works area

A total of 12 designated sites in the vicinity of the proposed development were identified from the desk study. Of these, two SAC and one SPA in close proximity to the works were identified: Clare Glen SAC, within which the works will take place, Lower River Shannon SAC, and Slievefelim to Silvermines Mountains SPA. In particular, Lower River Shannon SAC is located 0.2km from the westernmost side of the site, while Slievefelim to Silvermines Mountains SPA is located approximately 0.4 Km from eastern side of the site.

The remaining designated sites identified were Natural Heritage Sites and proposed Natural Heritage Sites. Of these the closest one to the proposed routes is Derrygareen Heath pNHA, located approximately 2.4 km from the site.

Given the proximity of the works to the designated sites and their hydrological connection, the project warrants an Appropriate Assessment Screening. For this purpose, an Appropriate Assessment Screening Report was produced by Flynn Furney Environmental Consultants Ltd. with respect to the proposed development. The Appropriate Assessment Screening concluded as follows:

“In view of the best and objective scientific knowledge and in view of the conservation objectives of the European sites reviewed in the screening exercise, impacts resulting from the proposed development that could adversely influence the Qualifying Interest of Clare Glen SAC, Slievefelim and Silvermines Mountain SPA and Lower River Shannon SAC cannot be excluded. Therefore, it is recommended that Appropriate Assessment is required.”

A Natura Impact Statement was produced for the purpose of this project, and relevant mitigations were outlined in the document. The NIS concluded as follows:

“With the implementation of these measures, the proposed improvement of the existing path will not result in direct, indirect, or cumulative impacts which would have the potential to adversely affect the qualifying interests/special conservation interests of the Natura 2000 sites within the study area or the range, population densities or conservation status of the habitats and species for which these sites are designated (i.e. conservation objectives).

It may therefore be concluded that the proposed project, with the implementation of the prescribed mitigation measures, will not give rise to significant impacts, either individually or in combination with other plans and projects, in a manner that adversely affects the integrity of any designated site within the Natura 2000 network”.

6. Ecological Impact Assessment

6.1 Evaluation of Significance of impact and Mitigations– Habitats

The evaluation of impact, significance, duration and mitigation for each of the habitats observed is provided in table 10.

Table 10. Evaluation of significance - Habitats

Habitat	Fossitt code	Significance
Mixed Broadleaf/Conifer Woodland	WD2	<i>International Importance</i> - Supports high diversity, particularly of ground flora. Conservation objective of Clare Glen SAC. Supports one FPO species (Killarney Fern)
Oak-Ash-Hazel Woodland	WN2	<i>National Importance</i> - Supports high diversity, particularly of ground flora.
Willow-Alder-Ash Woodland	WN6	<i>National Importance</i> - Supports high diversity, particularly of ground flora.
Upland Eroding River	FW1	<i>International Importance</i> - Supports high diversity, contributes to humidity levels necessary for the conservation of FPO species Killarney Fern.
Improved agricultural grassland	GA1	<i>Low Local Importance</i> - Supports low diversity. Highly modified.
Building and Artificial Surfaces	BL3	<i>Low Local Importance</i> - Supports low diversity. Highly modified.

The potential impacts on the ecological features identified are given in table 11

Table 11. Evaluation of impacts - Habitats

Habitat	Evaluation	Nature of Impact	Significance	Duration and Likelihood
Mixed Broadleaf/Conifer Woodland (WD2)	High International	Possible disturbance to bird and/or bat species during construction. Loss of mature Trees.	Minor Adverse	Long Term/Likely
Oak- Ash-Hazel-Woodland (WN2)	High National	Possible disturbance to bird and/or bat species during construction.	Negligible	Short Term/Likely
Willow-Alder-Ash Woodland (WN6)	High National	Possible disturbance to bird and/or bat species during construction.	Negligible	Short Term/Likely
Upland/Eroding River (FW1)	High National	There is potential for impacts to surface water receptors during the construction phase, e.g. soil/silt mobilization and possible hydrocarbon spillages from the work zones into nearby Annagh River. Potential short-term noise impacts may also arise during construction activities. No change to the hydro-geomorphology of the watercourse are predicted.	Minor Adverse	Short Term/Likely
Stone Wall and other stone work (BL1)	Moderate Local	Some might be lost.	Minor Adverse	Long Term/Likely
Improved Agricultural Grassland (GA1)	Low Local	No significant impacts predicted.	None	None
Building and Artificial Surfaces (BL3)	Low Local	No significant impacts predicted	None	None

Mitigation measures to address the potential impacts as detailed above on the ecological features are given in table 12.

Table 12. Mitigations - Habitats

Habitat	Nature of Impact	Recommended Mitigation Measures	Impact after mitigation
Mixed Broadleaf/Conifer Woodland (WD2)	Possible disturbance to bird species during construction. Some trees will be removed or cut back. Possible spread of invasive species.	- Tree cutting to be avoided during bird nesting season (March 1st to August 31st). Any cutting required during the bird nesting season requires a bird nesting survey to be conducted by an ecologist beforehand. Any nests recorded will be left alone. If nests are absent, works will be undertaken within 48 hours of the survey. A further survey will be required if works have not been undertaken in that timeframe. - Any tree pruning works required to be undertaken in consultation with an arborist. - An invasive species management plan to be followed - Replanting and management schemes to be drawn up to allow habitat recreation along the edge of the path. - All trees and shrubs used are non-invasive, pollinator friendly and selected from the All-Ireland Pollinator Plan. Only native local species to be used.	Negligible
Oak- Ash-Hazel- Woodland (WN2)	Possible disturbance to bird species during construction.	Tree cutting to be avoided during bird nesting season (March 1st to August 31st). Any cutting required during the bird nesting season requires a bird nesting survey to be conducted by an ecologist beforehand. Any nests recorded will be left alone. If nests are absent, works will be undertaken within 48 hours of the survey. A further survey will be required if works have not been undertaken in that timeframe.	Negligible

Willow-Alder-Ash Woodland (WN6)	Possible disturbance to bird species during construction. Possible water quality impacts that may affect the quality of the woodland habitat. Spread of invasive species.	- Tree cutting to be avoided during bird nesting season (March 1st to August 31st). Any cutting required during the bird nesting season requires a bird nesting survey to be conducted by an ecologist beforehand. Any nests recorded will be left alone. If nests are absent, works will be undertaken within 48 hours of the survey. A further survey will be required if works have not been undertaken in that timeframe. - An invasive species management plan to be followed - Refer to surface waters in table 7 for water quality mitigations	Negligible
Upland/Eroding River	There is potential for impacts to surface water receptors during the construction phase. No change to the hydro-geomorphology of the channel are predicted.	Refer to surface waters in table 13 for water quality mitigations	Negligible
Improved agricultural grassland	None	No mitigation required	None

Buildings and artificial surfaces	None	No mitigation required	None
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6.2 Evaluation of Significance of impact and Mitigations– Flora and Fauna

The evaluation of impact, significance, duration and mitigation for each category of fauna and flora is provided in table 13.

Table 13. Environmental impact Assessment – flora and fauna.

Category	Nature of impact	Significance of impact	Duration and likelihood	Mitigation	Impact after mitigation
Surface Water	Proposed development may interfere with watercourse during the construction phase e.g. soil/silt mobilization and possible hydrocarbon spillages from the work zones into nearby floodplains and waterways. No change to the hydro-geomorphology of the channel are predicted.	Minor Adverse	Short Term/Likely	Construction Phase Mitigation - Construction Environmental Management Plan Co-ordinator (CEMPC) should be appointed to oversee and implement measures detailed below. - A designated Ecological Clerk of Works (ECoW) should be appointed to oversee the clearance phase and the construction phase of the proposed development. ECoW should be on site daily during clearance works and weekly during construction works - The river should be cordoned off before the commencement of the development. Vegetation along the riparian zones should be preserved as much as feasible. - Silt fencing should be installed downstream of the works area whereas works are planned within 10m from the Annagh River. Daily inspection of silt fences will be carried out by the site management to assess the effectiveness of the measures, to carry out maintenance, and to determine if there has been any damage/breach to the control	Negligible

				measures. The silt fences will also be inspected immediately following heavy rainfall or strong winds (equating to a yellow weather warning). Where repair is necessary, this will be carried out immediately and may require the replacement of any damaged/degraded material. • All stationary plant must be placed on drip trays to prevent leaking oils reaching the Annagh River. No storage of equipment should take place within 5 meters of the Annagh River. • If instream works are required a site meeting to discuss works method should be organised between IFI, Tipperary County Council and the projects designated Ecologist. • Signage should be erected that clearly states that works are occurring adjacent to an ecologically sensitive area. • All clearance works should take place during dry weather. No bare soils should be left exposed over night to ensure no silts, soils or organic material is lost to either the Annagh River. No stockpiling of excavated material should take place within the woodland area, and especially within 10m from the Annagh River. • Excavation and vegetation removal shall be minimised in all areas adjacent or close to watercourse. Any proposed excavation or vegetation removal shall be agreed with the project ecologist. Insofar as possible, where this is required, the project ecologist shall	
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				direct the construction of permanent bunds in order to divert or catch runoff. • All fuels, lubricants, and hydraulic fluids will be kept in secure bunded areas remotely from any watercourse and the woodland areas. The bunded area will accommodate 110% of the total capacity of the containers within it. Containers will be properly secured to prevent unauthorised access and misuse. • Drip trays and spill kits must be kept available on site. No washings or waste materials of any kind can be directed into the nearby drains or into the river (including concrete washout from any concrete deliveries). Machinery on site must have pollution control kits on hand in the event of an emergency. • No refuelling should occur on site. This should be carried out at least 30m from the site boundary. Any fuel to be stored on site should be stored in a safe area where the likelihood of damage to the fuel container by moving vehicles is minimised. • Fuel, if being stored, should be stored in a double-bunded, undamaged, fit-for-purpose storage unit, specifically designed for fuel storage outside the woodland area. • Portaloos and/or containerised toilets and welfare units will be used to provide facilities for site personnel. All associated waste will be removed from the site by a licenced waste disposal contractor on a regular basis. • All site staff should be briefed regarding the environmental sensitivity of the site, including	
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				the importance of the European designated site. A Toolbox talk should be held to inform site staff of best practice required in these areas.	
Flora	Potential interference with one of the Killarney Fern.	Major Adverse	Long Term/Likely	Avoidance is the proposed mitigation. At the locations where the Killarney Fern gametophyte was recorded there is abundant space for the path to be widened without having to interfere with the species and its habitat.	Negligible
Mammals	Noise and vibration resulting in disturbance for Pine Marten and Otters	Minor Adverse	Short term/Likely	- As in the future Otter could potentially establish new holt or couch sites within the Zol of the Proposed Road Development, a pre-construction survey of all suitable Otter habitat will be required within 12 months of any constructions works commencing. - A lighting plan to be drawn up if works are to take place at night. All lighting is to be focused on the site only, with no light spill on the Annagh river. - A pre-construction survey focusing on tree cavities of trees to be felled shall be carried by a suitably qualified ecologist prior to clearance works commencing due to the Pine Marten activity recorded. - Compensatory measured may include the installation of artificial den boxes for Pine Marten	Negligible
Birds	Loss of feeding and possible nesting sites	Minor Adverse	Temporary/unlikely	No vegetation clearance to take place during bird nesting season (March 1st – August 31st).	Negligible

	within woodland			Compensatory planting carried out where possible.	
Amphibians	No significant impacts predicted.	None	None	No mitigation required	None
Bats	Possible disturbance of roost if removing trees. Possible noise and light pollution disturbance from proposed works.	Minor Adverse	Short term/unlikely	- Dedicated bat survey to be carried out in advance of removal of storm damage tree in the mid-viewing platform. - Installation of bat boxes by an ecologist is recommended due to loss of some roosting opportunities. - If required, Installation of any lighting columns at the lowest practical height level with box shield fittings will minimise glare and light spillage. The Lux level of lamps, if needed, should be kept as low as possible. Sodium lamps should be used rather than metal halide. Covers should be made from glass rather than plastic as this minimises the amount of UV light, reducing the attraction effects of lights on insects. - Compensatory planting carried out where possible.	Negligible
Invasive species	Potential for ecological enhancement. No negative impacts predicted.	Moderate Beneficial	Long term/likely	All invasive species to be removed/managed according to their respective guidelines.	Moderate beneficial

7. Potential for In-Combination Effects

7.1 Relevant Plans and Policies

The following plans and policies were reviewed and considered for possible in-combination effects with the Proposed Development.

- Tipperary County Development Plan 2022-2028 (CDP)
- Strategic Tourism Marketing, Experience & Destination Development Plan 2016-2021

Chapter 9 of the Strategic Environmental Assessment Statement and Environmental Report of the Tipperary County Development Plan (CDP) 2022-2028 emphasizes the importance of enhancing opportunities to utilize the potential of scenic landscapes, trails, uplands, lakes, and waterways in a way that aligns with the region's natural heritage and environment. This chapter specifies that such projects must clearly demonstrate a necessity for their location in the area. In this regard, the proposed initiative aims not only to enhance the recreational experience but also to mitigate potential health and safety hazards linked to the current conditions of the existing trail. No other specific projects or plans within the CDP were identified that could act in-combination with the Proposed Development and cause adverse effects on the key ecological receptors identified in this report.

7.2 Existing Planning Permissions

A number of other projects have been considered as part of the screening process. A search of National Planning Application Database and the Tipperary County Council planning web portal was carried out as part of this desktop study. A number of planning applications were reviewed, the majority of which for the retention and modifications of private residences. The closest to the proposed works area is App. 20991 for the construction of an entrance, dwelling house, garage, domestic waste water treatment system with polishing filter together with all associated site works, granted in 2020. Granted in 2023, application 23257 is the most recent in the areas surrounding the proposed works site, for the construction of two storey extension to the rear of house. In terms of large-scale developments, App. 16600472 for the extension of duration of a wind farm established in 2011 was granted in 2016 to 2022. This development is located approx. 3.2 km from the proposed works area. No other application relative to this particular development exists at the time of writing. No other application was considered for the purpose of this screening exercise. No application was found likely to create cumulative or in combination effects that will impact Natura 2000 sites.

8. Do Nothing Scenario

In the event of a 'do-nothing' scenario, the current trail would remain unchanged, requiring maintenance to ensure it is suitable for public use. Failing to implement the project and enhance any part of the existing trail could lead to further deterioration and an increase in health and safety risks to its users. This inaction would contradict the Council's goals of fostering the development of tourism infrastructure, as the project represents a valuable opportunity to revitalize this recreational area. Additionally, the potential secondary benefits associated to this project, such as the establishment of an invasive species management plan, would be forfeited if no action is taken. Environmentally, a 'do nothing' strategy is likely to have a neutral to negative effect on material assets, land, water, air, climate, cultural heritage, biodiversity, and landscape. This is due to the benefit of implementing an invasive species management plan as part of the mitigation measures for this project, which would contribute to restoring the woodland.

9. Residual Impacts after Mitigation

No significant residual impacts predicted as a result of the construction or operational phases of the proposed scheme.

10. Opportunities for ecological enhancement and biodiversity net gain

The designated area is heavily infested with Rhododendron, a first schedule invasive species. Eliminating this invasive plant would greatly enhance the woodland in Clare Glens, facilitating natural regeneration and creating space for native plant species to thrive. An invasive species management plan has been developed in conjunction with this report. Additionally, the project involves the removal of a select number of trees deemed suitable for clearance based on the accompanying arboricultural assessment report. While natural regeneration is feasible, the introduction of native species to replace the removed trees will lead to a net gain in biodiversity, particularly since much of the canopy in the area designated for felling is currently dominated by non-native species such as spruce, beech, and sycamore. The planting of native trees and shrubs will provide benefits to various species, especially birds and small mammals, while also establishing a new diverse habitat that can support a wide range of flora. This initiative will enhance ecological connectivity and further advance the biodiversity goals outlined in the current County Development Plan.

11. Conclusions

Ecological surveys were carried out within and surrounding the proposed development site in March and April 2025. These were completed within the optimal time for habitats, bats, birds and botanical assessment. Surveys included those for mammals, habitats and invasive species. An extensive desktop survey was carried out which used available data from suitable sources which included online databases (e.g. National Parks and Wildlife Service and National Biodiversity Data Centre).

A number of habitats were recorded during survey period, predominantly woodland habitats such as Broadleaf/Conifer Woodland (WD2), Oak-Ash-Hazel (WN2) and Wet Willow-Alder-Ash (WN6). The Annagh River, classified as Upland/Eroding river (FW1), runs parallel to the project site along its length.

The footprints of the works occurs within the designated site Clare Glen SAC, designated for the following conservation objectives.

Hydrological connectivity also exists between the project area and the Lower River Shannon SAC, which is located along the Annagh River, downstream of the proposed works.

While the development is unlikely to result in any significant effects on these internationally important sites, a series of mitigations are proposed for the protection of these. The mitigation proposed in regard to this impact involves actions to prevent sediment run off from reaching the river during the construction phase of the works, such as the installation of silt fencing when working in proximity to the river, and the provision of spill kits. For this purpose, a dedicated construction environmental management plan (CEMP) shall be devised at a later date.

Droppings of two protected mammal species, Otter and Pine Marten, were found within or surrounding the proposed development area, indicating that these species occur within the woods at Clare Glens. Given the nature of the works, no significant impacts predicted, primarily as the works are not likely to interfere with the habitat of these species in such way that it would alter their ability to forage or breed in the site.

No Annex II (Birds Directive) bird species was recorded during field surveys of the site and surrounds. One red listed species, the Dipper, was recorded during the survey, however works will not interfere with the habitat of this species, and no significant impacts are predicted. As all bird species are fully protected in Ireland by the Wildlife Act, general mitigation measures have been drawn up to address any potential impacts on local bird populations. These include the limiting of work areas and the protection of woody vegetation during the bird nesting season.

Finally, a wide range of measures have been described which will enhance existing habitats, particularly in relation to invasive species. For these, an invasive species management plan has been drawn and it accompanies this document. Planting of native trees to benefit birds and other species was also recommended as to promote the regeneration of native species within the woodland canopy. This range of measures, suitably implemented, should result in an overall increase in the diversity of habitats and species along the Proposed Development routes.

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13. Appendices

Appendix I – Relevant tables

Table 14. Third Schedule Invasive Alien Species

Common Name	Scientific Name
American skunk-cabbage	<i>Lysichiton americanus</i>
A red alga	<i>Grateloupia doryphora</i>
Brazilian giant-rhubarb	<i>Gunnera manicata</i>
Broad-leaved rush	<i>Juncus planifolius</i>
Cape pondweed	<i>Aponogeton distachyos</i>
Cord-grasses	<i>Spartina (all species and hybrids)</i>
Curly waterweed	<i>Lagarosiphon major</i>
Dwarf eel-grass	<i>Zostera japonica</i>
Fanwort	<i>Cabomba caroliniana</i>
Floating pennywort	<i>Hydrocotyle ranunculoides</i>
Fringed water-lily	<i>Nymphoides peltata</i>
Giant hogweed	<i>Heracleum mantegazzianum</i>
Giant knotweed	<i>Fallopia sachalinensis</i>
Giant-rhubarb	<i>Gunnera tinctoria</i>
Giant salvinia	<i>Salvinia molesta</i>
Himalayan balsam	<i>Impatiens glandulifera</i>
Himalayan knotweed	<i>Persicaria wallichii</i>
Hottentot-fig	<i>Carpobrotus edulis</i>
Japanese knotweed	<i>Fallopia japonica</i>
Large-flowered waterweed	<i>Egeria densa</i>
Mile-a-minute weed	<i>Persicaria perfoliata</i>
New Zealand pigmyweed	<i>Crassula helmsii</i>
Parrot's feather	<i>Myriophyllum aquaticum</i>
Rhododendron	<i>Rhododendron ponticum</i>
Salmonberry	<i>Rubus spectabilis</i>
Sea-buckthorn	<i>Hippophae rhamnoides</i>
Spanish bluebell	<i>Hyacinthoides hispanica</i>
Three-cornered leek	<i>Allium triquetrum</i>
Wakame	<i>Undaria pinnatifida</i>
Water chestnut	<i>Trapa natans</i>
Water fern	<i>Azolla filiculoides</i>
Water lettuce	<i>Pistia stratiotes</i>
Water-primrose	<i>Ludwigia (all species)</i>
Waterweeds	<i>Elodea (all species)</i>
Wireweed	<i>Sargassum muticum</i>

