



REMEDIAL NATURA IMPACT STATEMENT

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Prepared for:
Tommy Geary
Site Address:
Clonfadda House, Clonfadda, Killaloe, Co. Clare

Prepared by:
Larry Manning
Email: larry.manning@omcgroup.ie
Phone: +353 87 353 9990



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Table of Contents

Contents

Document Control	Error! Bookmark not defined.
Table of Contents	3
Statement of Authority	5
1.0 Introduction	5
1.1 Information sources and surveys	5
1.2 Requirement for Appropriate Assessment	5
1.3 Methodology	6
1.4 Screening	7
1.5 Scope	7
1.6 Limitations	7
2.0 Description of development	9
2.1 Site location	9
2.2 Project description	9
2.3 Relationship to designated sites	10
2.4 Zone of influence	10
3.0 Description of the Natura 2000 sites	15
3.1 Lower River Shannon SAC (002165)	15
3.2 Lough Derg SPA (004058)	15
4.0 Receiving environment	16
4.1 Habitats	16
4.2 Invasive species	17
4.3 Hydrology, geology, hydrogeology and flood risk	17
4.4 Fauna	18
4.4.1 Birds	18
4.4.2 Non-volant mammals	19
4.4.3 Bats	19
4.4.4 Other species	19
5.0 Impact prediction and assessment	20
5.1 Proximity and relevance of qualifying interests and SPA species to the proposed development site	20
5.2 Impacts on habitats	23
5.3 Impacts on species	24
5.4 In-combination impacts	24
5.5 Residual effects	25
6.0 Mitigation and remedial measures	25
7.0 Conclusion	27
Appendices	Error! Bookmark not defined.

Appendix A - Site location map	28
Appendix B - Habitat map	29
Appendix C – Mitigation Strategy	Error! Bookmark not defined.
Appendix D - Photographs.....	30
Appendix E - Site location.....	31
Appendix F - Site Layout.....	32
Appendix G - Path Detail.....	32
Appendix H - Steel shed.....	33
Appendix I - Refences.....	33

Statement of Authority

Larry is a Principal Ecologist with 15 years of post-qualification experience in ecological consultancy, environmental monitoring, research, and technical leadership. My work has included Appropriate Assessment, Natura Impact Statements including remedial NIS, Ecological Impact Assessment, ECoW, habitat survey, ornithology, mammal survey, bat survey, invasive species assessment, and biodiversity input to planning and consent processes across Ireland. I have worked on both onshore and offshore projects, including renewable energy developments, and have led or contributed to large and medium-scale projects of national and regional importance, including flood relief schemes, NPWS conservation initiatives, and fisheries and marine environmental work. My experience also includes offshore survey operations, marine mammal mitigation, and aerial survey planning for offshore environmental survey applications. I hold a BSc (Hons) in Applied Freshwater and Marine Biology and have completed specialist continuing professional development in bat ecology and legislation, bat survey and identification, and acoustic survey methods. This report has been prepared by me using my professional judgement, relevant guidance, desk study, field survey evidence, and extensive experience in assessing potential effects on Natura 2000 sites and their qualifying interests.

1.0 Introduction

This Remedial Natura Impact Statement (rNIS) has been prepared in support of an application for substitute consent / retention associated with the unauthorised construction of a pathway extending from Clonfadda House towards the shoreline within the townland of Clonfadda, Killaloe, Co. Clare. The development comprises the formed path itself together with associated minor drainage works, kerbing, fencing, landscaping, a shed and related ground disturbance, as described in the source ecological documentation.

The background to this report is that the pathway leading from the house down towards the shore of the nearby SAC was constructed without planning permission. Because part of the development lies within the Lower River Shannon SAC and because hydrological and ecological pathways are present, a precautionary Stage 2 assessment is considered appropriate in the remedial context.

1.1 Information sources and surveys

This report is informed by the following principal sources and datasets:

- European and national Appropriate Assessment guidance, relevant legislation and publicly available conservation documentation for the relevant European sites.
- Baseline habitat mapping, site descriptions, hydrological context information and European site review materials made available for the development.
- Site location mapping and the development description supplied for the Clonfadda Path development.
- Field information supplied by the client / surveyor, including detailed mammal observations, bat roost potential findings, and confirmation that supplementary bird data and photographs will be appended before final issue.
- A detailed walkover of the receiving environment, including all accessible sections of the site boundary, grassland, marshy ground and the water's edge, undertaken to identify habitats, hydrological pathways and any evidence of protected or otherwise notable fauna.

The field information incorporated in this draft confirms that the entire site boundary, the grassy and marshy areas and the water's edge were examined for evidence of otter, badger and other mammal use; that a comprehensive bat roost potential survey was completed; and that supplementary bird records will be inserted prior to issue of the final report.

1.2 Requirement for Appropriate Assessment and Remedial Natura Impact Statement

Article 6(3) of the Habitats Directive requires that any plan or project not directly connected with or necessary to the management of a European site, but likely to have a significant effect thereon, either

individually or in combination with other plans or projects, must be subject to Appropriate Assessment. In the remedial context, the rNIS provides the information necessary for the competent authority to assess the significant effects, if any, that have occurred, are occurring, or could reasonably be expected to occur as a consequence of the unauthorised development, together with the mitigation or remedial measures required to avoid adverse effects on site integrity.

A Remedial Natura Impact Statement (rNIS) is required where development has already been carried out and Appropriate Assessment under Article 6(3) of the Habitats Directive was required, but was not undertaken before the works proceeded. In Ireland, the rNIS arises in the context of an application for substitute consent under Part XA of the Planning and Development Act 2000, as amended. Section 177E provides that where an application for substitute consent is accompanied by a remedial Natura impact statement, An Coimisiún Pleanála is deemed to be satisfied that Appropriate Assessment is required and was required in respect of the development, and the application must then be considered on that basis. Section 177G sets out the mandatory content of an rNIS and requires, in particular, a statement of the significant effects, if any, on the relevant European site which have occurred, are occurring, or can reasonably be expected to occur because the development was carried out, together with details of remedial or mitigation measures already undertaken or proposed, including the period within which such measures are to be implemented. The purpose of the rNIS is therefore to provide the competent authority with sufficient objective scientific information to carry out an Appropriate Assessment of the unauthorised development, having regard to the conservation objectives of the relevant European site or sites, and to determine whether the development, alone or in combination with other plans or projects, has affected, is affecting, or may affect the integrity of any European site. This legislative requirement derives from Article 6(3) of Council Directive 92/43/EEC, which requires that any plan or project not directly connected with or necessary to the management of a European site, but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to Appropriate Assessment of its implications for that site in view of the site's conservation objectives, and that consent may only be given after the competent authority has ascertained that it will not adversely affect the integrity of the site. The Irish Appropriate Assessment process is further informed by the European Communities (Birds and Natural Habitats) Regulations 2011, as amended, national guidance including Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities, and European Commission guidance on the application of Article 6 of the Habitats Directive. Together, these establish that an rNIS must apply the precautionary principle, be evidence-led, identify all relevant source-pathway-receptor linkages, consider direct, indirect and in-combination effects, and set out any mitigation or remedial measures necessary to ensure that the integrity of European sites is not adversely affected. In that regard, an rNIS differs from a standard forward-looking Natura Impact Statement because it must address the retrospective position, namely the effects which have already arisen or may have arisen from development that has been carried out, as well as any ongoing or reasonably foreseeable future effects, and it must clearly describe how those effects are to be remedied, mitigated and, where necessary, monitored.

1.3 Methodology

This rNIS follows the precautionary approach set out in national and European guidance on Appropriate Assessment and remedial Natura impact statements. It combines desk study, review of ecological mapping and conservation information, examination of the development description, interpretation of site hydrology and field-based appraisal of habitats and fauna. The assessment has been structured to address the retrospective nature of the case, namely the effects that may have arisen during construction of the pathway and the effects that may continue during operation unless remedial measures are implemented.

Desk study elements include review of aerial imagery, European site mapping and conservation documentation, waterbody and catchment context, flood risk context, biodiversity records where relevant, planning context and the development drawings and site mapping supplied for the case. Particular attention has been paid to direct and indirect pathways between the completed path, adjacent wetland habitats, the on-site ditch and the lakeshore margin, and to the possibility that the shoreline corridor may function as habitat used by Annex II species and wetland birds associated with the adjoining European sites.

A comprehensive site survey was carried out on 4/03/2026 where the author walked the entire site boundary and all accessible parts of the development corridor, including wet grassland, marshy areas, drier grassland, the ditch margins and the waterside edge. The survey sought signs of otter (*Lutra lutra*) such as spraints, prints, slides, couches, holts, resting places and access points; signs of badger (*Meles meles*) such as setts, snuffle holes, latrines, prints, paths and dropped hair; and more general mammal runs and tracks indicating use of the corridor. The methodology also included inspection of banks, vegetation edges, breaks in cover and sheltered features that might provide temporary or permanent resting opportunities. In addition, a comprehensive bat roost potential survey was undertaken of all accessible structures, trees, walls, banks and other features capable of supporting roosting bats, with attention to cracks, cavities, lifted elements, voids, exfoliating bark, ivy cover, broken masonry, undercut banks and any other potential crevice or void feature.

Bird observations were also carried out, and noted species were included in this report if they occurred on and off the site. Recording bird data during the site visit is necessary because birds can be important ecological receptors in their own right and can also indicate how the site and adjacent habitats are functioning. In the context of an NIS or rNIS, bird records help establish whether the site or immediately adjoining habitats are being used for feeding, resting, roosting, nesting, sheltering or movement, particularly where there may be a nearby SPA or functionally linked habitat. Even where a full ornithological survey is not being undertaken, noting the species present, numbers, behaviour, flight lines, habitat associations, and any signs of breeding or regular use helps inform the ecological baseline and supports the source–pathway–receptor assessment. It also helps determine whether disturbance, habitat loss, habitat degradation, or changes in hydrology could affect birds using the site or nearby waterbody. In a remedial report, this is important because it provides direct field evidence of how the area is currently being used by birds and helps assess whether the unauthorised development may have affected, or may continue to affect, bird interests associated with nearby designated sites.

1.4 Screening

The completed development has been considered in the context of Appropriate Assessment screening; however, because part of the pathway lies within the Lower River Shannon SAC and because a direct hydrological and ecological connection exists between the works area and the receiving European site, it is appropriate and proportionate to proceed to Stage 2 Appropriate Assessment in this remedial statement. This ensures that the effects of the completed works are examined in full and that specific remedial measures can be identified where necessary.

1.5 Scope

This report assesses the completed pathway development alone and in combination with other plans or projects, with particular regard to the conservation objectives of the Lower River Shannon SAC and to functionally linked habitat potentially used by qualifying bird species associated with Lough Derg SPA. The assessment addresses both past construction-stage effects and future operational effects and identifies remedial measures necessary to ensure no adverse effect on the integrity of the relevant European sites.

1.6 Limitations

This remedial Natura Impact Statement has been prepared by OMC on the basis of the information available at the time of assessment, including desk study, review of project documentation, site inspection, habitat appraisal, protected species survey effort, and the field observations described herein. The assessment is considered proportionate and robust in the context of the scale and nature of the unauthorised development, its receiving environment, and the ecological sensitivities associated with the adjoining European sites. Nevertheless, as with all ecological assessments, certain limitations are inherent and should be acknowledged.

Ecological survey findings represent the conditions observed at the time of survey only. Habitat condition, vegetation structure, hydrological behaviour, and faunal usage can vary seasonally, inter-annually, and in response to prevailing weather, water levels, land management, and disturbance patterns. Accordingly, the absence of evidence of a species, breeding site, resting place, or other

ecological feature during a survey does not conclusively demonstrate its permanent absence. This is particularly relevant in relation to mobile and intermittently detectable fauna, including otter and birds, whose use of a site may be episodic, seasonal, nocturnal, weather-dependent, or otherwise variable.

The otter survey comprised a comprehensive inspection of the site boundary, grassy and marshy habitats, and the waterside margin for evidence of activity, including spraints, tracks, holts, couches, slides, feeding remains, territorial markings and other field signs. One otter spraint was identified, and mammal tracks were observed in grass leading to the water's edge. These findings support the conclusion that the site and its adjoining shoreline habitat are used functionally by mammals, including otters, for commuting and/or foraging. No holt, couch, natal den, or regularly used resting place was identified within the surveyed area. However, otters are a highly mobile Annex II species and field signs may be inconspicuous, ephemeral, obscured by vegetation, removed by rainfall or fluctuating water levels, or absent during periods of temporary non-use. It cannot therefore be stated with absolute certainty that otters do not use the site outside the survey period. For that reason, and in accordance with the precautionary principle, the waterside, marshy and grassland habitats have been treated in this assessment as functionally relevant otter habitat.

Badger footprints were also recorded near the water's edge, but no sett was identified during the survey. While badger is not a qualifying interest of the relevant European sites and is therefore not a receptor for Appropriate Assessment purposes, its presence remains relevant to the ecological baseline and to the interpretation of mammal use of the site. As with other mammal surveys, detectability may be influenced by ground conditions, season, vegetation cover and recent disturbance.

A comprehensive bat roost potential survey was undertaken, and no potential roost features were identified. This is considered a robust finding in relation to the structures and features inspected at the time of survey. However, the absence of roost potential features does not preclude bats foraging or commuting through the wider landscape. Notwithstanding this, bats do not represent the principal Natura 2000 receptor pathway in this case, and the Appropriate Assessment is concerned primarily with the adjacent SAC and SPA, their qualifying interests, and the functionally linked habitats associated with them.

Bird usage of the site and adjacent shoreline environment may vary substantially according to season, migration period, water level, weather conditions, and prevailing disturbance. While bird data obtained during fieldwork can be incorporated into the final report, it is acknowledged that limited survey temporal coverage cannot definitively characterise all seasonal patterns of site usage by breeding, wintering, passage, or dispersing birds. Accordingly, the assessment is based not solely on the observations made during survey, but also on the nature and suitability of the habitats present, the location of the site relative to the adjacent lake environment, and the potential role of the shoreline and nearshore habitats as functionally linked habitat for SPA-associated bird species. In the absence of a full seasonal dataset, a precautionary approach has been adopted in evaluating potential effects.

The habitat survey and habitat mapping are considered adequate and fit for purpose in the context of this rNIS. However, as is typical of wet grassland, marshy ground and transitional lakeshore habitats, local habitat expressions may vary over time in response to seasonal inundation, trampling, vegetation growth, drainage behaviour and land use. Such variation does not materially affect the conclusions of this assessment but should be recognised as part of the dynamic nature of the receiving environment.

Hydrological and runoff pathways were assessed on the basis of visible site conditions, topography, habitat context, proximity to the water's edge, and professional judgement, rather than through intrusive site investigation, hydraulic modelling, or long-term water quality monitoring. This is considered appropriate for the purposes of identifying credible pathways for effect in an Appropriate Assessment context. However, runoff behaviour and the extent of hydrological connectivity may vary under intense rainfall, prolonged wet weather, or other extreme conditions. This uncertainty has been addressed through the adoption of a precautionary approach and through the recommendation of remedial drainage and runoff attenuation measures intended to reduce or break potential pathways for effect to the adjacent European sites.

It is important to recognise that this is a remedial assessment of development that has already taken place. A retrospective ecological assessment is inherently subject to the limitation that pre-construction baseline conditions cannot be recreated with complete certainty. While current site conditions, habitat context, species evidence, and likely impact pathways can be assessed with confidence, it is not possible to directly observe the exact ecological conditions that pertained immediately prior to the unauthorised works. This is an inherent feature of substitute consent and remedial assessment. In order to address this limitation, the present rNIS applies the precautionary principle throughout, assumes ecological sensitivity where reasonable scientific uncertainty remains, and sets out remedial mitigation measures designed to avoid, reduce and, where possible, remedy the potential effects of the development on the integrity of European sites.

2.0 Description of development

2.1 Site location

The subject site is located at Clonfadda, Killaloe, Co. Clare. The pathway extends from the curtilage of Clonfadda House downslope towards the shoreline, crossing a landholding that includes amenity grassland in the upper section, drier rank grassland in the middle reaches and wet grassland / marshy areas closer to the lakeshore. A site location map is included below.



Figure 2.1 Site Location

2.2 Project description

Application for Substitute Consent for the following:

The retention of upgrading works to the existing footpath extending from Clonfadda House to the shoreline, the retention of a new steel storage shed, the retention of a footpath providing access thereto, permission for drainage works associated with the footpath, and all ancillary site and landscaping works. The completed development extends across approximately 0.54 ha (1.35 acres) and comprises the constructed path, associated boundary treatment, extension of the managed garden edge, local drainage-related disturbance and ancillary groundworks. The pathway links the house and upper garden area to the lower part of the site close to the lakeshore. The lower section of the route traverses wetter ground that is hydrologically connected to the adjacent ditch and the shoreline of the SAC.

Construction was reportedly undertaken intermittently between 16 March and 18 September 2024 during daylight hours only. Works involved a combination of manual labour and light plant, including a mini excavator, mini dumper, power barrow, compactor and hand tools. The construction process would have entailed vegetation removal, local regrading, placement and compaction of imported stone or other path-forming material, movement of materials along the corridor and the creation of a more compacted, less permeable linear surface than existed previously. In ecological terms, the significance of the works does not arise from their scale alone, but from the fact that the route extends into a sensitive wetland and shoreline setting and creates a continuous pathway for surface water concentration, human access and habitat modification within and adjacent to the European site.

The specific subject of this remedial report is the unauthorised pathway and its associated ancillary works insofar as they may interact with the receiving SAC and any functionally linked shoreline habitat.

2.3 Relationship to designated sites

The Lower River Shannon SAC (002165) is directly relevant because part of the completed development lies within its boundary. Lough Derg SPA (004058) is also relevant within the wider receiving environment because the adjoining lake and shoreline habitat may be used by wetland birds associated with the SPA. The degree of relevance differs between the sites: for the SAC, the pathway has a direct spatial and hydrological relationship with the designated area; for the SPA, the principal issue is whether the shoreline and waterside margin adjacent to the development provide functionally linked habitat and whether increased access or disturbance could affect birds using that habitat. See below map which demonstrates site location and its geographical relationship with Natura 2000 sites within a 15 km zone of influence.

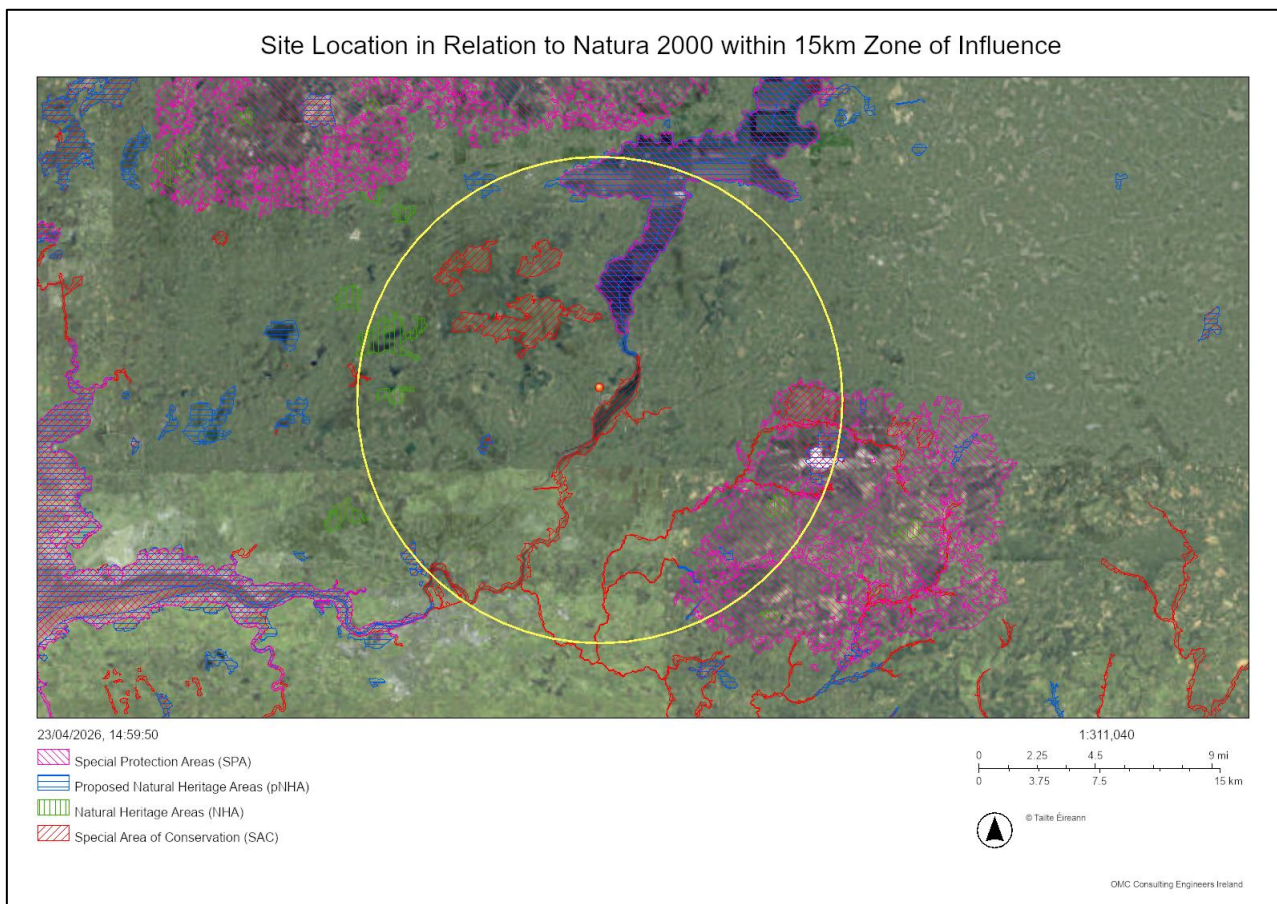


Figure 2.3 Site location with respect to Natura 200 sites within a 15 km Zone of Influence

2.4 Zone of influence and the Source-Pathway-Receptor Model

The principal zone of influence for this remedial assessment comprises: (i) the direct development footprint within and immediately adjacent to the SAC; (ii) the adjacent ditch and shoreline where overland run-off or entrained sediment could reach receiving waters; (iii) the shoreline corridor

used by otter and other fauna; and (iv) nearby functionally linked open-water/ shoreline habitat used by wetland birds.

The “Zone of Influence” can be defined as the difference between the spatial footprint of a project or development and the extent of the developments’ effects on the surrounding environment, in relation to habitat and species populations. When assessing effects on wildlife habitats and populations we must consider light, noise and hydrological connections. National guidance (DEHLG 2009) states that “Although a distance of 15km is currently recommended in the case of plans, however, for projects, the distance could be much less than 15km, and in some cases less than 100m, but this must be evaluated on a case-by-case basis” Thus the Zone of Influence requires to be defined for each project. When defining the zone of influence, it is important to consider;

- The location of Natura 2000 sites
- The area extent to which downstream habitats could be polluted
- To what degree could noise and light impact ecological receptors

The assessment in this case should be based mainly on the source–pathway–receptor (SPR) model, rather than a broad 15 km Zone of Influence (ZOI), because distance alone does not determine ecological risk. A 15 km search radius is useful at screening stage to identify European sites in the wider area, but the key question is whether there is a real pathway linking the development to a protected site or species. Here, the path is within or beside designated and functionally linked habitat, close to the shoreline, and connected by direct hydrological pathways such as surface runoff, overland flow, wet ground, marshy habitat and the waterside edge. These are the factors that matter most. The SPR model is therefore the correct approach because it focuses on the actual routes by which effects may occur, including habitat interaction, hydrological linkage, disturbance and ecological connectivity. For that reason, while wider European sites may be present within the 15km ZOI, the assessment should focus on the sites and species for which a clear source–pathway–receptor link exists.

Components of the SPR Model are as follows:

Source

The ‘source’ refers to the origin of a potential stressor or pressure. In AA terms this can be a pollutant discharge (point or diffuse), habitat disturbance, hydrological change (e.g. drainage, abstraction), nutrient loading, noise, light, etc. Characterisation of the source requires quantification where possible: type of substance or disturbance, magnitude/volume, timing, spatial extent, and persistence. In Ireland, for example in groundwater protection or nutrient risk assessment, source characterisation includes contaminant type, loading, hydraulic load, depth of release.

Pathway

The pathway is the route by which the source’s impact may travel to the receptor. This can involve physical, chemical, biological transport or transmission mechanisms: groundwater flow, surface runoff, overland flow, soil leaching, atmospheric dispersion, hydrological connectivity. It also includes attenuation, delay, or transformation along the route. The pathway determination involves understanding soil, subsoil, geology, hydrology, connectivity, etc. Ireland’s groundwater vulnerability mapping, studies such as “PATHWAYS” and the development of Pollution Impact Potential (PIP) maps reflect this component.

Receptor

The receptor is the ecological or human target which may be affected by the source via one or more pathways. In AA this often means the Qualifying Interests or Species Conservation Interests

of European Sites, their habitats, species, hydrological features (e.g. groundwater bodies, surface water bodies), ecosystem functions, etc. The receptor's sensitivity, location, spatial extent, ecological requirements, thresholds, exposure susceptibility are critical elements. For example, in groundwater protection the receptor may be the aquifer itself, or springs, wells, or Groundwater Dependent Ecosystems.

The source–pathway–receptor analysis in table below demonstrates that credible and complete impact pathways exist between the unauthorised path development and the relevant European site receptors, most notably the Lower River Shannon SAC and its otter qualifying interest, together with the functionally linked lakeshore habitat associated with the Lough Derg SPA. The principal pathways are direct spatial overlap with the SAC, local hydrological connectivity, and ecological disturbance along shoreline and marshy grassland habitat used by mobile fauna and water-associated birds. Accordingly, the potential for adverse effects on European sites cannot be excluded on the basis of objective scientific information, and the development requires full Stage 2 Appropriate Assessment through this remedial Natura Impact Statement.

Source	Pathway	Receptor	Potential Effect	Relevance to European Site Interests	Conclusion
Constructed pathway within and adjacent to the European site boundary	Direct land take and direct overlap with designated lands	Lower River Shannon SAC	Localised habitat loss / habitat modification arising from the physical presence of the path	The development is recorded as extending partly within the Lower River Shannon SAC, therefore a direct spatial relationship exists between the unauthorised works and the SAC.	Complete source–pathway–receptor linkage. Direct overlap with the SAC means potential effects must be assessed in detail at Stage 2.
Constructed pathway surface and margins	Surface water runoff, sheet flow, local drainage pathways, entrainment of fine sediments during rainfall	Lower River Shannon SAC aquatic and wetland interests	Reduction in local water quality, siltation, nutrient or contaminant transfer to adjacent wetland / lake-edge environment	The site baseline identifies hydrological connectivity and wet grassland / drainage features associated with the development area, supporting a credible runoff pathway to the receiving environment.	Complete linkage. Hydrological connection provides a plausible mechanism for indirect effects on SAC habitats and associated ecological function.
Constructed pathway and associated ongoing use	Disturbance through human presence, movement, noise and repeated activity along the shoreward route	Otter (QI of the Lower River Shannon SAC)	Disturbance to commuting and foraging behaviour; local displacement from favoured shoreline margins	The site supports ecological connectivity to waterside habitat and otter use has been identified as relevant within the assessment context. Your field survey further recorded otter spraint, mammal tracks leading to the water's edge, and evidence that the area is used for foraging and commuting, although no holt, couch or resting place was found.	Complete linkage. Otter is a key receptor and the pathway should be fully assessed in the rNIS.
Constructed pathway, path margins and any runoff from compacted surface	Functional habitat linkage between marshy grassland, waterside margin and shoreline	Otter	Minor degradation of foraging / commuting habitat at the land-water interface	The marshy and grassy ground adjoining the path and waterside area function as a transitional movement corridor for mammals. The absence of a holt does not remove the relevance of the habitat for commuting and foraging.	Complete linkage. Effects are more likely to relate to habitat function and disturbance than to loss of a breeding or resting site.
Constructed pathway and associated use by residents / visitors	Visual and noise disturbance transmitted to adjacent shoreline and lake-edge habitat	Lough Derg SPA / functionally linked habitat used by SPA bird species	Disturbance to feeding, loafing, roosting or local movement of SPA-associated bird species	The previous site assessment identified the adjacent lake habitat as functionally linked habitat for the SPA and noted disturbance and runoff as relevant pathways.	Complete linkage. Indirect effects on SPA species through disturbance should be considered in the impact assessment.
Constructed pathway and altered surface water behaviour	Runoff to adjoining lake-edge environment	Lough Derg SPA / SPA bird supporting habitat	Indirect effects on supporting wetland / nearshore habitat used by waterbirds	Where waterbird species rely on shoreline and shallow nearshore habitat, deterioration in habitat condition or repeated human activity can affect habitat suitability.	Complete linkage. Relevant to SPA species using the shoreline and shallows.

Source	Pathway	Receptor	Potential Effect	Relevance to European Site Interests	Conclusion
Constructed pathway	Terrestrial habitat connectivity	Badger	Use of site margins by badger; possible local disturbance	Badger footprints were recorded near the water's edge during the field investigation. However, badger is not a qualifying interest of the relevant SAC or SPA.	Not a European site receptor. Relevant to baseline ecology, but not to AA conclusions except as contextual ecological information.
Constructed pathway	Potential roost loss or lighting disturbance	Bats	Potential roost disturbance or loss	Your comprehensive bat roost potential survey identified no potential roost features. In the absence of roost features and in the absence of a direct Natura 2000 receptor pathway via bats, the linkage is not supported on the available evidence.	Incomplete linkage. Bats may be mentioned in the baseline and methodology, but they are not a primary AA receptor in this case.
Constructed pathway	Spread of invasive species via imported material / disturbed ground	SAC / SPA supporting habitat	Habitat degradation if invasive plants were introduced or spread	The baseline report structure includes invasive species consideration; where none are present, this pathway is not currently active but should be acknowledged as a risk managed through good site practice.	Potential pathway but currently low relevance unless invasive species are present or introduced.
Constructed pathway in combination with other plans / projects	Combined disturbance, habitat pressure, diffuse runoff and incremental shoreline effects	Lower River Shannon SAC and Lough Derg SPA	In-combination ecological pressure on designated habitats and species	In-combination effects must be considered as part of Appropriate Assessment under Article 6(3), including cumulative disturbance and water quality pressures.	Complete linkage in principle. Assessment in the cumulative effects section.

Table 2.4 Source Pathway Receptor Analysis.

3.0 Description of the Natura 2000 sites

3.1 Lower River Shannon SAC (002165)

The Lower River Shannon SAC is the key European site for this assessment because part of the completed pathway lies within its boundary and because the lower section of the route is immediately connected to wetland and shoreline habitat that contributes to the ecological function of the SAC. The SAC is designated for a broad range of habitats and species. Not all qualifying interests are equally relevant to this terrestrial pathway, but the assessment must consider whether any direct or indirect effect pathway exists in relation to the site's structure, function and conservation objectives, especially where there is hydrological connectivity, wetland habitat sensitivity, or use of the shoreline corridor by protected fauna such as otter.

Because the project is terrestrial in nature, many of the SAC's offshore, estuarine or geographically remote qualifying interests are not materially engaged by the completed works. The most relevant receptors are the wet grassland and shoreline habitats within the SAC, the water quality and runoff pathways leading towards the lake edge, and any Annex II species using the site as a commuting, foraging or transitional corridor.

The assessment therefore focuses on local habitat condition, pollution or sediment pathways, disturbance, fragmentation and changes in routine management or access that may affect ecological function on a small but sensitive footprint.

The Lower River Shannon SAC is a very large and complex European site extending across freshwater, riparian, lacustrine, estuarine and coastal environments. It is designated for a broad suite of Annex I habitats and Annex II species, many of which are associated with downstream estuarine and marine reaches rather than the immediate lakeshore environment at Clonfadda. For the purposes of this rNIS, the important point is not simply the size of the designation, but the fact that part of the completed pathway lies within the SAC boundary and that the lower section of the route is immediately connected to wet grassland, a ditch and the water's edge.

Accordingly, the SAC must be considered at two scales. At the local scale, the most relevant receptors are the shoreline margin and associated terrestrial and freshwater edge habitats, together with otter, which can use the corridor for commuting and foraging. At the wider system scale, a more attenuated water-quality pathway exists in principle to aquatic species and habitats of the SAC, including migratory fish and lamprey species. By contrast, many of the SAC's coastal, estuarine and marine habitats are functionally remote from the completed works and are considered only as part of a cautious system-wide review rather than as receptors of realistic direct effect.

The site-specific conservation objective for the SAC is to maintain or restore the favourable conservation condition of the Annex I habitats and Annex II species for which the site has been selected. The assessment in this report therefore considers whether the completed path, associated drainage behaviour and any future maintenance could undermine those objectives, either through direct habitat alteration within the SAC footprint, indirect hydrological change, deterioration in water quality, or disturbance to mobile Annex II fauna.

3.2 Lough Derg SPA (004058)

The shoreline and adjacent lake habitat should be considered potentially relevant to Lough Derg SPA because wetland birds recorded in the vicinity indicate local use of the broader waterside environment. The principal issue is not habitat loss within the SPA itself but whether the completed path could facilitate more frequent approach to the shoreline, thereby creating a small increase in local disturbance pressure to birds using the lakeshore or nearshore water. The significance of that pathway depends on the species present, the timing and frequency of use, the availability of alternative undisturbed shoreline habitat nearby and the extent to which the lower path becomes regularly used.

Lough Derg SPA is relevant primarily because the lake habitat adjoining the lower end of the development provides potentially functionally linked wetland habitat for SPA birds. The SPA is designated for Cormorant (breeding), Tufted Duck (wintering), Goldeneye (wintering), Common Tern (breeding) and the wetland and waterbird assemblage. While the development lies outside the SPA boundary, direct line-of-sight and

ecological linkage through the lakeshore environment mean that disturbance and localised runoff pathways require consideration.

In practice, the SPA assessment focuses on whether the completed path has materially altered the suitability of the adjoining shoreline for supporting feeding, loafing, resting or passage by waterbirds, or whether it has increased the likelihood of repeated disturbance through easier access to the shore. The path is relatively small in scale and no evidence currently indicates intense or continuous recreational use. Nevertheless, because the shoreline edge may contribute to the supporting habitat resource used by SPA birds, the assessment adopts a precautionary approach and accounts for each SPA feature individually in the impact tables that follow.

4.0 Receiving environment

4.1 Habitats

The main habitats recorded within and adjacent to the development are amenity grassland in the upper part of the site, dry meadows and grassy verges in the mid-slope section, wet grassland in the lower section close to the SAC boundary and shoreline, and a drainage ditch hydrologically linked to the lake. This habitat sequence is important because it demonstrates a gradient from managed domestic ground to wetter semi-natural habitat and, consequently, a gradient in ecological sensitivity.

Wet grassland (GS4) occurs in the lower part of the holding within the SAC boundary adjoining the lakeshore margin. This habitat is of particular ecological importance in the context of the current assessment because it is relatively less managed, more species-rich, seasonally wetter and more directly linked to the shoreline than the upper parts of the site. Even where the path footprint is narrow, any hardening, compaction, edging or repeated footfall in such habitat can alter local drainage behaviour, reduce vegetation cover, create drier micro conditions immediately adjoining the path and introduce a more abrupt boundary between habitats than would naturally occur.

The drainage ditch (FW4) lies adjacent to the southern side of the constructed path and is approximately 1.5 m wide with minimal flow. Its importance lies less in the volume of water present at any one time and more in its role as a direct hydrological pathway. During rainfall events or seasonal saturation, fine sediment, disturbed organic matter or any contaminated runoff from the path corridor could be conveyed toward the lake edge. The ditch and its margins may also provide linear movement habitat for mammals and amphibious fauna, and for that reason both water-quality protection and maintenance of vegetated margins are important components of mitigation.

Dry meadows and grassy verges (GS2) occupy the middle reaches of the site. These areas are slightly damp but drier than the lower wet grassland and are rank and unmanaged. Although of lower sensitivity than the SAC wetland margin, they remain relevant because they act as a transitional buffer between the domestic curtilage and the wetter lower ground. They also support mammal movement, provide limited filtration and interception of runoff and help reduce the visual and ecological harshness of the path corridor where retained in good condition.



Figure 4.1. Habitat map.

4.2 Invasive species

No invasive plant species were recorded within the development boundary or its immediate environs during site appraisal. The wider 2 km square in the NBDC records returned records for cherry laurel (*Prunus laurocerasus*) and Himalayan balsam (*Impatiens glandulifera*), but neither species is currently known from the subject corridor. This is relevant from a remedial perspective because any future works to install drainage, attenuation or habitat enhancement features should avoid inadvertently importing or spreading invasive plants via machinery, topsoil, aggregate or arisings.

4.3 Hydrology, geology, hydrogeology and flood risk

The development lies within the Lower Shannon catchment and within the Shannon (lower) sub-catchment. Hydrologically, the most relevant on-site feature is the ditch adjacent to the lower part of the path and the broader wet grassland / shoreline system that drains towards the lake margin. Prior to construction, rainfall falling on the route corridor would have dispersed diffusely across vegetated ground. The creation of a compacted path changes that response by reducing infiltration on the path surface, increasing flow velocity along the line of the route and potentially directing runoff to low points, margins or direct discharge locations. Even where the absolute runoff volume is modest, the ecological concern is that repeated small inputs can alter microtopography, create localised erosion or poaching, and deliver pulses of fine sediment or nutrient-bearing material to wetland habitats and the lake edge.

The site lies within the Lough Graney Groundwater Body, described as poorly productive bedrock. Groundwater effects are likely to be secondary compared with direct surface pathways, but they are not wholly irrelevant. Local excavation and imported material can modify shallow subsoil drainage and local seepage patterns. In addition, the lower section of the site appears susceptible to periodic saturation and flood influence, meaning that rainfall events, seasonal waterlogging and fluctuating water levels may increase the connectivity between the path margins, the ditch and the shoreline. From a risk perspective, this reinforces the need for attenuation, interception and maintenance of permeable vegetated buffers rather than hard-edged drainage responses.

4.4 Fauna

4.4.1 Birds

Wetland bird species have been recorded within the site environs, demonstrating use of the adjacent lake and shoreline habitat. The lower part of the site should therefore be treated as potentially relevant supporting habitat in the context of the nearby SPA. The pathway itself is unlikely to result in meaningful habitat loss for birds, but it may make the shoreline easier to access and could therefore contribute to localised disturbance, particularly if use intensifies during wintering or staging periods.

Bird records from the site visit indicate that the path corridor and adjoining habitats support a typical mix of common terrestrial and waterside bird species. Four species recorded were Green-listed under Birds of Conservation Concern in Ireland 4 (2020–2026), namely Reed Bunting (*Emberiza schoeniclus*), Eurasian Wren (*Troglodytes troglodytes*), European Goldfinch (*Carduelis carduelis*), and Hooded Crow (*Corvus cornix*). Mallard (*Anas platyrhynchos*), Great Crested Grebe (*Podiceps cristatus*) and Mute Swan (*Cygnus olor*) are recorded as Amber-listed, while Common Snipe (*Gallinago gallinago*) recorded on site is Red-listed. The Common Snipe record is the most ecologically notable, as it reflects the value of the wet grassland and marshy ground present within and adjoining the site. Overall, the bird data support the conclusion that the site and adjacent shoreline provide suitable habitat for foraging, sheltering and local movement by birds, and that the wetter habitats are of particular ecological relevance when considering potential disturbance or habitat effects.

Species	Location	BoCCI 4 Status
Reed Bunting (<i>Emberiza schoeniclus</i>)	On site	Green
Wren (<i>Troglodytes troglodytes</i>)	On site	Green
Goldfinch (<i>Carduelis carduelis</i>)	On site	Green
Hooded Crow (<i>Corvus cornix</i>)	On site	Green
Mute swan (<i>Cygnus olor</i>)	Off site	Amber
Great crested grebe (<i>Podiceps cristatus</i>)	Off site	Amber
Mallard (<i>Anas platyrhynchos</i>)	Off site	Amber
Snipe (<i>Gallinago Gallinago</i>)	On site	Red

SPA features are considered in this report, regardless of whether they were observed during the field visit. The species recorded locally to date indicate that the adjacent lake and shoreline are used by wetland birds and therefore should be treated as potentially functionally linked habitat. The significance of that linkage varies between species. It is strongest for species that occur in the open water and sheltered shoreline for feeding or resting and weaker for species whose principal breeding locations are likely to be elsewhere on the lake system.

Cormorant (*Phalacrocorax carbo*) is relevant because it can forage widely across freshwater systems and may use the wider lake for feeding and movement. The completed path is not of a type likely to affect open-water foraging habitat directly; however, any chronic increase in disturbance close to favoured shoreline roosting or access points would be undesirable. Given the modest scale of the path and the absence of lighting or high-intensity recreational infrastructure, the likely effect pathway is limited and localised.

Tufted Duck (*Aythya fuligula*) and Goldeneye (*Bucephala clangula*) are wintering waterfowl associated with open water and sheltered margins. Their relevance here arises from the potential for the lower path to increase approach to the shoreline and from any deterioration in the immediate littoral edge through runoff or trampling. No evidence is currently available to suggest that the completed path has removed important wintering habitat at a scale capable of affecting the SPA population; nevertheless, the path-edge and runoff controls recommended in this report are also appropriate for these species.

Common Tern (*Sterna hirundo*) is a breeding species of the SPA. The development site does not provide breeding habitat for tern, but the adjacent waters may be used for feeding flights or passage. The principal

consideration is therefore whether the development could indirectly affect nearshore water quality or create repeated disturbance at a level that would alter use of nearby waters. On the evidence available, any such effect would be very small, but the species is retained in the assessment in accordance with the precautionary principle.

The wetland and waterbird assemblage feature is also considered, as assemblage interests can be sensitive to incremental disturbance and local habitat degradation even where no single named species is disproportionately affected. The lower lakeshore margin should therefore be managed as a sensitive ecological edge, with retained vegetation, no permanent external lighting, and no unnecessary widening or hardening of the path terminus close to the water.

4.4.2 Non-volant mammals

The mammal methodology adopted for this draft is intentionally comprehensive. The entire site boundary, the grassy and marshy ground and the water's edge were walked in order to identify direct signs of otter, badger and other mammals and to assess whether any breeding, resting or sheltering feature was present within the zone potentially affected by the completed development or by future remedial works. Particular attention was paid to waterside access points, soft ground capable of preserving tracks, undercut banks, dense vegetation at path margins, transitions between wet and dry ground, fence lines, ditch crossings and any undisturbed cover that might conceal a holt, couch or sett.

Field observations confirm that one otter spraint was found and that mammal tracks / runs were present in the grass leading down to the water's edge. No otter holt, couch or regular resting place was identified within the survey area. The evidence therefore points towards use of the site as a foraging and commuting corridor rather than as a core breeding or resting location. This distinction is important for impact prediction: a corridor used intermittently for movement or feeding is typically more resilient to minor local habitat change than a site supporting a holt or consistent resting place; however, it still requires careful treatment because repeated disturbance, lighting, vegetation stripping or alteration of waterside cover can reduce corridor suitability over time.

Badger footprints were recorded near the water's edge. No badger sett was identified within the survey area and no evidence is currently available to indicate occupation of the works footprint by a sett. The prints nevertheless confirm occasional use of the lower ground and demonstrate that the site forms part of a broader mammal movement network. Any future remedial works involving excavation, vegetation clearance or disturbance of banks should therefore proceed with care and should include a pre-works check for any newly established badger or otter features.

Additional mammal signs, including tracks and runs in the grassland away from the shoreline, indicate general use of the corridor by common mammal species such as fox and badger, as well as the possibility of rats and voles, pine marten and stoat. While these species are not the focus of the Appropriate Assessment, their presence supports the broader ecological interpretation that the lower site functions as a connected edge habitat rather than an isolated domestic strip.

4.4.3 Bats

A comprehensive bat roost potential survey was undertaken and no potential roost features were identified. On the basis of the information supplied, no buildings, trees, walls, banks or other accessible features within the relevant survey area provide cracks, cavities, lifted elements, open joints, loose bark, deep ivy cover or other structures capable of supporting day roosts, maternity roosts or hibernation features. As such, no direct bat roost impact pathway is identified. Nevertheless, the path corridor should remain free of unnecessary permanent lighting because bats may forage or commute along the wider hedgerow, grassland and lakeshore landscape.

4.4.4 Other species

No additional protected-fauna constraints are currently known that alter the outcome of the assessment. The shoreline corridor and grassland mosaic nevertheless support general ecological connectivity and should be managed sensitively.

5.0 Impact prediction and assessment

5.1 Proximity and relevance of qualifying interests and SPA species to the proposed development site

The tables below set out, in a format consistent with previous Natura Impact Statements, the relevant qualifying interests and SPA species for the European sites potentially affected by the completed development. Each feature is considered in terms of its relationship to the site, whether a realistic source-pathway-receptor linkage exists, and the extent to which the completed pathway could have affected or could continue to affect the conservation objectives of the relevant European site.

This tabulated review distinguishes between features that are locally relevant, features for which only a highly attenuated system-scale pathway exists, and features that are functionally remote from the completed works. In doing so, it ensures that all relevant SAC qualifying interests and all SPA species are explicitly accounted for, while maintaining a proportionate focus on those receptors most plausibly engaged by the development, namely lakeshore habitats, local water quality, otter, wetland birds and the supporting shoreline corridor.

Table 5.1A. Lower River Shannon SAC (002165): qualifying interests and relevance to the proposed development site.

Code	Qualifying interest	Relationship to development site	Relevance / pathway and effect review
1110	Sandbanks which are slightly covered by sea water all the time	Remote estuarine/coastal parts of SAC; not present at or near the site.	Only a highly attenuated downstream water-quality pathway exists in theory. No direct interaction with the path footprint. No site-specific effect predicted.
1130	Estuaries	Downstream estuarine parts of the SAC are remote from the lakeshore works.	No direct pathway from the terrestrial path footprint other than diffuse, highly attenuated catchment-scale runoff. No meaningful effect predicted.
1140	Mudflats and sandflats not covered by seawater at low tide	Not present within the development corridor; feature occurs in downstream estuarine reaches.	Functionally remote. No direct habitat loss, fragmentation or disturbance pathway arising from the completed path.
1150	Coastal lagoons	Remote from the site and not represented within the immediate receiving environment.	Only broad catchment connectivity in theory. No realistic mechanism by which the small completed path would affect this feature.
1160	Large shallow inlets and bays	Marine/estuarine feature remote from the site.	No direct or ecologically meaningful pathway; no adverse effect predicted.
1170	Reefs	Marine/estuarine feature remote from the site.	No direct pathway. Any conceivable indirect pathway would be extremely diluted and not significant.
1220	Perennial vegetation of stony banks	Not recorded within the development footprint; feature associated with coastal/stony shore contexts elsewhere in the SAC.	No direct habitat interaction and no realistic indirect pathway from the completed path.
1230	Vegetated sea cliffs of the Atlantic and Baltic coasts	Geographically remote from the site.	No pathway for direct or indirect effect.
1310	Salicornia and other annuals colonising mud and sand	Downstream/coastal feature not represented near the site.	No direct pathway; no effect predicted.
1330	Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>)	Downstream/coastal feature; absent from surveyed path corridor.	No direct pathway. Catchment-scale influence from this completed path would be imperceptible.
1410	Mediterranean salt meadows (<i>Juncetalia maritimi</i>)	Downstream/coastal feature; absent from site.	No meaningful source-pathway-receptor linkage to this feature.
3260	Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation	Potentially relevant only insofar as surface runoff from the path could enter connected freshwater habitat.	Freshwater quality pathway exists in principle, but the site ditch is minor and no qualifying watercourse habitat was identified within the footprint. With runoff controls, no adverse effect predicted.

Code	Qualifying interest	Relationship to development site	Relevance / pathway and effect review
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinia caerulea</i>)	Potential local relevance where wet grassland and marshy ground occur adjacent to the lower path.	This is one of the more precautionarily relevant habitat features because localised hydrological change, trampling and edge effects could affect wet grassland structure. Effects are limited to a narrow corridor and are mitigable through path-edge and drainage measures.
91E0	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)	No alluvial woodland feature was identified within the developed corridor.	No direct habitat loss or degradation pathway identified from the completed works.
1029	Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)	Not known from the immediate site; any relevant populations would be in sensitive freshwater systems elsewhere within the SAC.	Sediment and water-quality pathways are considered in principle, but the completed path is too small and too remote from pearl mussel habitat for any measurable effect to arise.
1095	Sea Lamprey (<i>Petromyzon marinus</i>)	Could only be engaged via broader aquatic connectivity through the lake/river system.	Water-quality pathway exists in principle but is weak and highly diluted. No direct spawning or nursery habitat affected by the path footprint.
1096	Brook Lamprey (<i>Lampetra planeri</i>)	As above, only indirectly relevant via connected freshwater habitat.	No direct habitat loss to lamprey habitat identified. Potential runoff pathway is minor and mitigable.
1099	River Lamprey (<i>Lampetra fluviatilis</i>)	Indirectly relevant via connected freshwater habitat only.	No meaningful direct effect pathway; any indirect water-quality pathway is small and can be adequately addressed through remedial drainage controls.
1106	Salmon (<i>Salmo salar</i>)	Indirectly relevant through connected aquatic habitat and water quality.	Salmon is a more recognisable precautionary receptor for runoff and sediment pathways. However, no in-stream works occurred and the scale of the path is very limited. With attenuation and pollution controls, no adverse effect on SAC integrity is predicted.
1349	Common Bottlenose Dolphin (<i>Tursiops truncatus</i>)	Marine qualifying species remote from the site.	No credible pathway from a small inland path to this mobile marine species.
1355	Otter (<i>Lutra lutra</i>)	Highly relevant. The lower path corridor, wet grassland and water's edge provide commuting / foraging habitat and one spraint was recorded during field survey.	This is the key Annex II species for the assessment. No holt, couch or regular resting place was identified, so the main risk is disturbance and subtle degradation of the shoreline corridor rather than direct loss of a breeding/resting site. Retained cover, no lighting and runoff controls keep the effect below the threshold of adverse effect on integrity.

Table 5.1B. Lough Derg SPA (004058): special conservation interests and relevance to the proposed development site.

Code	SPA feature	Relationship to development site	Relevance / pathway and effect review
A017	Cormorant (<i>Phalacrocorax carbo</i>) [Breeding]	The adjacent lake and shoreline may be used for foraging movements or local passage; the development lies outside the SPA boundary.	Potential pathway is limited to disturbance at the shoreline and very localised water-quality effects. The completed path does not remove breeding habitat and is unlikely to alter use of the lake at population level.
A061	Tufted Duck (<i>Aythya fuligula</i>) [Wintering]	Open water and sheltered margins adjoining the lower site may contribute to supporting wintering habitat.	Potential pathway relates to increased human approach to the shore and subtle degradation of littoral edge habitat. Given the small scale of the path and limited evidence of intensive use, no significant effect is predicted.
A067	Goldeneye (<i>Bucephala clangula</i>) [Wintering]	As for Tufted Duck, relevance arises from use of open water and sheltered shoreline habitat in the wider lake system.	The completed path does not materially alter open-water habitat. Any disturbance effect is expected to be intermittent and localised only.
A193	Common Tern (<i>Sterna hirundo</i>) [Breeding]	No breeding habitat occurs within the development footprint, but adjacent waters may be used for feeding or passage.	Potential pathway is indirect, via disturbance close to the shore or localised runoff to nearshore water. Neither pathway is of a magnitude likely to affect the SPA population.
A999	Wetland and Waterbirds assemblage	The lower shoreline and wet grassland edge form part of the broader wetland context that may support assemblage interests.	Assemblage-level consideration reinforces the need to retain shoreline vegetation, avoid lighting and prevent runoff concentration. With these measures, the completed path is not predicted to adversely affect the ecological function of supporting habitat.

5.2 Impacts on habitats

The main habitat effect is the permanent alteration of a narrow linear corridor across the grassland mosaic, including part of the SAC footprint. Although the path occupies a limited area relative to the wider lakeshore landscape, its ecological importance is defined by location rather than scale. A compacted path inserted into semi-natural grassland can remove vegetation, compress the rooting zone, alter micro-drainage, interrupt sheet flow and create a drier and more disturbed edge along its margins. In upper amenity and drier grassland this effect is of low ecological consequence. In the lower wet grassland and within the SAC it is more sensitive because the habitat relies on shallow, diffuse wetness and vegetated continuity.

At present, retained vegetation along the ditch and shoreline provides some buffering, filtration and visual softening of the corridor, and the scale of the path remains modest. However, in the absence of specific runoff attenuation and path-edge management there remains a plausible pathway for localised sedimentation, erosion of margins, concentration of stormwater and incremental degradation of the wet grassland edge. The predicted habitat effect is therefore best characterised as localised, low in spatial extent but potentially moderate in sensitivity because it occurs within and immediately adjacent to a European site. With targeted remedial measures the effect can be reduced to a level that does not adversely affect the integrity of the SAC.

Potential habitat effects can be grouped as follows. First, there is a direct and permanent footprint effect where vegetation has been replaced by path material. Second, there is an edge effect whereby the habitat immediately beside the path may become more trampled, slightly drier or more open to casual encroachment. Third, there is a hydrological effect whereby rainfall may become channeled rather than

dispersed. Fourth, there is a maintenance effect, because future patching, reprofiling or edge-cutting could extend disturbance if undertaken without ecological controls. The remedial strategy adopted in this report is designed to address each of these mechanisms, rather than relying on a single engineering measure.

No evidence currently indicates widespread habitat deterioration beyond the immediate corridor. There is also no evidence that the completed path has fragmented a large block of high-value habitat or severed a critical hydrological regime at landscape scale. The assessment therefore does not identify a significant adverse effect at site scale, provided the identified localised risk pathways are remedied and future maintenance is controlled.

5.3 Impacts on species

Otter is the most relevant Annex II species. The field evidence currently available indicates use of the lower path corridor and shoreline by commuting and foraging otter. The absence of a holt, couch or other regular resting feature within the affected area materially reduces the risk that the completed path has caused direct loss of a breeding or resting place. Nonetheless, the species remains relevant because otter routinely use linear waterside corridors, vegetated margins and access points between wet grassland and open water, and these features can be affected by repeated disturbance or simplification of cover.

The presence of one spraint and mammal tracks leading to the shore is consistent with ongoing use of the corridor. The likely species-level effects of the completed path are therefore indirect rather than direct: a small reduction in vegetated cover beside the route, a possible increase in human approach to the water's edge, and some potential for future disturbance if repairs or alterations are undertaken without ecological supervision. In the context of the evidence available, these effects are localised and limited. The corridor remains passable, the shoreline remains accessible and no resting structure has been identified. The path is therefore not considered to create a barrier, severance effect or loss of a key otter resource. The principal requirement is to retain vegetation, avoid lighting and manage future works carefully so that the lower corridor continues to function as a permeable movement route.

Badger is not a qualifying interest of the European site, but the recorded footprints show that the lower ground is also used by terrestrial mammals. This reinforces the need to avoid intensive edge management, deep open excavations left overnight, indiscriminate vegetation stripping or spoil deposition near the shoreline. Such precautions are proportionate and also support the broader ecological function of the corridor.

Bird effects are considered primarily in relation to disturbance rather than habitat loss. The completed path may make the shoreline more accessible and could marginally increase the frequency of human presence near the water. On the information currently available, this pathway is likely to be intermittent and localised rather than chronic or extensive. There is no evidence of lighting, boating infrastructure, large gathering areas or intensive recreational use associated with the route. For that reason, any bird-related effect is predicted to be low, but this conclusion should be reviewed against the final bird records before issue.

No bat-roost impact is identified because no potential roost features were recorded. Likewise, no pathway is identified by which the completed path would significantly affect bats at population level. As a good practice measure, permanent lighting should be avoided so that the wider landscape remains suitable for nocturnal commuting and foraging.

5.4 In-combination impacts

In-combination effects must be considered with other plans or projects capable of affecting the same European sites or the same local pathways. In this case, the principal in-combination mechanisms would be cumulative shoreline disturbance, cumulative small-scale wetland loss, or repeated water-quality pressures arising from domestic development, path creation, drainage works, shoreline access improvements or maintenance activities in the vicinity. The completed path is small in scale, but cumulative assessment is still required because multiple individually modest works can, in some locations, incrementally erode the function of sensitive shoreline margins.

On the basis of the information currently available, no other single plan or project has been identified that, together with the pathway, would be likely to generate a materially significant combined effect on the integrity of the SAC. Nevertheless, the mitigation strategy in this report has been framed conservatively so

that the development does not add incrementally to any background pressure arising from the wider pattern of domestic shoreline use.

5.5 Residual effects

Without remedial intervention, some uncertainty would remain regarding long-term control of surface-water runoff from the hard path surface to the ditch and lakeshore margin, and regarding the degree to which routine use or future maintenance could subtly degrade the lower wetland edge. With the implementation of the measures identified in this report, the remaining effects are predicted to be localised, controlled and not adverse to the integrity of the Lower River Shannon SAC or any connected European site. The completed development would remain a small intervention in the context of the wider shoreline landscape, but one whose local risks have been specifically addressed through a targeted remedial package.

6.0 Mitigation and remedial measures

The following measures are recommended to remedy or further reduce any potential effect of the completed path. Together, the measures address hydrology, habitat protection, future maintenance controls and precautionary fauna protection.

The mitigation strategy for the development is based on a source-control approach, with runoff managed as close to where it arises as possible. In this context, a permeable path surface is considered the most appropriate primary remedial measure, supported by simple vegetated attenuation and filtration features along the route. This approach is consistent with current best-practice guidance, which emphasises reducing impermeable cover, using permeable surfaces and planted features, and providing retention, storage and treatment of runoff before it reaches the receiving environment.

Potential Impact	Receptor	Mitigation Measure	Residual Effect
Increased surface water runoff from the constructed path	Lower River Shannon SAC and adjacent hydrologically linked shoreline habitat	ACO drains or equivalent linear surface water interceptors shall be installed across the pathway at approximately 10 metre intervals , or at such spacing as may be refined by the final engineering design, particularly on sloping sections. These shall intercept surface water runoff and direct it laterally into the adjacent planted margins for dispersion, infiltration and attenuation, rather than allowing runoff to continue downslope toward the shoreline. The planted margins shall be retained and managed to provide interception, filtration and additional attenuation of runoff. No direct discharge from the drains to the shoreline or waterside habitat shall occur.	Residual effect reduced to slight adverse / not significant , subject to correct installation, discharge to stable vegetated margins, and ongoing maintenance.
Transfer of sediment, fine material, or pollutants from the path to adjacent habitat	Lower River Shannon SAC; shoreline habitat; SPA-linked habitat	Provide vegetated margins at suitable locations along the route , particularly where runoff could otherwise track downslope. These features should be designed to retain, slow, filter and treat runoff before it reaches adjacent habitats. The guidance identifies retention, storage and treatment as key functions of nature-based runoff management. The borders of the pathway should be planted with Willow, Birch and Alder and maintained to allow filtration and to slow any runoff as per nature-based solutions in the DHLGH guidance.	Residual effect reduced to slight adverse / not significant .

Concentration of runoff along sloping sections of the path	Lower River Shannon SAC; adjacent wet grassland and shoreline margin	Install local flow-break measures , such as small cross-drains, stone check features, or equivalent breaks in gradient where runoff could otherwise become channelled. This accords with the guidance approach of slowing flow and using linked measures rather than relying solely on piped drainage. Mitigation strategy map shows design. Drains across the pathway every 10 meters. Drainage channels filled with clean stones to filter and slow and surface water runoff. See design in appendix.	Residual effect reduced to negligible to slight .
Untreated runoff entering sensitive habitat directly	Lower River Shannon SAC; SPA-linked shoreline habitat	No direct drainage outfall shall discharge from the path to the shoreline, wetland edge, or adjoining habitat. Runoff shall be managed within the path corridor through infiltration, vegetated interception and local attenuation. The guidance states that runoff should be dealt with as close to source as possible and buffered before discharge.	Residual effect reduced to not significant .
Loss of buffering capacity along the path edge	Lower River Shannon SAC; otter foraging and commuting habitat; bird habitat	Retain and protect existing vegetated margins adjoining the path and reinforce these with additional native vegetation where necessary. Vegetated margins will assist runoff interception and maintain habitat continuity along the path corridor. The guidance supports linked planted areas as part of a wider SuDS train and biodiversity network.	Residual effect reduced to slight and localised .
Short-term release of silt or contaminants during remedial works	Lower River Shannon SAC; shoreline habitat; aquatic environment	All remedial works shall be carried out in accordance with best practice pollution prevention measures , including control of loose material, prevention of silt release, prompt removal of excess spoil, and avoidance of works during unsuitable ground conditions where practicable.	Temporary residual effect negligible , provided controls are implemented.
Accidental pollution from fuels or construction materials	Lower River Shannon SAC; shoreline habitat	No storage of fuels, cementitious material, or hazardous substances shall take place within or adjacent to the shoreline margin , and refuelling shall not occur near the water's edge. This should be confined to the front garden area at the Northwest Corner of the property.	Residual effect negligible , with standard good practice controls.
Disturbance to fauna during implementation of remedial works	Otter; birds using on-site and adjacent habitats	Works shall be restricted to daylight hours and completed in an efficient and time-bound manner , with unnecessary disturbance of shoreline and marshy habitat avoided.	Temporary residual effect slight , short-term only.
Failure of mitigation over time due to lack of upkeep	Lower River Shannon SAC; hydrologically linked habitats	The permeable surface and associated vegetated drainage features shall be subject to periodic inspection and maintenance , including removal of sediment build-up, repair of erosion	Long-term residual effect not significant , subject to maintenance.

		points, and reinstatement of any blocked or degraded infiltration features. The guidance stresses that long-term care and maintenance is essential and that surface systems are advantageous because defects are visible and can be addressed.	
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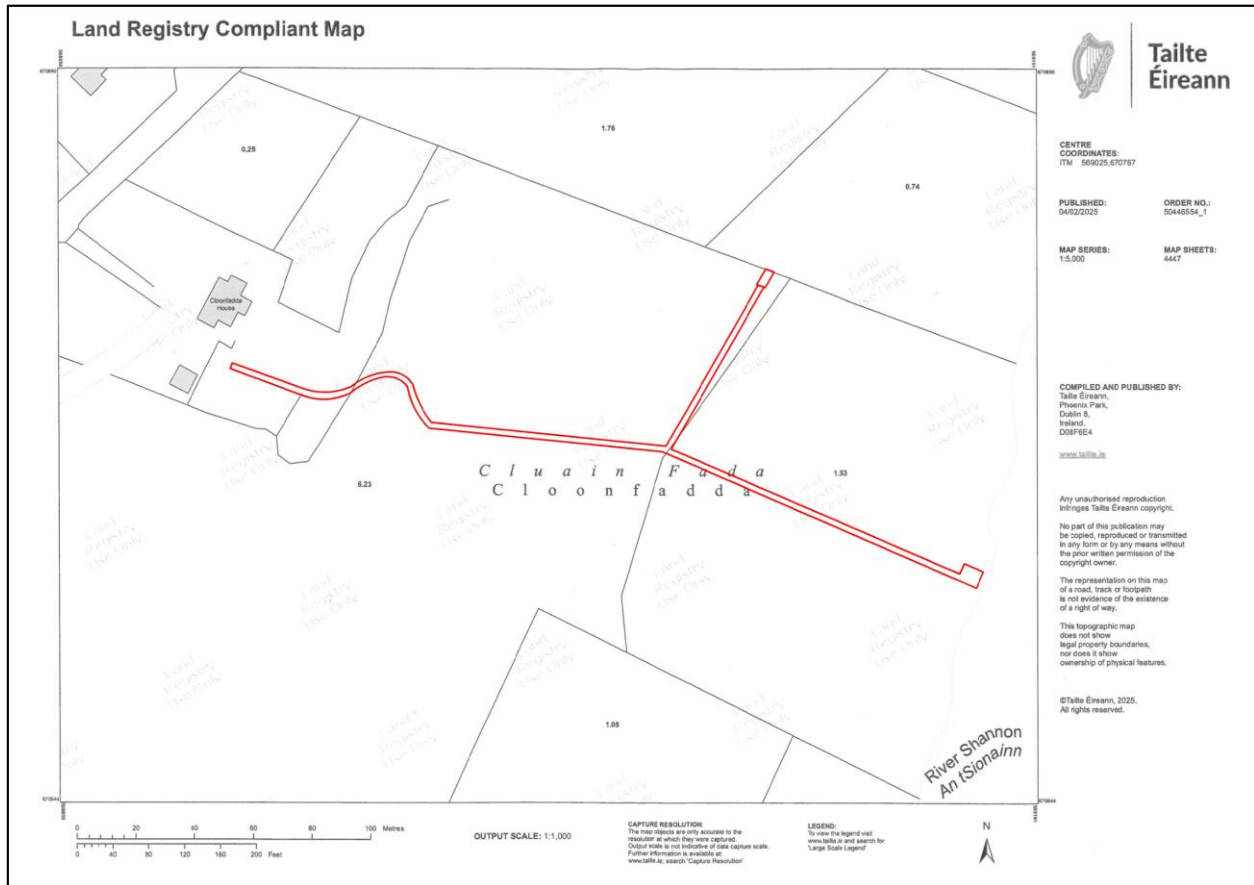
7.0 Conclusion

This Remedial Natura Impact Statement has assessed the unauthorised pathway at Clonfadda House in the context of the Lower River Shannon SAC (002165) and the functionally linked shoreline habitat associated with Lough Derg SPA (004058). The assessment focused on the real pathways for effect. These are the partial overlap of the path with the SAC, the hydrological connection between the path, adjacent wet grassland, the ditch and the shoreline, and the use of the lower corridor by otter and birds. The survey findings show that the lower part of the site is ecologically sensitive. One otter spraint was recorded, along with mammal tracks leading to the water's edge and badger footprints near the shoreline. No otter holt, couch, badger sett or bat roost feature was found within the survey area. The evidence therefore indicates that the lower corridor is used mainly for commuting and foraging, rather than as a known breeding or resting site. The main risk identified in this report is surface water runoff from the path. This is especially relevant on the steeper sections. If left unmanaged, runoff could carry fine sediment and other material downslope into adjacent wet grassland, the ditch and the shoreline margin. That could result in localised sedimentation, reduced water quality and gradual degradation of sensitive habitat within or linked to the SAC.

The report also recognises that removal of the pathway would not be environmentally neutral. Full removal would require excavation and disturbance of the existing path and adjoining ground. In this setting, that would create a real risk of suspended particulate matter, sediment release and transport of disturbed material to the nearby ditch, shoreline and connected water environment. For that reason, the preferred approach is not wholesale removal, but retention of the path with targeted remedial mitigation. The remedial strategy is designed to break the runoff pathway and manage water close to source. ACO drains, or equivalent linear interceptors, will be installed across the path at approximately 10 meter intervals, particularly on the steeper sections. These drains will intercept surface water and direct it laterally into the planted margins on either side of the path, rather than allowing runoff to continue downslope toward the SAC and shoreline. These planted margins will be reinforced with willow, alder and birch. Together, the drains and planted margins will act as a simple nature-based treatment system. They will help to slow runoff, filter suspended solids and associated pollutants, and allow water to disperse and infiltrate through vegetated ground. This will reduce the risk of untreated runoff reaching the shoreline or other sensitive habitat.

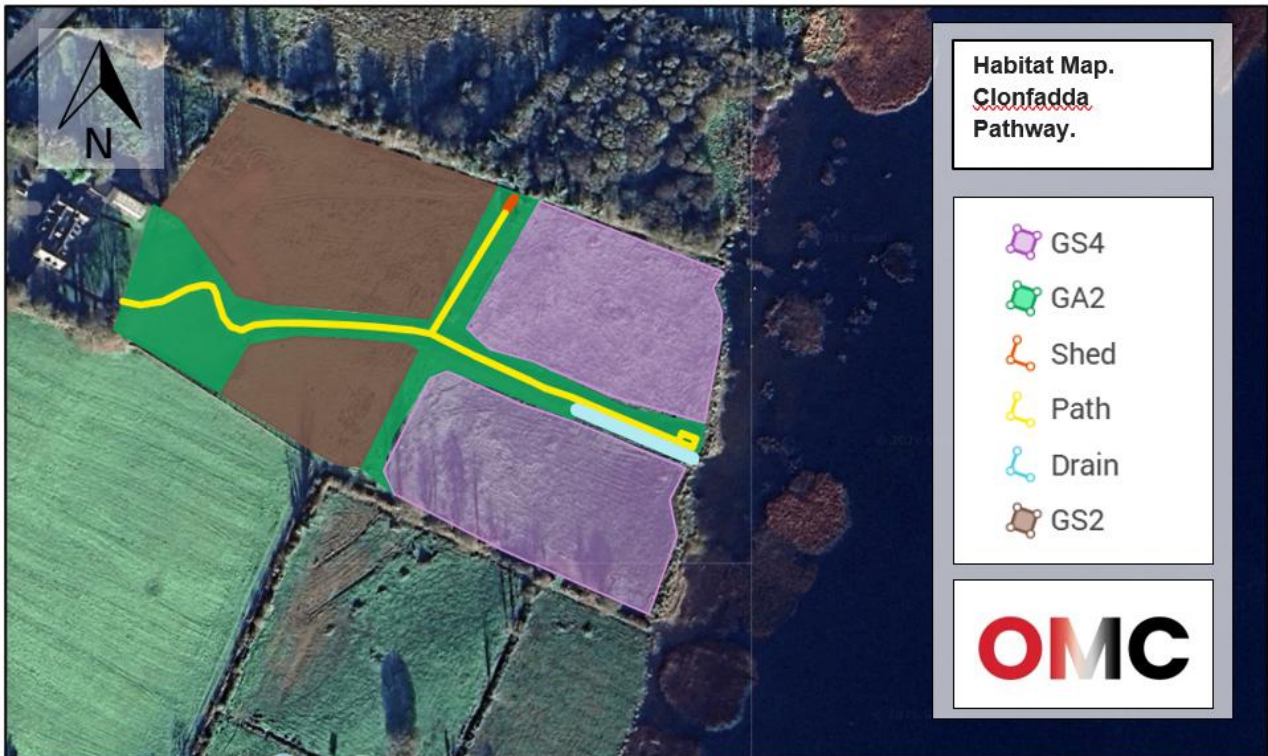
With these measures in place, the path will no longer act as an uncontrolled runoff route. Instead, water will be intercepted at regular intervals and directed into stable vegetated margins for attenuation and filtration. This will protect the adjacent wet grassland, shoreline habitat and local water quality conditions that support the ecological function of the receiving environment, including the relevant qualifying interests of the SAC and the surrounding habitats used by otter and birds. Having regard to the scale and nature of the development, the local ecological conditions, and the mitigation measures set out in this report, it is concluded that the pathway, as remediated, will not adversely affect the integrity of the Lower River Shannon SAC, either alone or in combination with other plans or projects. No adverse effect is predicted on the ecological function of the adjacent shoreline habitat in relation to Lough Derg SPA. Residual effects are therefore considered to be localised, controlled and not significant in Appropriate Assessment terms.

Appendix A - Site location map



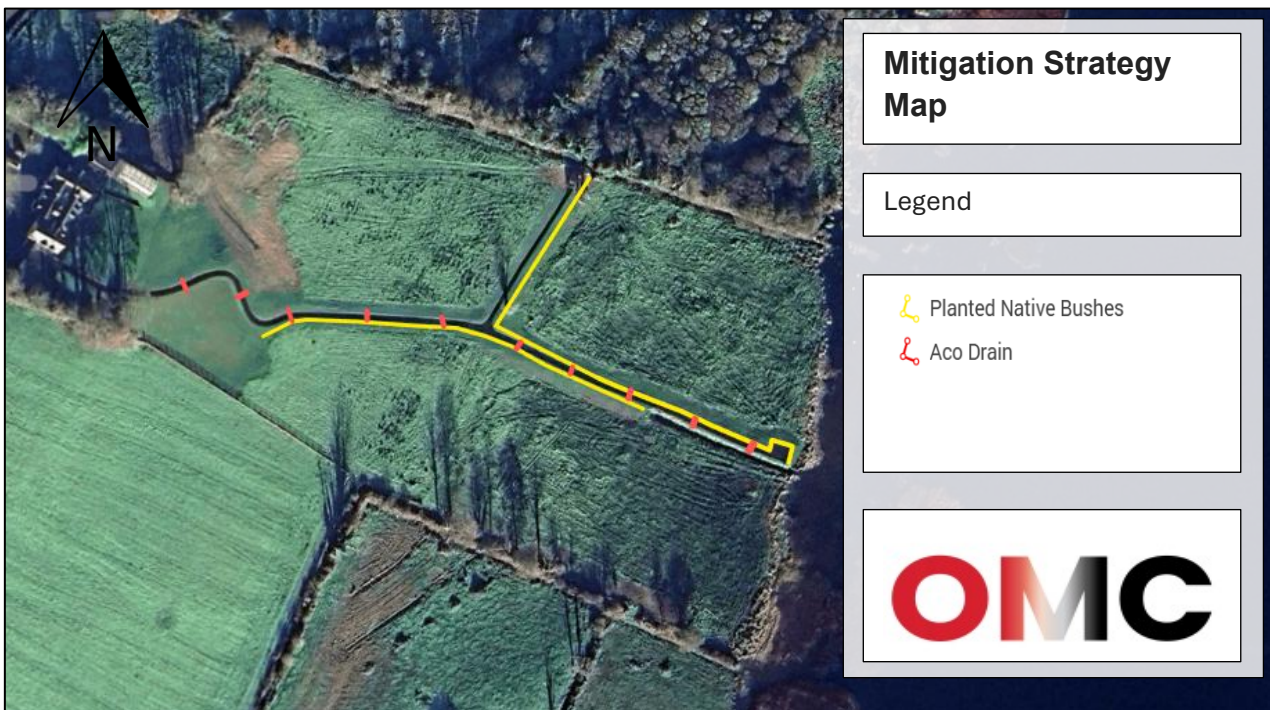
Site location map supplied by client.

Appendix B - Habitat map



Habitat map reproduced from the site habitat mapping supplied for the assessment.

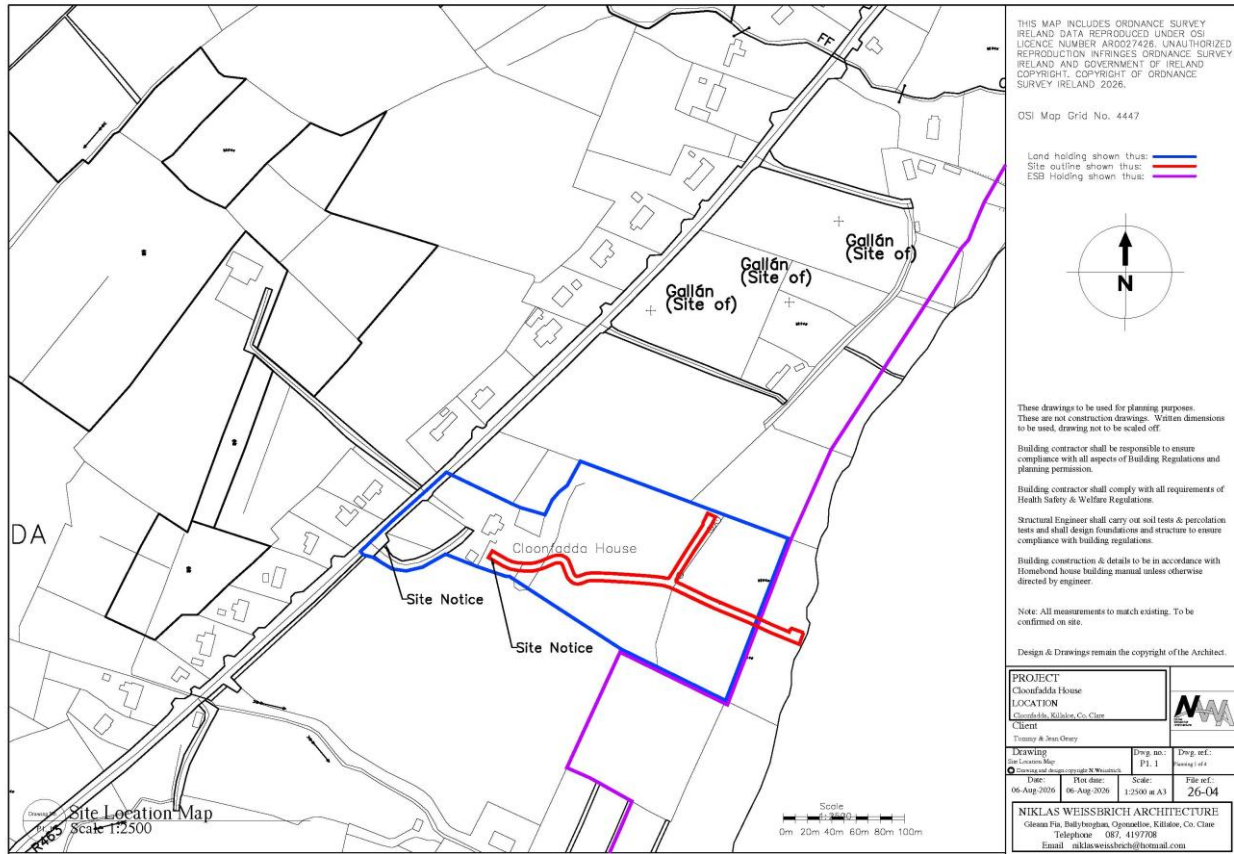
Appendix C – Mitigation Strategy Map of Recommended Native Planting Placement and Drainage



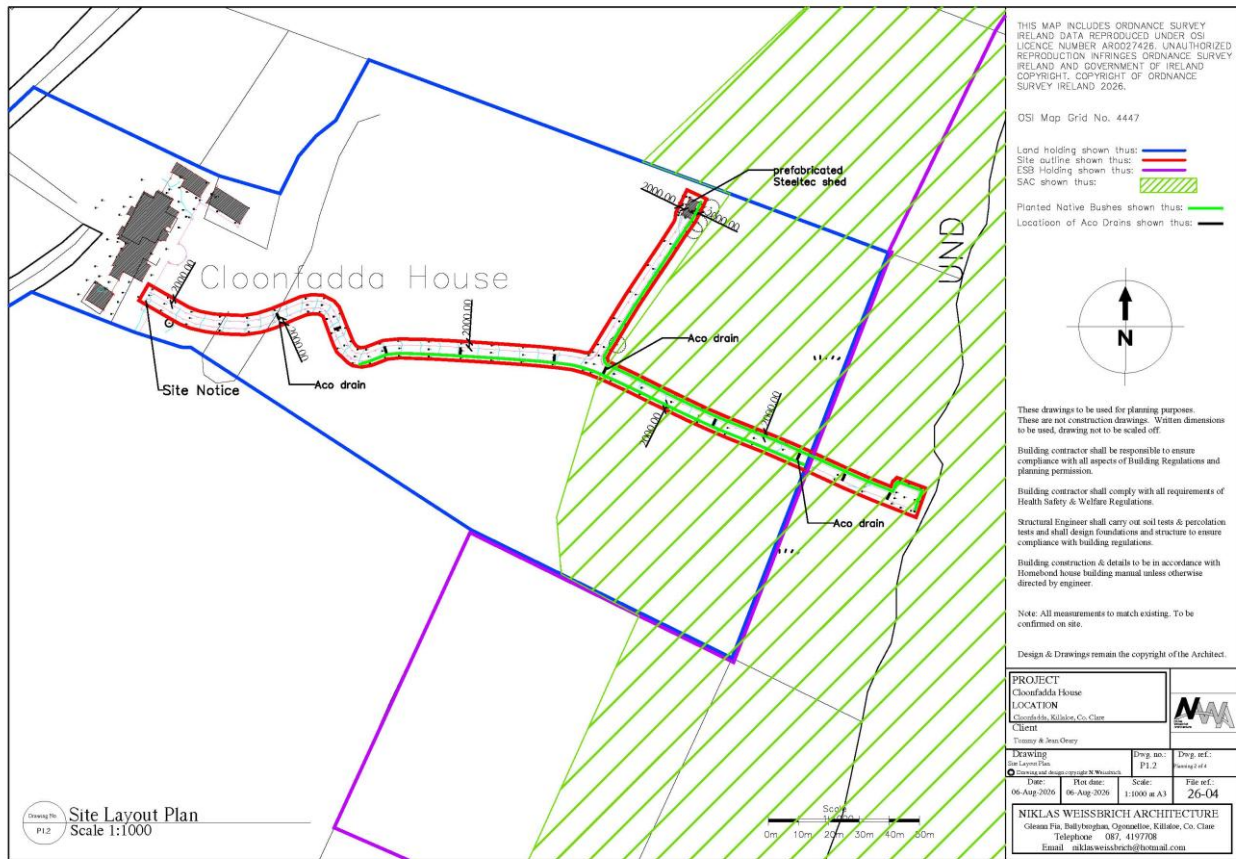
Appendix D – Photographs of Site and of Ecological Features

		
Side view of path	Bottom of path near waters edge	Lower half of path
		
Upper half of path from the house	Visible edging and curbing of path	Entirety of path looking towards the water at the Eastern edge of the site
		
Otter spraint	Water margin at edge of site	Drain feature
		
Badger footprint	Bank and shallow ditch on Southern edge of site	Well-worn mammal tracks likely used by multiple species
		
Landscape of SAC habitat (GS4) looking East to West	Possible otter belly slide leading to the property and water's edge, leading from the trees beyond the property boundary.	

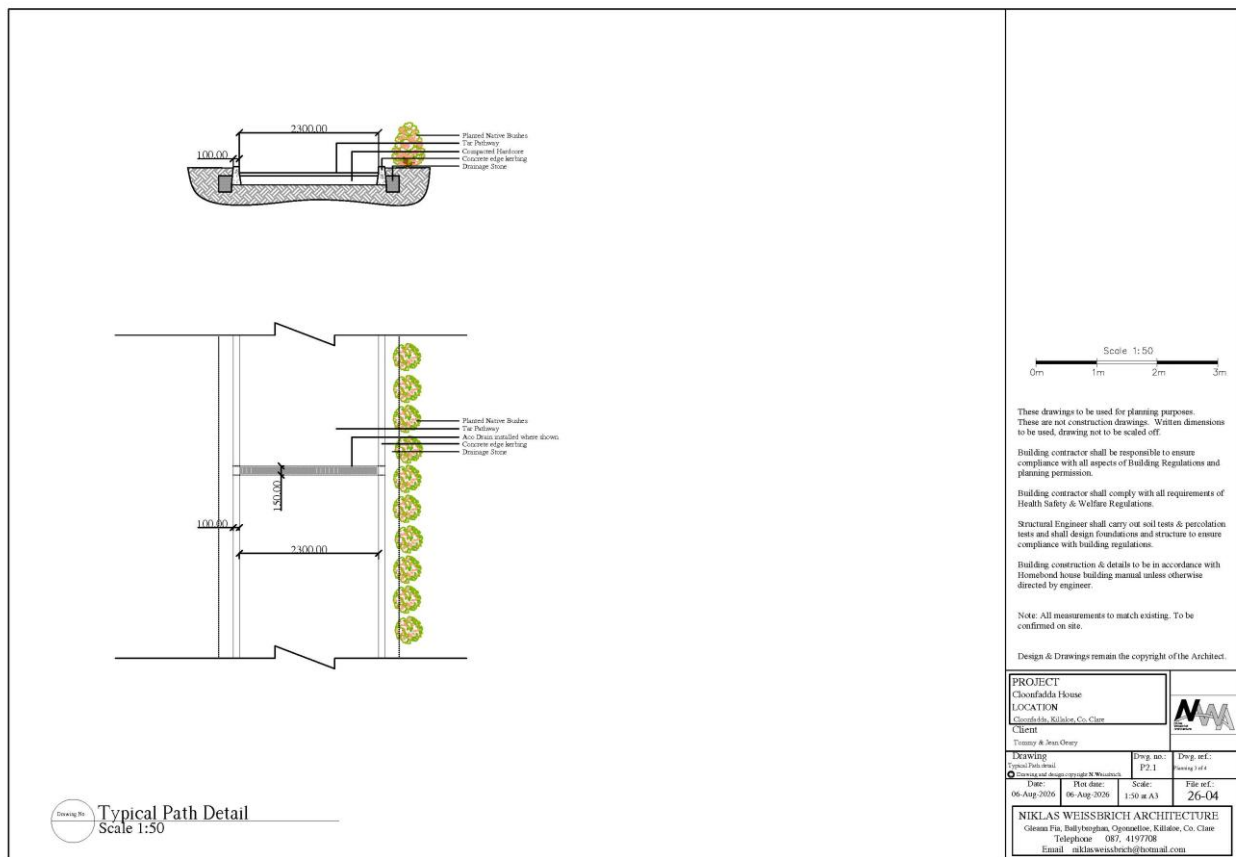
Appendix E – Site location



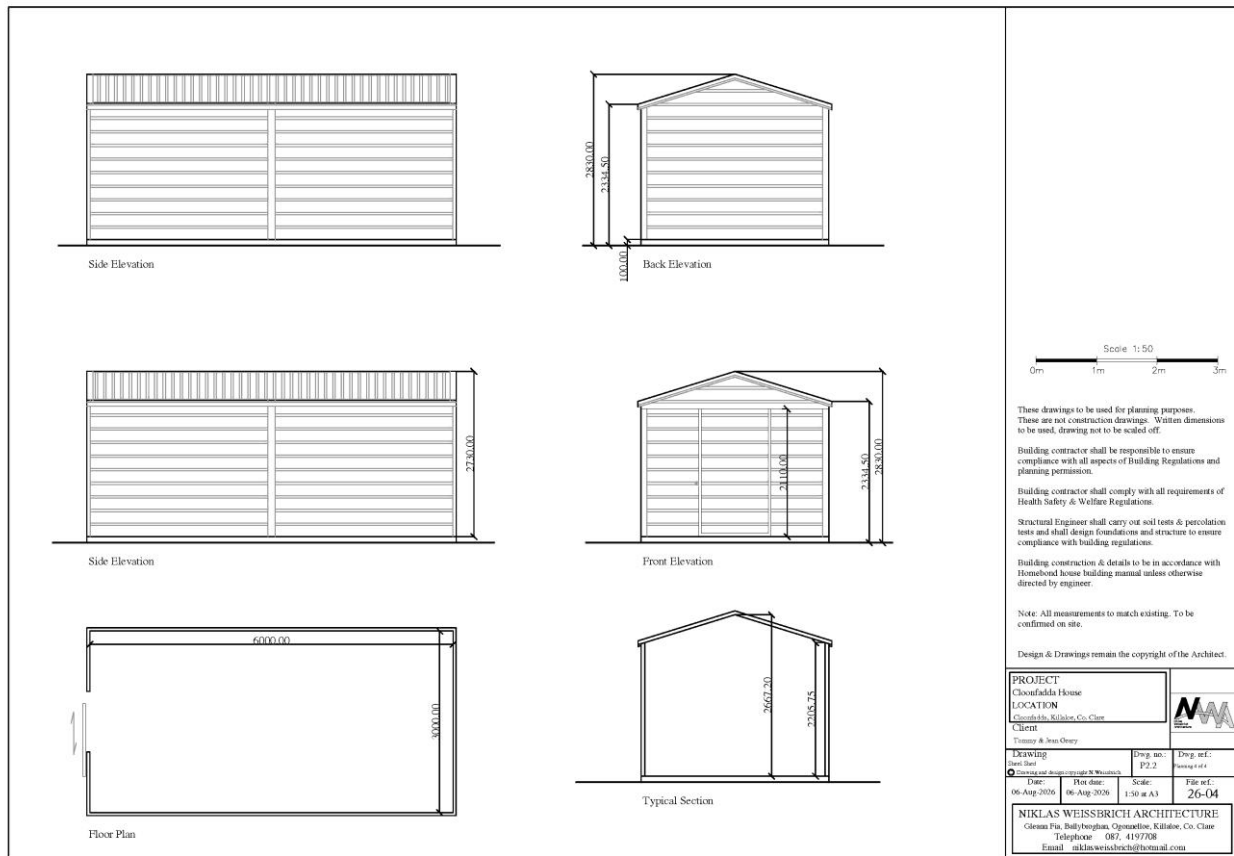
Appendix F – Site layout plan



Appendix G – Path Detail



Appendix H – Steel shed



Appendix I - References

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