## CONTENTS

# INTRODUCTION

5.1 This Environmental Impact Assessment Report (EIAR) provides supporting information to accompany a planning application to Meath County Council by Kilsaran Concrete Unlimited Company (also referenced as Kilsaran) in respect to their existing quarry extraction operations at Rathcore Quarry, near Enfield, County Meath. This provides the Biodiversity chapter of the EIAR.

## Site Description

5.2 Rathcore Quarry is located within the townlands of Rathcore and Connellstown approximately 1 kilometre (km) southwest of the village of Rathcore and 3.3km north-west of the town of Enfield, Co. Meath (refer to **Figure 1-1**) at Irish Transverse Mercator (ITM) 675899, 744329. A full site description of the Site is included in Chapter 2.

5.3 The surrounding landscape is characterised by mixed agricultural land comprised of relatively large fields some with hedgerow / treeline boundaries, but also includes a golf course to the northeast of the quarry. The M4 motorway forms a prominent landscape feature running in an east / west direction approximately 3 km south of the quarry. The largest local urban populations include the village of Rathcore and the town of Enfield with other small rural settlements and isolated farmsteads scattered along the roads and lanes that cross this area.

## Details of the Proposed Development

5.4 The proposed development, which is detailed fully in Chapter 2 of the EIAR, is summarised as follows:

- Permission for continued use of the previously permitted developments under P. Reg. Ref. No's. 01/1018 (PL17.127391); 95/1416 (PL17.099325) and 91/970 (PL17.089787) to include the existing quarry, drilling, blasting, crushing and screening of rock and related ancillary buildings and facilities;
- Permission for continued use of the previously permitted developments under P. Reg. Ref. No. TA/120923 consisting of a discharge water treatment facility comprising two lagoons (30m x 13m), an oil interceptor, a reed bed (27m x 10m) and a concrete canal with "V" notch weir;
- Permission for a small lateral extension of c.0.9 hectares from the existing quarry area of c.9.7 hectares as permitted under P. Ref. 01/1018 (PL17.127391) to give an overall extraction footprint of c.10.6 hectares;
- Permission for the deepening of the overall extraction area (c.10.6 hectares) by 2 no. 15m benches to a final depth of c.45m AOD from the current quarry floor level of c.75m AOD as permitted under P. Ref. P. Ref. 01/1018 (PL17.127391);
- Permission for a proposed new rock milling plant to be enclosed within a steel-clad building (c.575m$^2$ with roof height of 22.5m and exhaust stack height of 28.2m);
- Replacement of existing septic tank with a new wastewater treatment system and constructed percolation area;
- Restoration of the site to a beneficial ecological after-use;
- All associated site works within an overall application area of 31.1 hectares. The proposed operational period is for 20 years plus 2 years to complete restoration (total duration sought 22 years).

## Purpose of this Report

5.5 The purpose of this Biodiversity chapter is to describe the baseline ecological conditions at the Site and to identify potential significant effects associated with the proposed development. Where necessary appropriate mitigation measures will be set out to reduce residual effects to a suitable level.

5.6 This chapter forms part of the EIAR that will be submitted with the planning application to assist the competent authority, in this case Meath County Council, to carry out an Environmental Impact Assessment (EIA) of the proposed extraction and restoration development.

## Contributors / Author

5.7 SLR Project Ecologist Victoria Molloy and SLR Project Ecologist Jake Matthews prepared this report and SLR Associate Ecologist Michael Bailey provided a review.

5.8 Victoria Molloy holds a BSc. in Zoology from the University of Galway (formerly National University of Ireland, Galway). She has been working in consultancy for two years and has experience in terrestrial ecology, ornithological surveys, and in the preparation of Appropriate Assessments under the Habitats Regulations/Directive and in the writing of Natura Impact Statements. Victoria is a Qualifying Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

5.9 Jake holds and MSc in ecology and environment management from Liverpool Hope University and a BSc in wildlife conservation from the University of Salford. Jake has over four-years' experience in ecological consultancy and has worked on a range of projects and ecological reports and surveys.

5.10 Michael Bailey holds a BSc. in Biology and Ecology from the University of Ulster and an MSc. in Quantitative Conservation Biology from the University of the Witwatersrand in Johannesburg. He has extensive experience in ecological studies and assessments across a range of sectors in Ireland and of agricultural, mining and renewable energy projects across Africa. He is a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM).

## Relevant Legislation and Policy

### Legislation

5.11 The following legislation are relevant to this Chapter:

- The EIA Directive (2014/52/EU);
- The Habitats Directive (92/43/EEC);
- The Birds Directive (2009/147/EC);
- European Communities (Birds and Natural Habitats) Regulations, 2011 - 2015.
- The Wildlife Acts 1976 as amended;
- Wildlife (Amendment) Act, 2000, 2010, 2012;
- The Flora (Protection) Order 2015.
- The Planning and Development Act 2000 (as amended).

5.12 The details of these legislation are summarised in **Appendix 5-A** of this Chapter.

### Relevant Planning Policy

5.13 The relevant local planning policies have been extracted from the Meath County Development Plan 2021-2027 and are presented in **Appendix 5-A** of this Chapter. These policies are specific to "Chapter 6: Infrastructure Strategy" and "Chapter 8: Cultural and Natural Heritage Strategy" and are concerned with the policies and objectives relating to biodiversity and designated sites.

### Biodiversity Planning

5.14 Ireland's National Biodiversity Plan 2017–2021[1] identifies actions towards understanding and protecting biodiversity in Ireland with the vision "*that biodiversity and ecosystems in Ireland are conserved and restored, delivering benefits essential for all sectors of society and that Ireland contributes to efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally*".

5.15 Local Biodiversity Action Plans have been produced by some County Councils. This includes the County Meath Biodiversity Plan 2015-2020 that identifies a programme of actions to protect and enhance biodiversity at the local level.

# METHODOLOGY

5.16 The methods used to carry out the survey of the Site, to evaluate the ecological value and to prepare the biodiversity chapter is outlined in this section. The assessment methodology for this proposal was developed using the standard professional impact assessment guidance published in 2018 by the Chartered Institute of Ecology and Environmental Management (CIEEM).

## Scope of the Chapter

5.17 The scope of this Biodiversity Chapter is to identify potential impacts likely to occur from the proposed progressive extraction and restoration operations, and to determine if the effects on biodiversity are significant. The scope of the report includes the provision of mitigation, compensation and enhancement measures as required.

## Zone of Influence

5.18 The 'zone of influence' for a project is the area over which ecological features may be subject to significant effects because of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries. The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change (CIEEM, 2018).

5.19 The 'zone of influence' for the project can be identified through review of the nature of the proposed development / works, the presence / absence of surface water receptors, the presence of ecological connectivity to the wider landscape and distance from known ecologically sensitive sites.

[1] Department of Culture, Heritage and the Gaeltacht (2017). *National Biodiversity Plan 2017-2021*. Department of Culture, Heritage and the Gaeltacht, Dublin.

## Desk Study

5.20 A desk study was carried out to collate the available existing ecological information on the Site. The Site and the surrounding area were viewed using existing available satellite imagery using Google maps[2] and Bing maps[3] .

5.21 The National Parks and Wildlife Service (NPWS)[4] and the National Biodiversity Data Centre (NBDC)[5] online resources were accessed for information on sites designated for nature conservation and on protected habitats and species known from the 2 km grid squares N74L, N74M, N74R and N74S, in which the site is located. Environmental Protection Agency (EPA) Maps[6] were also accessed for other environmental information, such as designated wildlife sites and surface water features, relevant to preparation of this report.

5.22 Meath County Council's website[7] was accessed for information on relevant planning policy, while the planning portal[8] was accessed for information on other proposed or permitted developments within the Site and immediate surrounding area.

5.23 Birds of Conservation Concern in Ireland (BoCCI) 2020-2026 (Gilbert et al 2021), published by BirdWatch Ireland and the RSPB NI, is a list of priority bird species for conservation action on the island of Ireland. The BoCCI lists birds which breed and/or winter in Ireland and classifies them into three separate lists; Red, Amber and Green; based on the conservation status of the bird and hence their conservation priority. Birds on the Red List are those of highest conservation concern, Amber List are of medium conservation concern and Green List are not considered threatened. The BirdWatch Ireland website[9] was accessed for information on birds of conservation concern.

5.24 All bird species are protected under the Wildlife Acts 1976 – 2018 but for the purposes of this report only records of species within the last 10 years that are Red or Amber-listed on BoCCI or listed on Annex 1 of the Birds Directive are included from records held by the NBDC and NPWS web searches.

5.25 The conservation status of mammals, amphibians, reptiles, fish and protected flora within Ireland and Europe was determined using one or more of the following documents: Wildlife Acts (1976 - 2012), the Red List of Terrestrial Mammals (Marnell *et al*., 2009), Ireland Red Lists No.5: Amphibians, Reptiles and Freshwater Fish (King *et al*. 2011), The Flora (Protection) Order, 2015 (S.I. No. 356 of 2015) and the EU Habitats Directive 92/43/EEC.

5.26 The documents reviewed to assist the preparation of this chapter of the EIAR included the Appropriate Assessment Screening and Natura Impact Statement report for the project (SLR, 2023).

## Field Surveys

5.27 The application site was inspected by an SLR ecologist in September 2016 as part of the previous planning application at the site (P. Ref. TA161227 / ABP PL17.249132). For this current planning application a site survey was originally carried out in February 2020 and again in November 2022 by SLR Ecologist Michael Bailey, with the objective of the site visits being to describe and evaluate the ecological features within the Site.

[2] https://www.google.ie/maps (last accessed May 2023)
[3] https://www.bing.com/maps (last accessed May 2023)
[4] https://www.npws.ie/(last accessed May 2023)
[5] https://maps.biodiversityireland.ie/ (last accessed May 2023)
[6] http://gis.epa.ie/(last accessed May 2023)
[7] https://www.meath.ie/ (last accessed May 2023)
[8] https://www.eplanning.ie/MeathCC/searchtypes (last accessed May 2023)
[9] https://birdwatchireland.ie/(last accessed May 2023)

5.28 A follow-up biodiversity survey was conducted on 9th September 2023 by SLR Ecologist Jake Matthews. The purpose of this survey was to survey during an optimal survey period and note any changes in the habitats on site or species which may be utilising the site since the previous site visit. This is in line with CIEEM guidance for ecological site surveys (CIEEM 2018). Weather conditions were dry and sunny, with little cloud cover and no precipitation. Temperatures ranged between 17 – 21 °C during the survey. Wind speeds were typically low throughout the survey (i.e., 2 Beaufort (Bft).

5.29 Habitats were identified and classified using '*A Guide to Habitats in Ireland*' (Fossitt, 2000) during the visit. Any Annex I habitats and the dominant plant species present in each habitat type were recorded. Species nomenclature follows Parnell & Curtis (2012) for scientific and English names of vascular plants.

5.30 Hedgerows within the Site were assessed based on their historical, ecological and/or landscape significance and condition using the Hedgerow Appraisal System[10]. Hedgerows are ranked from 0-3 (0- unfavourable to 3- highly favourable) in 3 categories representing the structural variables, continuity, and other negative indicators. The higher the recorded score, the more favourable the condition. A score of 0 in any category represents a hedgerow in unfavourable condition.

5.31 Incidental sightings or evidence of birds, mammals or amphibians were also noted during the habitat survey and the habitats evaluated for their suitability to support such species.

5.32 A site visit to St. Gorman's Well was conducted on 26th January 2024 by SLR Project Ecologist Jake Matthews. The weather conditions during the site visit were dry and sunny, with no precipitation and little cloud cover. Temperatures reached a high of 7°C and wind speed was low throughout the survey (i.e., 2 Bft) (refer to limitations). The aim of this survey was to gain a better understanding of the potential ecological value of this offsite location, which has previously been noted as a warm spring

## Limitations

### Desk Study

5.33 Desk study data is unlikely to be exhaustive, especially in respect of species, and is intended mainly to set a context for the study. It is therefore possible that important habitats or protected species not identified during the data search do in fact occur within the vicinity of the site but have not been previously recorded. Interpretation of maps and aerial photography has been carried out using recent imagery, but it has not been possible to verify the accuracy of any statements relating to land use and habitat context outside of the field study area.

### Field Survey

5.34 The optimal period to undertake a habitat survey is April - September. The second survey was completed in early September, which is inside the optimal survey window. As such, the survey timing is not considered to present a significant constraint to the assessment. However, it is possible that some early-flowering species may have been missed e.g. orchid species. Professional judgement has been applied to provide a thorough assessment to include the potential for these species being present.

[10] Foulkes N., Fuller J., Little D., McCourt S., Murphy P., (2013). Hedgerow Appraisal System – Best Practice Guidance on Hedgerow Survey, Data Collation and Appraisal. Woodlands of Ireland, Dublin. https://hedgerows.ie/wp-content/uploads/2019/11/HAS-Publication-Final-March-2013.pdf (Last accessed October 2023).

5.35 Some areas of the Site boundary were not accessible due to dense vegetation or steep gradients. As such, assessments of these areas were made where possible, i.e. from a distance. This impacted hedgerow assessments of hedgerows located to the north-east and to the west of the Site, along the site boundaries. The hedgerow appraisal was limited to areas that were visible or accessible using binoculars and appraising areas of hedgerow that were accessible. However, this is not anticipated to significantly impact the assessment as all external hedgerows are to be retained and maintained.

5.36 This survey focuses on assessing the potential of the Site to support species of note, which are considered to be of principal importance for the conservation of biodiversity, with reference to those given protection under Irish or European wildlife legislation. This provides an assessment of the ecological interest present on the day the site was visited and highlights areas where further survey work may be required or recommended.

5.37 A site visit was made to St. Gorman's Well in late January 2024, to assess the ecology at a time when the spring would be likely to flow. (The ephemeral nature of the spring is described in detail in the Hydrogeology Report 2022 attached to this EIAR as **Appendix 7-A**). The timing of the site visit was outside the optimal timing for most flora, and it is likely that species noted during the survey were not fully representative of the flora that may typically be present in summer, when the spring pond is dry. However, the data gathered during the 2024 survey is supplemented by a previous ecological survey conducted by Ecoserve Ltd at three times in 2003, which helps provide an understanding of the site in the past, 10 years before any dewatering took place at Rathcore Quarry.

# ASSESSMENT APPROACH

5.38 The ecological evaluation and assessment within this chapter has been undertaken with reference to relevant parts of the 2018 Guidelines for Ecological Impact Assessment in the UK and Ireland developed by the Chartered Institute of Ecology and Environmental Management (CIEEM, September 2018). Although this is recognised as current good practice for ecological assessment, the guidance itself recognises that it is not a prescription about exactly how to undertake an ecological impact assessment (EcIA); rather, they "*provide guidance to practitioners for refining their own methodologies*". For the full guidance, refer to https://www.cieem.net/data/files/ECIA%20Guidelines.pdf. The approach to impact assessment also has regard to advice set out in the EPA guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) published in 2022.

## Important Ecological Features

5.39 Ecological features can be important for a variety of reasons and the rationale used to identify them is explained in the text. Importance may relate, for example, to the quality or extent of the site or habitats therein; habitat and / or species rarity; the extent to which such habitats and / or species are threatened throughout their range, or to their rate of decline.

## Determining Importance

5.40 The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case, relying on known/ published accounts of distribution and rarity where available, and professional experience:

- International (European).

- National (Ireland).
- Regional (Leinster).
- County (Meath).
- Townland (Rathcore and Connellstown).
- Local (intermediate area between Site and Townland), and
- Site (the red line boundary of the development).

5.41 The above frame of reference is applied to the ecological features identified during the desk study and surveys to inform this report.

5.42 In assigning a level of value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records. Examples of relevant lists and criteria include species of European conservation importance (as listed on Annexes II, IV and V of the Habitats Directive or Annex 1 of the Birds Directive), species protected under the Wildlife Acts 1976 - 2020 and Birds of Conservation Concern in Ireland 4 (Gilbert *et al.* 2021).

5.43 The approach to impact assessment, as set out in CIEEM guidelines, only requires that ecological features (habitats, species, ecosystems and their functions/processes), that are considered to be important and potentially affected by the proposed development are carried forward to detailed assessment. It is not necessary to carry out detailed assessment of receptors that are sufficiently widespread, unthreatened and resilient to impacts from the proposed development and will remain viable and sustainable. Therefore, for the purposes of this report, only ecological features of Local importance or greater and/or subject to legal protection have been subject to detailed assessment.

## Impact Assessment

5.44 Where appropriate the impact assessment process involves the following steps:

- identifying and characterising potential impacts;
- incorporating measures to avoid and mitigate (reduce) these impacts;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects (if required); and
- identifying opportunities for ecological enhancement.

5.45 When describing impacts, reference has been made to the following characteristics, as appropriate:

- Positive or negative;
- Extent;
- Magnitude;
- Duration;
- Timing;
- Frequency; and
- Reversibility.

5.46 The impact assessment process considers both direct and indirect impacts: direct ecological impacts are changes that are directly attributable to a defined action, e.g. the physical loss of habitat occupied by a species during the construction process. Indirect ecological impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process or feature, e.g. the creation of roads which cause hydrological changes, which, in the absence of mitigation, could lead to the drying out of wet grassland.

5.47 Consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance:

- **Habitats** – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area.
- **Species** – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

## Significant Effects

5.48 The 2018 CIEEM guidance sets out information in paragraphs 5.24 through to 5.28 of the guidance document which describes the concept of ecological significance. Significant effects are qualified with reference to an appropriate geographic scale, and the scale of significance of an effect may or may not be the same as the geographic context in which the feature is considered important.

5.49 A significant effect, for the purposes of EcIA, is defined as an effect that is sufficiently important to require assessment and reporting so that the decision-maker is adequately informed as to the environmental consequences of permitting the project. Effects can be considered significant at a wide range of scales from international to local.

5.50 The nature of the identified effects on each assessed feature is characterised. This is considered, along with available research, professional judgement about the sensitivity of the feature affected, and professional judgement about how the impact is likely to affect the site, habitat, or population's structure and continued function. Where it is concluded that an effect would be likely to reduce the importance of an assessed feature, it is described as significant. The degree of significance of the effect takes into account the geographic context of the feature's importance and the degree to which its interest is judged to be affected.

## Cumulative Effects

5.51 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered in-combination with impacts of other proposed or permitted plans and projects, can result in significant effects.

5.52 Other plans and projects that should be considered when establishing cumulative effects are:

- proposals for which consent has been applied but which are awaiting determination;
- projects which have been granted consent, but which have not yet been started or which have been started but are not yet completed (i.e., under construction);
- proposals which have been refused permission, but which are subject to appeal, and the appeal is undetermined;

- constructed developments whose full environmental effects are not yet felt and therefore cannot be accounted for in the baseline; or
- developments specifically referenced in a National Policy Statement, a National Plan, or a Local Plan.

## Avoidance, Mitigation, Compensation & Enhancement

5.53 Where potentially significant effects have been identified, the mitigation hierarchy has been applied, as recommended in the CIEEM Guidelines. The mitigation hierarchy sets out a sequential approach beginning with the avoidance of impacts where possible, the application of mitigation measures to minimise unavoidable impacts and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied, residual effects are then identified along with any necessary compensation measures, and incorporation of opportunities for enhancement.

5.54 It is important to clearly differentiate between avoidance mitigation, compensation and enhancement and these terms are defined here as follows:

- Avoidance is used where an impact has been avoided, e.g. through changes in scheme design;
- Mitigation is used to refer to measures to reduce or remedy a specific negative impact in situ;
- Compensation describes measures taken to offset residual effects, i.e. where mitigation in situ is not possible; and
- Enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

# BASELINE ECOLOGICAL CONDITIONS

5.55 This section sets out the current baseline conditions for the ecological features considered within the Site and provides a clear description of the changes that would occur as a result of the proposed development using the findings of the desk study and field survey. The current baseline includes the ecological features created by quarrying under the existing consent.

## Sites Designated for Nature Conservation

5.56 Sites which have been designated for nature conservation are discussed in this section. These designations may include; Natura 2000 sites, Natural Heritage Areas, National Parks, Nature Reserves, Wildfowl Sanctuaries and Ramsar Sites.

5.57 The proposed development area is not within or adjacent to any site designated for nature conservation or subject to any nature conservation designations (**Figure 5-1**).

### Natura 2000 Sites

5.58 There are no internationally important Natura 2000 sites within the Site. The nearest Natura 2000 sites are River Boyne and River Blackwater SAC [002299] 5.6km north of the Site, and River Boyne and River Blackwater SPA [004232] c. 6.5km west of the Site at the closest point when measured in a straight line, and Mount Hevey Bog SAC [002342] is c. 11.6km northwest of the Site.

5.59 There is water discharged from the Site via a drainage ditch which discharges into the Clonguiffin stream, which in turn flows into the Connellstown stream, ca. 2.8km down-stream, which flows west for a further 850m before discharging into the Blackwater River and therefore potential impacts on the River Boyne and River Blackwater SAC, and River Boyne and River Blackwater SPA from surface water and groundwater pollution events as a result of the project activities.

5.60 An Appropriate Assessment Screening and Natura Impact Statement (NIS) report was prepared for this Project, and it concluded that with the existing and proposed mitigation to avoid pollution of surface water and groundwater, the proposed development, individually or in combination with other plans or projects, will not result in any likely significant effects on any Natura 2000 sites. Therefore, Natura 2000 sites are excluded from any further consideration in this Chapter.

### Proposed Natural Heritage Areas (pNHAs) / Natural Heritage Areas (NHAs)

5.61 Two Natural Heritage Areas (NHAs) are located within a 10 km zone of influence for the project. Three proposed Natural Heritage Areas (pNHAs) are located within a 10 km zone of influence for the project (**Figure 5-1**). Details of the NHAs and pNHA are provided below[11].

- The Royal Canal pNHA [002103], located approximately 2.6 km south of the Site. This pNHA comprises a man-made waterway linking the River Liffey at Dublin to the River Shannon near Tarmonbarry. The ecological value of the canal lies more in the diversity of species it supports along its linear habitats than in the presence of rare species. It crosses through agricultural land and therefore provides a refuge for species threatened by modern farming methods.
- Rathmoylan Esker pNHA [000557], located approximately 4.8 km north-east of the Site. This pNHA comprises several segments on a series of north-west to south-east trending eskers located 7km south of Trim near the village of Rathmoylan in Co. Meath. Several parts of these eskers have been colonised by semi-natural deciduous and mixed woodland.
- Ballina Bog pNHA [000390], located approximately 4.8 km south-west of the Site. Ballina Bog pNHA is a wetland system on raised ground that is dependent on rainfall. Due to peat cutting the hydrology of the bogs has been disrupted but important bog habitats still remain. As there is no water discharge from the project Site and as this bog is on raised ground and is not fed by rivers or streams, Ballina Bog pNHA will not be affected by the Project.
- Molerick Bog NHA [001582], located approximately 8.5 km west of the Site. This NHA consists of a small basin bog with a dry surface. Cutover is found all around the site, there is broadleaved woodland located to the south-west, wet woodland is located to the north-west, scrub to the east, humid grassland to the south, a flush/fen area to the west and humid grassland on mineral soil to the north-west and its qualifying interest is peatlands.
- Carbury Bog NHA [001388], located approximately 10 km south-west of the Site. This NHA consists of four sections separated by the old Edenderry railway line and the Carbury-Broadford road. Overall, the southern section is quite wet with good hummock/hollow development. There is some marginal scrub woodland along the margins of the small western section. A narrow strip of deciduous woodland cuts through the main section in line with the old railway.

5.62 The closest NHA / pNHA is Royal Canal pNHA [002103] located c.2.6km south of the Site. The Royal Canal pNHA consists of the aquatic and riparian habitats associated with the Royal Canal. There

[11] EPA (n.d.) https://epawebapp.epa.ie/licences/lic_eDMS/090151b2806de7ae.pdf (Last accessed October 2023).

are no surface water connections between the Site and the canal. Other NHAs and pNHAs are considered sufficiently distant from the Site. Therefore, pNHAs/NHAs are scoped out and excluded from any further consideration in this report.

## Other Notable Non-designated Sites

### St. Gorman's Well

5.63 St Gorman's Well (2901) comprises an ephemeral or seasonal pool that when water levels are sufficiently high, can overflow as a spring. It is located approximately 1.6 km west of the Rathcore Quarry site boundary. This site is not formally listed as an NHA or pNHA. but has been put forward as a candidate NHA (cNHA) based on a desk interpretation of the Ecoserve report in 2003[12] [13]. The site was also included in an audit of geological sites in County Meath in 2007[14] Again, on the basis of a desk interpretation of the Ecoserve report, it was proposed as a County Geological Site (CGS). The site is listed as a County Geological Site in the Meath County Development Plan 2021-2027[15]

5.64 A wetland survey of County Meath commenced in 2009 and culminated in the publication of The County Meath Wetlands and Coastal Habitats Survey August 2010 (Foss and Crushell). This study introduced a Conservation ranking for sites surveyed ranging from 'A' – Internationally important [SACs and SPAs], to 'C+' – County conservation value (lower). The purpose of the survey was to determine and map the type, extent and condition of wetlands and coastal habitats in the county.

5.65 St Gorman's Well was assigned a Conservation value C+ which is the lowest conservation value rating.

5.66 Map of Irish Wetlands refers to the Site as St Gorman's Well cNHA.

5.67 A cNHA is a candidate NHA and is described as a pre-pNHA designation; meaning that the site could be considered for a site survey and assessment, and, if biological evidence is sufficient, then proposed as an NHA. A cNHA is not a statutory designation.

5.68 St Gorman's Well has a widely known reputation as a warm spring. A comprehensive monitoring programme carried out by Minerex for over a year in the early 1980s showed that, when the spring was flowing, the temperature of the water was above 20°C, but dipped below this temperature, to as low as 11°C, after heavy rain in autumn (see Figure 5.11 in the Hydrogeology Investigation Report 2022 in **Appendix 7-A**). Since the 1980s there have been spot measurements of temperature on occasional site visits when there was flow from the spring pond. The last reported warm temperature was a measurement of 21°C by EDA in April 2001. Ecoserve reported a temperature of 12.0°C when the spring was flowing during the spring of 2003. An anomalous temperature of 25°C measured in the shallow water at the edge of the stagnant pool during the summer of 2003 was also reported by Ecoserve. More recent measurements by different hydrogeologists were 14.4°C in 2009, 10.5°C in 2011 and 10.6°C in 2021.

5.69 The reputation that the spring was unusually warm appears to have encouraged an assumption that a warm water pool must have the potential to support a unique ecological habitat with a high plant species richness. However, the spring and a flow of warm water is not perennial. A mention by Ecoserve of a light tufa deposit on submerged leaves in the pool also gave rise to an assumption,

[12] Foss, P.J. 2007 Title: National Parks & Wildlife Service Study of the Extent and Conservation Status of Springs, Fens and Flushes in Ireland 2007. Internal report for the National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Ireland.
[13] Emblow, C., 2003, Development of a baseline ecological data set for selected warm springs in Ireland, Ecoserve Consultancy Services, Dublin.
[14] The Geological Heritage of Meath. An audit of County Geological Sites in Meath, Aaron Clarke, Matthew Parkes and Sarah Gatley. November 2007 revised 2009
[15] Meath County Development Plan 2021-2027 (Appendix 11, page 4 and Chapter 8, Table 8.7)

during subsequent desk study audits, that the site may constitute an Annex I habitat (*Petrifying springs with tufa formation* [7220]).

**2003 Survey Results**

5.70 St Gorman's Well site was surveyed ecologically on three site visits in 2003 by Ecoserve Ltd.[13] and was found to comprise a shallow natural pond of approximately 40m$^2$ at times of high discharge in the spring. The substratum was described as comprising primarily large limestone fragments and gravel, with vegetation including fringing reed and weed to terrestrial grassland. The surveys during the spring and summer found water in the pond. It was dry during the autumn sampling.

5.71 Plant species noted during these surveys included a species of *Charophyte*, water cress *Rorippa microphylla*, water plantain *Alisma plantago*, water dock *Rumex hydrolapathum*, ivy-leaved duckweed *Lemna triscula*, and algaes *Cladophora* sp., *Closterium* sp., bryophytes *Brachythecium plumosum*, and *Rhynchostegiella tenella*, and vascular plants common water-starwort *Callitriche stagnalis* and water smartweed *Polygonum amphibium*.

5.72 Invertebrates were noted in the well including water louse *Asellus aquaticus*, pond snail *Lymnaea stagnalis*, damselfly *Pyrrhosoma nymphula*, caddis larva *Limnephilus flavicornis*, molluscs such as *Lymnaea peregra*, Anisus leucostoma, Planorbis sp., bivalves *Sphaeridae* sp., and other invertebrates such as midge larvae *Chironomidae*, water beetles *Haliplus* sp., waterbugs *Micronecta poweri*, and water mites *Hydracarina*.

5.73 Smooth newts *Triturus vulgaris* was also found to use the well. It is possible that this species may have found breeding value within the well and suitable terrestrial habitats in the surrounding areas.

**2024 Survey Results**

5.74 The 2024 survey found very little evidence that the well is of high ecological value. The well pond was dry at the time of the survey, though it had contained shallow water for a week in early January. A small hole was dug by hand below the grass sward at the base of the pond. The groundwater level in the hole was approximately 10cm below the surface, well within the root zone of plants growing in the base of the well pond.

5.75 A new artificial pond created with a butyl rubber pond-liner was located immediately adjacent to the well. A deep drainage ditch containing flowing water was located at approximate ITM coordinates 673971 744235; and two additional temporary, shallow ponds were observed within the woodland to the north of the well (at approximate ITM coordinates 674003 744281). They appeared to contain surface runoff, via shallow drains in the woodland, from the large bare-earth field sloping down from Ballinakill hill to the east of the wood.

5.76 In contrast to the 2003 surveys, the 2024 survey found the substrate of the well contained no gravel or tufa deposits on the surface. However, small gravel pebbles within a dark brown organic matrix were noted under the vegetation at the base of the pond. There were no tufa deposits on or below the surface. No aquatic plant species were noted within the well, and the flora evident at the time of the survey represented those typical of neutral grasslands of low ecological value. There was little difference noted between the species composition on the banks and within the well pond.

5.77 Species identified in 2024 within the well included vetch Vicia sp., creeping buttercup Ranunculus repens, cock's-foot Dactylus glomerata, Yorkshire fog Holcus lanatus, creeping bent grass Agrostis stolonifera, ribwort plantain *Plantago lanceolata*, cleavers *Galium aparine*. Bryophytes were limited to *Brachythecium plumosum* and *Mnium hornum* and these were restricted to areas of bare stones placed around the edges of the well. Ruderals (plants growing in waste ground) and emerging scrub was noted along the banks bordering the woodland, with species including bramble *Rubus fruticosus* agg., common nettle *Urtica dioica*, broad-leaved dock *Rumex obtusifolius*. These

scrub and ruderal edges had undergone recent strimming, with areas clearly cut and loose cuttings still present.

5.78 Aquatic flora species were noted in the pond with the artificial liner adjacent to the well pond, and included ivy-leaved duckweed, water parsnip *Berula erecta*, yellow marsh marigold *Caltha palustris*.

5.79 The banks and surrounding grasslands comprised mostly grasses with occasional forbs (broad leaved flowering plants without woody stems that are not grasses sedges or rushes) such as ragwort *Jacobaea vulgaris*, creeping buttercup, dandelion *Taraxacum officinale* agg., white clover *Trifolium repens*, English ivy *Hedera helix*, and common daisy *Bellis perennis*.

5.80 There was no evidence of aquatic invertebrate presence due to the well pond being dry. The monitoring of groundwater levels in the adjacent boreholes since 2013 has shown that the well pond rarely holds significant levels of water for long periods and is dry during the late spring-summer months (see Figures 5.19 and 5.38 in the Hydrogeology Investigation Report 2022). As such, the well pond depression is not anticipated to provide suitable breeding habitat for smooth newts.

5.81 There was no tufa formation observed in the well pond depression, which would be expected in an Annex I habitat Petrifying springs with tufa formation. Furthermore, National Parks & Wildlife Service Study of the Extent and Conservation Status of Springs, Fens and Flushes in Ireland 2007[16] and guidelines for the assessment of Annex I Priority Petrifying Springs in Ireland[17] were consulted to determine whether the well likely qualifies as Annex I habitat. These sources were used to provide a list of positive and negative indicator species with regards to identifying this Annex I habitat. No positive indicator species were identified during either the 2003 or 2024 surveys. The following species were present as negative indicator species:

- Dactylis glomerata;
- Urtica dioica; and
- Rubus fruticosus agg.

5.82 Therefore, St Gorman's Well has been assessed not to be Annex I habitat Petrifying springs with tufa formation.

5.83 In addition, it is assessed to offer negligible ecological value, with greater ecological value being attributed to the surrounding woodland, temporary woodland ponds and the wet, deep drainage ditch that are located adjacent or in close proximity to the well pond depression.

5.84 The presence of smooth newts in the area cannot be discounted. However, the well is considered unlikely to provide breeding value to the newts. With regards to the terrestrial habitats of the newt, the upper dispersal limit for newts is considered to be 500 m. The development site is located approximately 1.6 km from the well and typically all water bodies beyond this distance are generally discounted from likely significant effects to newts during their terrestrial phase[18,19]

[16] Foss, P.J. 2007 Title: National Parks & Wildlife Service Study of the Extent and Conservation Status of Springs, Fens and Flushes in Ireland 2007. Internal report for the National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Ireland.

[17] Denyer, J., Eakin, M., & Gill, M. (2023). Guidelines for the Assessment of Annex I Priority Petrifying Springs in Ireland. Irish Wildlife Manuals, no. 142. NPWS, Department for Housing, Local Government and Heritage, Ireland.

[18] NRA (n.d.) Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes. https://www.tii.ie/technical-services/environment/planning/Ecological-Surveying-Techniques-for-Protected-Flora-and-Fauna-during-the-Planning-of-National-Road-Schemes.pdf [Accessed January 2024].

[19] Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001), Great Crested Newt Conservation Handbook, Froglife, Halesworth.https://www.froglife.org/wp-content/uploads/2013/06/GCN-Conservation-Handbook_compressed.pdf [Accessed January 2024].

5.85 For the reasons above, the St. Gorman's Well site has been **discounted from further assessment**.

### Rare and Protected Flora and Fauna

5.86 The NBDC database was searched for records within the 2 km grid squares N74L, N74M, N74R and N74S within which the Site is located.

5.87 The absence of any record of a species from the NBDC database does not necessarily imply that a species does not occur within the search area rather it has not formally been recorded as present. Similarly, the presence of a record for a protected species within the 2 km grid squares does not mean that the species is present within the Site.

## Field Survey

5.88 **Table 5-1** provides a summary of the habitats, and their total area, comprising the Site. The habitats and species recorded within the application site are described, classified and evaluated in this section of the report, and described further in the sections below.

**Table 5-1: Habitats and habitat areas comprising the Site**

| Habitat category | Habitat | Habitat code | Area / Length |
|---|---|---|---|
| **Scrub / transitional woodland** | Scrub | WS1 | 2.04 ha |
| | Immature woodland | WS2 | 0.38 ha |
| **Semi-natural grassland** | Dry meadows and grassy verges | GS2 | 6.30 ha |
| **Lakes and ponds** | Other artificial lakes and ponds | FL8 | 0.03 ha |
| **Disturbed ground** | Recolonising bare ground / active quarries and mines | ED3 / ED4 | 18.54 ha |
| **Built land** | Buildings and artificial surfaces | BL3 | |
| **Linear woodland / scrub** | Hedgerows | WL1 | 1,305 m |
| | Treelines | WL2 | 235 m |

### Habitats

5.89 Habitats present within the Site, as recorded during the walkover survey, are described in this section. Habitat classification follows that of 'A Guide to Habitats in Ireland' (Fossitt, 2000). A habitat map for the site is provided as **Figure 5-2** at the end of this chapter.

**Scrub (WS1)**

5.90 Scrub habitats comprised areas along the Site boundary, particularly to the north, south, and west (see **Photographs 1** & **2**). In total this habitat comprised approximately 2.04 ha of the Site. Patches of less dense scrub were located more centrally within the Site but this habitat was absent within the active quarry area.

5.91 Dense scrub was comprised predominantly of gorse *Ulex europaeus* and goat willow *Salix caprea* with other young trees including ash *Fraxinus excelsior*, hawthorn *Crataegus monogyna*, and sycamore *Acer pseudoplatanus*. Other ground flora included bramble *Rubus fruticosus* agg., snowberry *Symphoricarpos albus*, laurel *Prunus laurocerasus*, dogrose *Rosa canina*, coltsfoot *Tussilago farfara*, common nettle, willowherb *Epilobium* sp., hogweed *Heracleum sphondylium*, dandelion *Taraxacum officinalis* agg., ragwort *Jacobaea vulgaris*, herb robert *Geranium robertianum*, red clover *Trifolium pratense*, creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, cocks-foot *Dactylis glomerata*, and vetch *Vicia sativa*.

5.92 Dense scrub has been assessed as important on a **local (higher value) level**.

**Immature Woodland (WS2)**

5.93 Immature woodland was located to the north of the Site (see **Photograph 2**). This habitat comprised 0.38 ha of the Site and was located outside the active quarry area. This habitat comprised mostly young trees and had scrub transitional bordering the adjacent grassland. Species included silver birch *Betula pendula*, sycamore, hazel *Corylus avellana*, willow *Salix* sp., and alder *Alnus glutinosa*.

5.94 Immature woodland is assessed as important on a **national level**.

**Dry meadows and grassy verges (GS2)**

5.95 Grasslands were located outside the active quarry area, making up larger open areas of unmanaged land along the Site boundaries, particularly to the north and the south-west. These grasslands were largely unmanaged and it is anticipated that they have recently been grazed by mammals such as rabbits and deer.

5.96 Grasslands to the south-west comprised a longer sward of approximately 1.5 m and was made up of tussocky grass. Forbs included vetch, fescue, dock, hairy willowherb, ribwort plantain, cinquefoil *Potentilla simplex*, yarrow *Achillea millefolium*, cocks-foot, birds-foot trefoil *Lotus corniculatus*, thistle, dandelion, red clover, silverweed *Potentilla anserina*, rush *Juncus effusus*, coltsfoot, meadow buttercup *Ranunculus acris*, foxtail *Alopecurus* sp.

5.97 The grassland elsewhere such as to the north of the Site comprised a shorter sward and was made up of larger quantities of fescue grasses with occasional herbs including hawkbit *Leontodon hispidus*, dandelion and potential remnants of orchid species were identified within grasslands to the north of the Site (see **Photographs 3**, **4** & **5**). These could not be identified to species level. Grasslands also comprised much of the surrounding offsite areas (see **Photograph 6**).

5.98 It was not possible to identify the orchids to species level. As such, it cannot be fully assessed whether the grassland habitat qualifies as Annex I habitat 'semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometea*) (*important orchid sites) (6210)'.

5.99 Under the precautionary principle, it should be assumed that it comprises Annex I habitat, which could be important on a **national level**.

**Other artificial lakes and ponds (FW4)**

5.100 One settlement pond, comprising 0.03 ha of the Site, was located to the south-west of the Site (see **Photograph 7**). This was surrounded by grassland, ruderal species, and willow and gorse scrub. The pond was heavily vegetated with aquatic vegetation which included bullrush, pond weed and algae.

5.101 An artificial constructed lateral flow reedbed (used to treat discharged water) was noted adjacent north-west of the settlement pond and it could be considered as reed and large sedge swamps (FS1) if it was more extensive. However, this habitat makes up a relatively small area and comprises only

a few species that typically make up reed and large sedge swamps. Water was not evident from the surface but is present and controlled and maintained below the surface of the reedbed (see **Photograph 8**). Species within the reedbed comprised buddleia *Buddleja davidii*, reeds *Phragmites australis*, willowherb, gorse, grasses, and ash saplings.

5.102 Whilst the primary function of the artificial constructed reedbed is not ecological, it may still provide some value to local fauna. Therefore, it is assessed to be important at a **local (higher value) level**.

**Recolonising bare ground (ED3) / Active quarries and mines (ED4)**

5.103 The central areas of the Site and the majority of the total area comprised the active quarry (see **Photographs 9** & **10**). This area comprised spoil piles of aggregate and other processed rock as well as bare ground and was mapped as a mosaic of recolonising bare ground (ED3) and Active quarries and mines (ED4). Ephemeral pools were present within the bare ground habitat, with minor vegetation including rush, coltsfoot and mosses (see **Photographs 11** & **12**).

5.104 Generally vegetation was absent or sparse, in less active areas with species including buddleia, coltsfoot, hawkbit, yarrow, willowherb, and horsetail *Equisetum arvense*.

5.105 Overall, the bare ground and quarry habitats are assessed of **negligible value** and has not been assessed further.

**Buildings and artificial surfaces (BL3)**

5.106 Buildings and artificial surfaces within the Site comprised active quarry buildings and surrounding hardstanding concrete surfaces. The buildings comprised structures associated with the active quarry including a security reception / office space and quarry equipment (see **Photographs 13** - **16**).

5.107 Overall, the buildings and artificial surfaces and quarry habitats are assessed of **negligible value**.

**Hedgerows (WL1)**

5.108 Hedgerows comprised significant areas of the Site boundaries. The hedgerow assessment has been included in **Appendix 5-E**. In summary, hedgerows 1, 3, and 4 were assessed as moderately significant and hedgerow 2 was assessed as low significance.

- Hedgerow 1, located on the north-western boundary at approximate ITM coordinates 675850 744513 (see **Photograph 17**). This hedgerow comprised a mixture of semi-mature trees and shrubs comprising mostly sycamore, ash, and hazel. Ground flora comprised scrub and ruderal species including bramble, nettle. Overall, Hedgerow 1 was assessed as important on a **local (higher value) level**.
- Hedgerow 2, located adjacent to hedgerow 1, within the Site, at approximate ITM coordinates 675833 744475. This hedgerow consisted exclusively of immature conifer trees situated on grassland (see **Photograph 18**). Overall, Hedgerow 2 was assessed as important on a **local (lower value) level**.
- Hedgerow 3, located on the northern / north-eastern boundary, at approximate ITM coordinates 676306 744438 (see **Photograph 19**). This hedgerow had significant gaps and was made up of mostly immature goat willow. Overall, Hedgerow 3 was assessed as important on a **local (higher value) level**.
- Hedgerow 4, located along the south-eastern boundary, at approximate ITM coordinates 676072 743975 (see **Photograph 20**). This hedgerow comprised dense scrub and a mixture of

semi-mature and immature trees which included goat willow, elder, hawthorn, and gorse. Overall, Hedgerow 4 was assessed as important on a **local (higher value) level**.

5.109 Overall, hedgerows 1, 3, and 4 are evaluated as having **local (higher value) level** importance. Hedgerow 2 is of **local (lower value) level** importance due to comprising non-native species.

**Treelines (WL2)**

5.110 One treeline made up of mature beech *Fagus sylvatica* trees and standing deadwood (assumed beech) was located to the west of the Site on the raised cliff bordering the active quarry area at approximate ITM coordinates 675793 744217. Ground flora comprised mostly grasses.

5.111 Additional treelines located along the east and south-western boundaries comprised of a mixture of sycamore, ash, hazel, willow, elder *Sambucus nigra*, hawthorn and gorse resembled linear scrub.

5.112 Overall, treelines are evaluated as important at a **local (higher value) level**.

## Species

5.113 Details of protected, rare and notable species records from the 2 km grid squares N74L, N74M, N74R and N74S within which the Site is located. The records returned are of varying ages so for the purposes of preparing this report only the relevant records dated within the last 10 years.

5.114 **Table 5-2** provides a summary of records with the following sections setting out more specific consideration of protected, rare and notable species at the Site itself.

**Table 5-2: Rare and/or Protected Species Recorded Within 2 km grid squares N74L, N74M, N74R and N74S (updated in October 2023)**

| Species | Date of Last Record | No. of Records | Conservation Status | Dataset |
|---|---|---|---|---|
| **Birds** | | | | |
| Common swift *Apus apus* | 2021 | 2 | Protected Species: Wildlife Act<br>Birds of Conservation Concern: **Red List** | Swifts of Ireland |
| Yellowhammer *Emberiza citrinella* | 2019 | 4 | Protected Species: Wildlife Act<br>Birds of Conservation Concern: **Red List** | Birds of Ireland |
| Barn swallow *Hirundo rustica* | 2011 | 1 | Protected Species: Wildlife Act<br>Birds of Conservation Concern: **Amber List** | Bird Atlas 2007 - 2011 |
| Common linnet *Linaria cannabina* | 2011 | 1 | Protected Species: Wildlife Act<br>Birds of Conservation Concern: **Amber List** | Bird Atlas 2007 - 2011 |
| Common starling *Sturnus vulgaris* | 2011 | 2 | Protected Species: Wildlife Act<br>Birds of Conservation Concern: **Amber List** | Bird Atlas 2007 - 2011 |
| Tree sparrow *Passer montanus* | 2011 | 1 | Protected Species: Wildlife Act<br>Birds of Conservation Concern: **Amber List** | Bird Atlas 2007 - 2011 |

| | | | | |
|---|---|---|---|---|
| House martin *Delichon urbicum* | 2011 | 1 | Protected Species: Wildlife Act Birds of Conservation Concern: **Amber List** | Bird Atlas 2007 - 2011 |
| House sparrow *Passer domesticus* | 2011 | 3 | Protected Species: Wildlife Act Birds of Conservation Concern: **Amber List** | Bird Atlas 2007 - 2011 |
| Skylark *Alauda arvensis* | 1991 | 1 | Protected Species: Wildlife Act Birds of Conservation Concern: **Amber List** | The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991 |
| Kestrel *Falco tinnunculus* | 1991 | 1 | Protected Species: Wildlife Act Birds of Conservation Concern: **Red List** | The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991 |
| Eurasian curlew *Numenius arquata* | 1991 | 1 | Protected Species: Wildlife Act Birds of Conservation Concern: **Red List** | The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991 |
| Spotted flycatcher *Muscicapa striata* | 1991 | 1 | Protected Species: Wildlife Act Birds of Conservation Concern: **Amber List** | The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991 |
| **Mammals** | | | | |
| Eurasian Badger *Meles meles* | 2013 | 5 | Protected Species: Wildlife Act | Atlas of Mammals in Ireland 2010-2015 |
| Grey squirrel *Sciurus carolinensis* | 2007 | 1 | Invasive species | The Irish Squirrel Survey 2007 |
| West European Hedgehog *Erinaceus europaeus* | 2014 | 1 | Protected Species: Wildlife Act | Atlas of Mammals in Ireland 2010-2015 |
| Pine Marten *Martes martes* | 2021 | 1 | Protected Species: Wildlife Act EU Habitats Directive: Annex V | Mammals of Ireland 2016-2025 |

## Protected Flora

5.115 No protected flora species were noted on-site during the field survey during the 2022 survey.

5.116 Potential post-flowering orchids were identified within the grasslands located to the north of the Site. It was not possible to identify these to species level and the full scope of flora within the Site remains unknown. The 2023 survey was conducted in September, which is considered inside the optimal window to survey for most flora species.

5.117 As such, the flora within the Site are evaluated as important at a **local (higher value) level**.

## Amphibians

5.118 Smooth newt are protected under the Wildlife Acts 1976 as amended; species protected under the Wildlife Act are those listed on Schedule 5. Since the publication of the Wildlife Act 1976, the list

of Schedule 5 species has been extended through the publication of Wildlife Act 1976 (Protection of Wild Animals) Regulations in 1980 and 1990. Common frog *Rana temporaria* and smooth newt were added to the Wildlife Act 1976 as amended by regulations made in SI 282/1980.

5.119 One vegetated settlement pond was identified to the west of the Site. The water appeared deep and held significant quantities of aquatic vegetation. It is presumed that this pond holds water permanently as its primary function is for the treatment of the licence water discharge off-site. Whilst it's primary function is the treatment of discharge water, it may hold value for amphibians, which may use this habitat for breeding purposes.

5.120 Other ephemeral pools were identified within the quarry. These held shallow and clear water with limited aquatic vegetation, with rushes *Juncus effusus* growing within and around the pools. Due to their shallow depth and limited aquatic vegetation, it is anticipated that these pools regularly dry out and are, therefore, less likely to be used by amphibians.

5.121 No smooth newts or common frogs were identified during the survey. Significant areas of terrestrial habitat also exists within the surrounding areas offsite and limited areas of suitable terrestrial habitat is located along the Site boundaries. Amphibians cannot be discounted from being present from the Site and may breed in the pond to the west of the Site. It is assessed that amphibians are absent from within the active quarry areas.

**Smooth Newt**

5.122 Smooth newt cannot be discounted from the Site and may use the pond for breeding. As such, this species is evaluated as important at the **county level** and is assessed further in this report.

**Common Frog**

5.123 Common frogs cannot be discounted from the Site and may use the pond for breeding. As such, this species is evaluated as important at the **local (higher value) level** and is assessed further in this report.

## Birds

**SPA Birds**

5.124 The River Boyne and River Blackwater SPA comprises a designated site for birds. This site is designated for kingfisher *Alcedo atthis*. The quarry and surrounding habitats are not suitable for kingfisher. Kingfisher are considered absent from the Site can be discounted from the further assessment.

**Passerine Birds**

5.125 The data search returned records of notable passerine species (refer to **Table 5-2**) and no BoCCI red or amber listed passerine birds were identified during the survey, but they cannot be fully discounted.

5.126 The habitats within the Site will support a range of nesting passerine birds and the rural location of the Site may provide suitability for rarer and notable farmland birds, such as yellowhammer *Emberiza citronella* and linnet *Linaria cannabina*. The habitats of highest value for passerine birds consist of the vegetated habitats, which are limited mostly to the Site boundaries, including scrub, immature woodland, hedgerows, treelines, and grasslands.

5.127 The bird assemblage of the Site is evaluated as important at the **local (higher) level** and have been assessed further in this report.

**Ground Nesting Birds**

5.128 The data search returned records of notable ground nesting birds such as skylark *Alauda arvensis* and curlew *Numenius arquata* (refer to **Table 5-2**). No ground nesting birds were identified during the field survey and the grassland and agricultural habitats located offsite and surrounding the Site are anticipated to provide the highest value nesting habitat for these species.

5.129 Most of the Site comprised an active quarry of spoil and bare ground. Whilst bare ground habitat can provide suitable nesting habitat for a range of ground-nesting birds such as lapwing *Vanellus vanellus*, curlew, and oyster catcher *Haematopus ostralegus*. It is evaluated that ground nesting birds are unlikely to use these habitats due to the nature of the Site as an active quarry, with high levels of heavy traffic.

5.130 Ground nesting birds may find limited value within the vegetated Site boundaries, with open areas of grassland located to the north of the site providing potential foraging and nesting habitat. It is anticipated that ground nesting birds will find higher value nesting habitat within the significant areas of open agricultural grassland habitat surrounding the Site and are much more likely to nest in these areas, with less disturbance anticipated relative to the Site. Example species that may benefit from these habitats include lapwing, pheasant *Phasianus colchicus*, and skylark.

5.131 Overall, the site is considered to be of negligible value for ground nesting birds. However, given the higher value habitats for these species located immediately surrounding the Site ground nesting birds have been evaluated as important at a **local (higher value) level** and have been assessed further in this report.

**Birds of Prey and other Cliff-nesting Birds**

5.132 The data search returned one historical record of kestrel *Falco tinnunculus* and common buzzard *Buteo buteo*. Furthermore, one kestrel was identified on the site during the field survey, foraging over grassland to the north of the Site. No peregrine were identified within the quarry site during the field survey. However, suitable habitat for cliff-nesting species such as kestrel, peregrine and raven were present within the Site through the cliffs surrounding the quarry interior.

5.133 Peregrines are listed on Annex I of the Birds Directive, which aims to protect birds and their habitats. There is an obligation to take measures to ensure peregrine's conservation and protection. Suitable habitat exists for this species within the Site. As such, this species is evaluated as important at **national level** and has been assessed further in this report.

5.134 Kestrel as a BoCCI red-listed species are evaluated as important at a **County level** as suitable habitat exists for this species within the Site and foraging kestrel were confirmed within grasslands located to the north of the Site.

5.135 Other birds of prey such as buzzards may find limited foraging potential within the Site's grasslands. Existing trees may also provide nesting value to these species. However, no nests were confirmed during the surveys. These species are evaluated as important at a **local (higher value) level**.

## Bats

5.136 There are no records in the NBDC within 10 years of any bat species from the 2 km grid squares N74L, N74M, N74R and N74S in which the Site is located.

**Roosting Bats**

5.137 Roosting suitability criteria developed by the BCT is provided in **Appendix 5-C**. The immature woodland located to the north of the Site comprised mostly young, immature trees which generally lack of potential roosting features (PRFs) suitable for roosting bats. However, given the number of

trees within this habitat, a full PRA of every tree was not conducted and potential for roosting bats cannot be fully discounted within this habitat.

5.138 Surrounding habitats around the Site comprised mostly agriculture grassland with treeline and hedgerow boundaries. Mature trees within boundary treelines may provide suitable roosting habitat for bats.

5.139 A PRA of trees with suitable roosting habitats within the Site is included in **Appendix 5-D**. In summary the PRA concluded the following:

- All site buildings comprised active quarry buildings, exposed to significant levels of noise and vibrations. These buildings were assessed as having negligible potential for roosting bats and have been discounted from the assessment; and
- Three trees were assessed as having low potential for roosting bats.

5.140 Individual or very low numbers of roosting crevice-dwelling bats may find roosting opportunities within limited PRFs of the three low potential trees identified. Bat assemblage has been assessed as important on a **county level**.

**Commuting and Foraging Bats**

5.141 The active quarry areas are assessed to be of negligible value for commuting and foraging bats due to the lack of vegetation limiting the likelihood of significant invertebrates. This area also lacks vegetated corridors for commuting bats.

5.142 The vegetated habitats including immature woodland, scrub, treelines, hedgerows and grassland, located mostly along the Site boundaries provide suitable foraging habitat for bats. These linear habitats also provide valuable ecological corridors, providing commuting habitat.

5.143 The aquatic habitats within the Site are likely to support significant numbers of invertebrates, which will provide foraging value for bats and are considered to provide the habitats of highest value for foraging bats.

5.144 Overall, the Site is considered to be of low potential for commuting and foraging bats.

5.145 The bat assemblage of the Site is evaluated as important at the **county level** and is assessed further in this report.

## Badgers

5.146 Five records of badgers *Meles meles* were returned in the data search.

5.147 No badger setts were identified within the Site or the immediate surrounding areas during the field surveys. The active quarry areas of the Site are considered of negligible value for badgers, lacking in significant foraging or sett-creating habitats. The vegetated habitats comprising the Site boundaries, as well as offsite areas, do provide some suitable foraging and sett creating habitats for badgers.

5.148 Therefore, the potential presence of badgers, including the presence of setts, cannot be fully discounted and it is anticipated that badgers likely use the Site boundaries for commuting and foraging.

5.149 Overall, the presence of badgers is unconfirmed, however, should they be present they have been evaluated as important at a **county level**.

### Hedgehog

5.150 The data search returned one record of hedgehog *Erinaceus europaeus* locally. The field survey found no evidence of hedgehog on the Site. However, the woodland, scrub, grassland, treelines and hedgerows will provide suitable habitat for this species, and their presence cannot be discounted.

5.151 Hedgehog are evaluated as important at **a local (higher value) level**.

### Pine Marten

5.152 The data search returned one record of pine marten *Martes martes* locally. Whilst no evidence of pine marten was identified during the field survey, the woodland and treelines may provide suitable habitat for this species, and their presence cannot be discounted.

5.153 Pine marten are evaluated as important at **a local (higher value) level**.

### Other Mammals

5.154 The data search returned previous records of red fox *Vulpes vulpes* and European rabbit *Oryctolagus cuniculus* within the search area and it is anticipated that the grassland, woodland, and scrub habitats likely support these species. No records of Irish hare *Lepus timidus hibernicus* were returned in the data search.

5.155 Fox and rabbit are not afforded any legal protection. However, they still form part of the local biodiversity. Therefore, they have been evaluated as important at a **local (lower value) level**.

### Invertebrates

5.156 The majority of the Site comprises an unvegetated active quarry. These areas are considered of negligible value for invertebrates. However, habitats including woodland, scrub, treelines, hedgerow, grassland, and ponds may support notable invertebrates within the Site. Flowering plants within these habitats may provide food plants for a range of invertebrates and notable species cannot be discounted. Ponds will provide suitable breeding habitat for aquatic invertebrates.

5.157 During the field survey some invertebrates were identified, including butterflies, red admiral *Vanessa atalanta*, small tortoiseshell *Aglais urticae*, and silver Y moth *Autographa gamma* within grasslands to the north and mating dragonflies were noted over pond habitats.

5.158 Invertebrates are, therefore, evaluated as important as a **local (higher value) level**.

### Invasive Species

5.159 The NBDC database was searched for records of invasive species within the 2 km grid squares N74L, N74M, N74R and N74S within which the Site is located. No records within the last 10 years were returned for species listed under the Third Schedule of the EC Birds and Natural Habitats Regulations 2011.

5.160 One stand of wall/rock cotoneaster *Cotoneaster horizontalis*, which is considered an invasive species of medium impact in Ireland[20], was noted at the Site in the 2022 survey located at

[20] Invasives.ie (2021). Available from: https://invasives.ie/app/uploads/2022/01/Invasives_taggedMediumImpact_2013RA-2.pdf. Last accessed October 2023.

approximate ITM coordinated 675742 744310. This plant, nor any others, were not identified during the 2023 survey.

5.161 The risk of spreading the invasive species wall cotoneaster is evaluated as important on a **vice-county level**.

5.162 The data search returned one record of grey squirrel *Sciurus carolinensis*. The field survey did not identify the presence of grey squirrel on the Site. However the vegetated habitats comprising the Site boundaries are suitable for this species. Grey squirrel is considered an invasive species of high impact in Ireland[21].

5.163 The importance of this species is not applicable due to its status as an invasive species.

## Summary of Important Ecological Features

5.164 **Table 5-3** summarises all important ecological features for which detailed assessment is required. The geographical scale of importance for the ecological features within the Site are summarised along with their legal status and a rationale, where appropriate, for carrying forward any features for detailed assessment.

**Table 5-3: Summary of important ecological features**

| Ecological Receptor | Category of importance | Rationale |
|---|---|---|
| **Habitats** | | |
| **Scrub (WS1)** | Local (higher value) level | Does not comprise Annex I habitat.<br>Provides valuable semi-natural habitat for local fauna. |
| **Immature woodland (WS2)** | National level | Does not comprise Annex I habitat.<br>Provides valuable semi-natural habitat for local fauna.<br>Native woodland is scarce on a national level.<br>Woodland is identified in the Co. Meath Biodiversity Action Plan 2015 – 2020. |
| **Dry meadows and grassy verges (GS2)** | National level (under the precautionary principle) | It is presently unknown whether this habitat comprises Annex I habitat 'semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometea) (*important orchid sites) (6210)'<br>Grasslands (GS2) are identified in the Co. Meath Biodiversity Action Plan 2015 – 2020. |
| **Other artificial lakes and ponds (FW4)** | Local (higher value) level | Does not comprise Annex I habitat.<br>Provides valuable semi-natural habitat for local fauna, including notable amphibians and invertebrates and foraging bats. |
| **Hedgerows (WL1) – Hedgerows 1, 3, & 4** | Local (higher value) level | Does not comprise Annex I habitat.<br>Hedgerows are identified in the Co. Meath Biodiversity Action Plan 2015 – 2020<br>Provides valuable semi-natural habitat for local fauna. |

[21] NBDC (n.d.) Eastern grey squirrel. Available from: https://species.biodiversityireland.ie/profile.php?taxonId=119515. Last accessed October 2023.

| | | |
|---|---|---|
| **Treelines (WL2)** | Local (higher value) level | Does not comprise Annex I habitat.<br>Provides valuable semi-natural habitat for local fauna. |
| **Fauna** | | |
| **General flora** | Local (higher value) level | A range of native and flowering plants are likely to provide a valuable food source for a range of native fauna. |
| **Orchids** | National level (under the precautionary principle) | Potential orchids present on the Site.<br>Four species of orchid under the flora protection order.<br>The Wildlife Acts in Ireland offer protection to various native flora and fauna, including native orchids. These acts make it illegal to uproot or damage native plants without the appropriate permissions. |
| **Smooth newt** | County level | Protected under the Schedule 5 Wildlife Act 1976 (and subsequent amendments).<br>May breed within ponds located on the Site and use the terrestrial vegetated habitats within and surrounding the Site. |
| **Common frog** | Local (higher value) level | Listed on Annex V of the Habitats Directive.<br>Protected under the Schedule 5 Wildlife Act 1976 (and subsequent amendments).<br>May breed within ponds located on the Site and use the terrestrial vegetated habitats within and surrounding the Site. |
| **Passerine birds** | Local (higher value) level | All birds are protected under the Schedule Wildlife Act 1976 (and subsequent amendments) during the breeding bird season (i.e., 1st March to 31st August).<br>The complete bird assemblage is currently unknown.<br>Nesting birds considered present within scrub and woodland habitats. |
| **Ground nesting birds** | Local (higher value) level | Ground nesting birds are likely absent from the Site.<br>Ground nesting birds may use the surrounding agricultural grasslands (i.e., offsite).<br>All birds are protected under the Schedule Wildlife Act 1976 (and subsequent amendments) during the breeding bird season (i.e., 1st March to 31st August). |
| **Peregrine** | National level | Listed as Annex I species on the Birds Directive.<br>The cliff ledges provide suitable breeding habitats. |
| **Kestrel** | County level | Listed as Annex I species on the Birds Directive and Red-listed on BoCCI.<br>Kestrel are identified in the Co. Meath Biodiversity Action Plan 2015 – 2020.<br>Suitable nesting habitats exist for this species. |
| **Bat assemblage** | County level | Three trees were assessed as having low potential for roosting bats.<br>The perimeter linear vegetation will support commuting and foraging bats. |

| | | |
|---|---|---|
| | | Bats are identified in the Co. Meath Biodiversity Action Plan 2015 – 2020. |
| **Badgers** | County level | Badgers are identified in the Co. Meath Biodiversity Action Plan 2015 – 2020.<br>Considered likely absent |
| **Pine marten** | Local (higher value) level | Listed on Annex V of the Habitats Directive and are protected under the Wildlife Act 1976 (and subsequent amendments).<br>Suitable habitat for pine marten within and surrounding the Site.<br>Unconfirmed on the Site at present. |
| **Hedgehog** | Local (higher value) level | Protected under the Wildlife acts 1976 and subsequent amendments.<br>Unconfirmed but considered likely present on the Site.<br>Likely to find foraging value on the Site's grassland, woodland, and scrub. |
| **Other mammals (deer, rabbits, fox)** | Local (lower value) level | Unconfirmed but considered likely present on the Site.<br>Afforded no legal protection. |
| **Invertebrates** | Local (higher value) level | Notable invertebrates are protected under the Wildlife (Amendment) Act, 2000.<br>Unknown whether notable species are present, however, most valuable habitats are being retained. |
| **Invasive species – wall cotoneaster** | Vice-county | Previously identified on the Site (in 2022).<br>Afforded no legal protection and are an invasive species of medium impact in Ireland.<br>The Wildlife Acts, provide a legal framework for addressing invasive species in Ireland regarding the control of invasive species that threaten native flora and fauna. |
| **Invasive species – grey squirrel** | N/A | Unconfirmed but considered likely present on the Site.<br>Afforded no legal protection and are an invasive species of high impact in Ireland.<br>The Wildlife Acts, provide a legal framework for addressing invasive species in Ireland regarding the control of invasive species that threaten native flora and fauna. |

# ASSESSMENT OF EFFECTS AND MITIGATION MEASURES

5.165 This section sets out the potential impacts and their effects on important ecological features. The information available from the desk study and fieldwork has been used to identify impacts and the significant effects including positive, negative, direct, indirect and cumulative effects. The following design principles and "designed-in" mitigation have informed the assessment of impacts.

- Within the design of the proposal good practice environmental and pollution control measures are employed with regard to current best practice guidance such as, but not limited to, the following:
  - EPA Environmental Management Guidelines (2006): Environmental Management in the Extractive Industry (Non-Scheduled Minerals); and
  - DoEHLG (Department of the Environment, Heritage and Local Government) April 2004: Quarries and Ancillary Activities Guidelines for Planning Authorities.
- Landscaping and restoration measures are proposed within the design of the development. These are listed in full in **Chapter 2** – Project Description and **Chapter 13** – Landscape of the EIAR and include features to minimise loss of and enhance the biodiversity on-site.

5.166 Taking the above into account, the potential impacts of the proposed development are outlined in the following sections.

## Do Nothing Impact

5.167 In a 'do-nothing scenario', the development at the existing quarry, currently permitted would continue to operate within the extant planning permission until all permitted rock extraction was completed and thereafter be restored in a similar fashion to what is proposed in this planning application, i.e., a mix of beneficial habitat areas and a permanent lake feature.

## Potential Impacts and Effects

### Woodland and scrub

**Potential Impacts**

5.168 The woodland and scrub habitats will be retained and are not expected to be impacted by the proposed development.

**Proposed Mitigation Measures**

5.169 There is no specific mitigation aimed at the woodland and scrub. However, these habitats will be enhanced during the restoration phase as native trees are allowed to re-vegetate on the Site.

**Significance of Residual Effects**

5.170 There are no predicted impacts to woodland. The natural re-vegetating of the site during the restoration phase will have a long-term positive effect on woodland levels on the Site.

### Treelines and Hedgerows

**Potential Impacts**

5.171 The proposed development will result in the loss of c.50m of treeline and approximately nine beech trees, located along a ridge located between the existing quarry void and the site entrance area

which will be removed (refer to **Figure 2-1**). Several of these trees have also been identified as having low bat roosting potential (refer to **Appendix 5-D** and the bat section below).

5.172 The loss of the treeline would be significant at a local level.

**Proposed Mitigation Measures**

5.173 The loss of the treeline will be compensated for through the re-planting measures detailed in **Chapter 2** – Project Description, which includes the proposed hedge planting in a number of locations along the southern and western boundary to tie into existing dense vegetation along those boundaries (c. 330m in total). This planting will be carried out in Year 1 following receipt of planning permission, so that it will have matured by the time the extraction works are complete and will function as a secure barrier to prevent access into the site, once restored.

5.174 The deadwood created from the loss of the treeline will be positioned within retained habitats, creating potential refugia for fauna that use the Site, and enhancing the Site for invertebrates, small mammals, and amphibians.

5.175 The restoration phase will allow natural re-vegetation of the Site, which will mitigate for the loss of the treeline in the long term.

**Significance of Residual Effects**

5.176 There will be a permanent loss of c.50m of treeline to facilitate the proposed development. This will be compensated for through the planting of additional c.330m of hedgerow along the Site boundary. This compensatory planting will ensure that the ecological corridors within the Site are maintained in the long-term and enhance the connectivity currently present by filling in existing gaps within these linear habitats.

5.177 There will be an overall increase of c.280m of 'linear woodland / scrub (WL)' habitat as a result of the Project.

5.178 The creation of deadwood on the Site will enhance the Site for invertebrates, small mammals, amphibians and other fauna.

## Dry Meadows and Grassy Verges (GS2) / Orchids

**Potential Impacts**

5.179 No removal of dry meadows and grassy verges is predicted to be required. This habitat contains potential orchids, which could not be identified to species level. The deposition of material on this habitat could degrade the grassland habitat and crush and limit the growth of orchids. It should be noted that this habitat is only present as a result of the quarrying operations at the site and the overburden storage area creating a suitable growing environment.

5.180 Potential orchids were noted during the updated survey. Under the precautionary principle, it is assessed that this habitat could comprise Annex I habitat 'semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometea) (*important orchid sites) (6210)'. However, as mentioned above, this area has previously been used as an overburden storage area and so as a disturbed habitat it is unlikely to be an Annex 1 habitat.

**Proposed Mitigation Measures**

5.181 There will no further storage of over-burden in this area and it will be left in its current state and act as a biodiversity area. This means that any orchid species present will not be impacted by any future works and no Annex I habitat will be affected.

5.182 No further mitigation is required.

**Significance of Residual Effects**

5.183 As no overburden will be placed in this habitat no orchid or other floral species will be disturbed, and if not currently present, the Annex I habitat 'semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometea*) (*important orchid sites) (6210) may develop over time. This will add to the biodiversity of the area.

## Other Artificial Lakes and Ponds (FL8)

**Potential Impacts**

5.184 One artificial discharge treatment pond will be retained in the proposed development. It is not predicted to undergo any additional impacts than it currently experiences with the present activity on the Site.

5.185 The pond may be impacted by the creation of dust, which may settle within this habitat. However, this is predicted to be no greater than what the pond currently experiences through current levels of quarrying activity. Therefore, this impact is not considered significant.

5.186 The ongoing quarry and expansion works will result in the loss of ephemeral and temporary ponds located within the quarry area. The potential loss of the ephemeral ponds within the quarry site is not considered significant. These ponds are not likely to support smooth newt or common frog. They are anticipated to regularly dry out and be heavily impacted by the activities of the active quarry area at present due to their location within the quarry.

5.187 The impacts to the ponds are not considered significant.

**Proposed Mitigation Measures**

5.188 An additional settlement pond will be created adjacent and east of the existing pond, to the south-west of the Site (refer to **Figure 2-1**).

5.189 The artificial settlement pond is located in an area of the site where there will be no expansion or extraction and therefore the pond, and some of the surrounding terrestrial habitat will be retained as a biodiversity area.

**Significance of Residual Effects**

5.190 The retention of the pond will mean there will be no loss of this high biodiversity area as a result of the construction or operational phases of the Project, and it would not have developed had the quarry not been established. Additionally, the creation of a future water settlement pond will double the overall area of this habitat and potentially enhance biodiversity in the area.

## Amphibians

**Potential Impacts**

5.191 The potential presence of smooth newt and common frog within the Site is currently unknown. However, no significant loss of habitat is predicted for this species. The settlement pond, which could provide breeding habitat will be retained. Whilst the pond may experience adverse effects of dust creation, this will be no greater than what it currently experiences. No other terrestrial habitat other than a treeline will be removed to facilitate the proposed development.

5.192 The grassland within the designated overburden storage area may provide suitable terrestrial habitat for amphibians. However, this area is located approximately 350m away from the potential

breeding ponds. This is within the upper limits the general distribution area for newts[22] and common frog[23] and considering the active quarry area separates the grassland and the potential breeding pond it is considered unlikely these species would use the grassland habitat. Therefore the potential degradation of this habitat is not considered significant for amphibians.

5.193 The potential impacts to amphibians are not considered significant.

**Proposed Mitigation Measures**

5.194 As mentioned above, the artificial pond is in an area of the site where there will be no expansion or extraction and therefore the pond will be retained.

5.195 The majority of the suitable terrestrial habitat will be retained, with only c.50m of treeline to be removed. All terrestrial habitats surrounding the pond (i.e., the terrestrial habitats of highest value to amphibians) will be retained in the proposed development. In addition, the deadwood created from the loss of the treeline will be positioned within retained habitats surrounding the pond. This will create potential refugia for amphibians on the Site.

5.196 A second settlement pond will be created adjacent to the existing one (should the need arise in the future). Furthermore, the quarry void will be filled with water during the restoration phase. These measures will create additional potential breeding habitat for amphibians on the Site, providing a long-term positive impact.

5.197 Surrounding habitats will be allowed to naturally vegetate during the restoration phase. This will create potential terrestrial habitats for amphibians, providing a long-term positive impact.

**Significance of Residual Effects**

5.198 The proposed mitigation will create significant potential breeding and terrestrial habitat for amphibians post-operation. This is anticipated to lead to a long-term positive residual effect for amphibians.

5.199 The short-term minor-negative impacts during the operational phase of the Project are not considered to be any more significant than at present and will be sufficiently mitigated for through the creation of additional breeding and terrestrial habitat. A second settlement pond may provide positive long-term impacts to amphibians through the creation of additional potential breeding habitat on the Site.

## Birds

**Cliff-nesting Birds**

**Potential Impacts**

5.200 There is suitable habitat present within the quarry for cliff-nesting birds such as peregrines, kestrel, and ravens. During the site surveys all quarry cliff-faces were searched for potential evidence of cliff-nesting birds, but no confirmed evidence of nesting sites was noted.

5.201 The lateral extension to the quarry may directly damage or destroy suitable breeding habitat for cliff-nesting birds. This may harm or kill birds that may have recently established a nest in these

[22] Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001), Great Crested Newt Conservation Handbook, Froglife, Halesworth. Available from: https://www.froglife.org/wp-content/uploads/2013/06/GCN-Conservation-Handbook_compressed.pdf. Last accessed: October 2023.

[23] Amphibian and Reptile Conservation (ARC) (n.d.). Common Frog. Available from https://www.arc-trust.org/common-frog. Last accessed October 2023.

areas and may disturb the birds significantly enough to disrupt or completely halt nesting activities on the Site. This would comprise a significant negative impact to this species.

5.202 Peregrine are considered important on a national level. Potential impacts to kestrel, a red-listed bird, are considered significant on a county level. Potential impacts to other birds of prey are considered significant at a local level.

**Proposed Mitigation Measures**

5.203 Cliff-nesting birds can establish nesting sites early in the bird nesting season; if construction works are to begin in the bird nesting season (1st March – 31st August), it is recommended that pre-construction surveys for cliff-nesting birds are undertaken on the Site. These surveys will confirm presence / absence of cliff-nesting nesting bids such as peregrine and allow appropriate mitigation to avoid disturbance of nesting birds, if present. The surveys will comprise of up to three survey visits[24] following guidance adopted from the BTO[25]:

- The first visit will take be undertaken between early March and mid-April.
- If no birds are recorded on the first visit, a second survey visit should be undertaken 2-6 weeks following the first visit to establish if late breeding birds have begun nesting. If no nests are found at this time construction works can commence.

5.204 It is anticipated that cliff-nesting birds such as peregrines will be able to use other areas of the quarry that are not undergoing planned works, with retained areas of the quarry providing suitable ledges for nesting during the operational phase.

5.205 All works will stop if evidence of cliff-nesting are noted within the working area of the quarry. The advice of a qualified ecologist will be sought and a suitable buffer area where no works will take place will be communicated (i.e. no interference of the nest during the bird nesting season of 1st March to 31st August). Monitoring surveys will be implemented to establish when the peregrines are considered to no longer be nesting and works can resume.

5.206 The restoration phase will allow the quarry to flood and create a permanent lake but will also leave exposed cliff faces above the water level. Therefore, it is likely that cliff-nesting birds will still be able to nest on the quarry face and may actually benefit from the flooding of the quarry, through increased protection from predators.

**Significance of Residual Effects**

5.207 With the implementation of the proposed mitigation measures, residual effects to cliff-nesting birds are considered to be not significant.

5.208 The restoration phase will not cause any permanent loss of peregrine nesting habitat and may enhance the Site for nesting peregrines through increased protection from predators through the flooding of the quarry.

[24] If peregrine presence is recorded, following survey visits are not necessary.

[25] BTO (2014). The 2014 Peregrine Survey Guidelines for Contributors. Available from https://www.bto.org/sites/default/files/shared_documents/peregrine_survey/2014-peregrine-survey-guidelines-contributors.pdf. Last accessed October 2023.

**Passerine Birds**

**Potential Impacts**

5.209 The proposed development will result in a minor negative loss of habitat, with necessary vegetation removal being limited to the treeline. This habitat loss will result in a permanent reduction in suitable passerine bird nesting habitat.

5.210 Potential impacts to passerine birds are considered significant at a local level.

**Proposed Mitigation Measures**

5.211 Existing external hedgerows, treelines (other than approximately 50 m of treeline), and existing vegetation along the application site boundaries will be protected and retained. This will maintain ecological corridors along the boundaries of the Site to the surrounding habitats and will provide suitable bird nesting habitat.

5.212 The necessary vegetation removal to facilitate the proposed works will be removed outside the nesting bird season (which runs between 1st March to 31st August) to avoid harming nesting birds that may be present during the nesting season. If any vegetation removal is required inside the nesting season, a preliminary nesting bird check will be undertaken by a qualified ecologist no longer than 48 hours prior to the removal. Any confirmed nests will be protected through a suitable buffer zone, communicated by the ecologist. All confirmed nests will be left *in situ* until all chicks have fledged and the nest is disused.

5.213 Proposed hedgerow planting will infill existing gaps within the hedgerow and provide a net gain of suitable nesting and foraging habitat for passerine birds on the Site.

5.214 During the restoration phase, areas of the Site will be allowed to naturally re-vegetate. This will lead to an overall increase in nesting and foraging habitat for passerine birds in the long-term.

**Significance of Residual Effects**

5.215 With the proposed mitigation measures, there will be no long-term reduction of nesting habitat for passerine birds. All potential impacts to passerine birds are considered minor negative and not significant.

5.216 Long-term there will be an increase in nesting and foraging habitat during the restoration phase. The Site will become more suitable for nesting birds following the operation phase. This will lead to a permanent, positive impact for passerine birds.

**Ground Nesting Birds**

**Potential Impacts**

5.217 There will be limited habitat loss related to ground nesting birds, with the Site being considered negligible for these species relative to offsite open agricultural grasslands. The grasslands located to the north of the Site may offer limited areas of nesting and foraging value. These areas may be subjected to minor degradation through the creation of additional overburden storage area in this location reducing the suitability of this habitat for ground nesting birds. This would lead to a minor-negative impact to these species during the operational phase.

5.218 It is anticipated that there will be no additionally direct impacts from the proposed development to ground nesting birds. Any potential impacts (i.e., dust creation) are already being experienced with current quarrying activities.

5.219 Potential impacts to ground nesting birds are considered significant at a local level.

**Proposed Mitigation Measures**

5.220 Current habitats that may provide foraging value for ground nesting birds will be retained under the current proposals.

5.221 The proposed restoration plan (**Figure 2-5**) will revert all lands within the Site for natural re-vegetation and ecological habitat use. This will represent a replacement of foraging habitat for ground nesting birds.

**Significance of Residual Effects**

5.222 There will be no new impacts to ground nesting birds and therefore the residual effects to them will not be significant. As such, potential impacts are assessed to be of negligible significance to ground nesting birds.

**Wintering Birds**

**Potential Impacts**

5.223 The loss of approximately 50 m of treeline will lead to a reduction of foraging and roosting habitat for wintering birds. This will cause a minor-negative impact for these species during the operational phase.

5.224 Potential impacts to wintering birds are considered significant at a local level.

**Proposed Mitigation Measures**

5.225 The proposed restoration plan (**Figure 2-5**) will revert all lands within the Site for natural re-vegetation and ecological habitat use. This will represent a replacement (like for like) of foraging habitat for wintering birds.

**Significance of Residual Effects**

5.226 There will be short-term loss of habitat for wintering birds. However, this will be compensated for with immediate hedgerow planting. The Site will become more suitable for wintering birds in the long-term during the restoration phase. Overall, the residual effects to wintering birds are not considered to be significant.

## Bats

**Potential Impacts**

5.227 Three trees were assessed to have low bat roosting potential (refer to **Appendix 5-D**). These trees may support opportunistic roosting of individual or very low numbers of bats.

5.228 These trees form part of the c.50 m of treeline requiring removal. Therefore, this may result in the destruction of unconfirmed transitional or opportunistic bat roosts supporting individual or very low numbers of bats. However, the unmitigated loss of these trees could lead to the direct harm or death of the bats within the unconfirmed roosts. The loss of this treeline will also result in the loss of potential bat foraging and commuting habitat. This would result in a minor-negative impact on commuting and foraging bats.

5.229 The potential impacts to bats are considered to be significant on a county level.

**Proposed Mitigation Measures**

5.230 The three trees with low bat roosting potential will be mitigated for and undergo a soft-felling technique. This will include individually removing limbs and slowly lowering to the ground. Any

PRFs will be left unobstructed. All parts of the tree will be left for a minimum period of 24 hours to allow any bats potentially inside to escape.

5.231 All existing external hedgerows, treelines, existing planting along the application site boundaries will be protected and retained as far as possible. This will retain ecological corridors along the boundaries of the Site.

5.232 The proposed restoration plan (**Figure 2-5**) will revert all lands within the Site for natural re-vegetation and ecological habitat use. This will represent a replacement (like for like) of potential breeding and foraging habitat for bats.

**Significance of Residual Effects**

5.233 Following the recommended mitigation, there will be no significant residual effect on bats as a result of the operational phase of the proposed development. The planting of additional hedgerows will act to maintain ecological corridors and connection to the surrounding environment and increase the overall biodiversity of the Site.

5.234 The naturally flooding of the quarry and the re-vegetation of the Site during the restoration phase will enhance the Site for foraging and commuting bats over the long-term. The proposed restoration plan (**Figure 2-5**) will revert all lands within the Site for natural re-vegetation and ecological habitat use. This will represent a replacement (like for like) of potential breeding and foraging habitat for other mammals and represents a long-term positive residual effect.

## Badger

**Potential Impacts**

5.235 The proposed development will result in the loss of c.50m of treeline. However, it should be noted that this area is located on elevated land that has been quarried on three sides. Therefore, its value to badgers is limited and this potential impact is not considered significant as a result.

5.236 The potential degradation of existing grassland through the use of the overburden area may reduce potential foraging and sett creating habitat for badgers. However, this impact to suitable foraging habitat will be gradual as the work progresses and significant areas of suitable foraging habitat will remain for badgers within retained areas as well as offsite.

5.237 The potential impacts to badgers are considered to be not significant.

**Proposed Mitigation Measures**

5.238 Badgers are not currently known to exist within the application Site boundary but may be present in areas close to the Site and are a mobile species and can readily establish setts or create new setts, as the clan expands, or if non-dominant females become pregnant. The habitats scheduled for removal are relatively small and free from dense vegetation, as well as located on elevated land which is quarried on three sides. As such, it is unlikely the badgers will use this area for sett creation.

5.239 The proposed restoration plan (**Figure 2-5**) will revert all lands within the Site for natural re-vegetation and ecological habitat use. This will represent a replacement (like for like) of potential breeding and foraging habitat for badger and represents a long-term positive residual effect.

5.240 Irish guidance on badger setts out the following measures to protect active setts during works:

- 30m minimum standoff for very heavy machinery (generally tracked vehicles);
- 20m minimum standoff when using lighter machinery (generally wheeled vehicles), particularly for any digging operation; and

- 10m minimum standoff when light work such as hand digging, or scrub clearance is required.
- During the breeding season (December to June inclusive) none of the above works should be undertaken within 50 metres of active setts, nor blasting or pile driving within 150 metres of active setts.

**Significance of Residual Effects**

5.241 Through the implementation of the proposed mitigation, the residual effects to badgers are considered to be not significant. The minor-negative impact through the loss of c.50 m of treeline will be compensated for through the planting of c.330 m of hedgerow.

5.242 The proposed restoration plan will lead to a long-term positive residual effect for badger.

## Pine Marten

**Potential Impacts**

5.243 Pine marten are likely present in the local area and suitable pine marten habitat will be reduced on the Site with the removal of c.50 m of treeline. This will provide a minor-negative impact on any pine marten if present on the Site.

5.244 Potential impacts to pine marten are assessed to be significant at a local level.

**Proposed Mitigation Measures**

5.245 The proposed restoration plan (**Figure 2-5**) will revert all lands within the Site for natural re-vegetation and ecological habitat use. This will represent a replacement (like for like) of potential breeding and foraging habitat for pine marten.

**Significance of Residual Effects**

5.246 The impacts from the loss of suitable habitat represent a minor-negative impact to pine marten. Overall, the proposed extension is unlikely to have a significant impact on this species. Furthermore, the natural re-vegetation of the Site will enhance the Site for pine marten, providing a positive impact for this species in the long-term.

## Hedgehog

**Potential Impacts**

5.247 The proposed development will result in the loss of c.50m of treeline and the potential degradation of existing grassland through the overburden storage area, which may reduce potential foraging and sett creating habitat for this species. This is anticipated to represent a minor-negative and short-term impact to this species.

5.248 However, this area is relatively small, and located on elevated land which has been quarried on three sides. It is unlikely that this area provides much value to this species, with significant suitable habitats being retained as well as surrounding the Site.

5.249 Potential impacts to hedgehog are assessed to be not significant.

**Proposed Mitigation Measures**

5.250 All suitable habitats for this species, other than c.50 m of treeline will be retained. It is recommended that the required loss of treeline will be undertaken under the supervision of a qualified ecologist. This ecologist will check for hedgehog in this area immediately prior to the vegetation removal.

5.251 The proposed restoration plan (**Figure 2-5**) will revert all lands within the Site for natural re-vegetation and ecological habitat use. This will represent a replacement (like for like) of potential breeding and foraging habitat for hedgehog and represents a long-term positive residual effect.

**Significance of Residual Effects**

5.252 The proposed extension is not anticipated to have significant residual effects for hedgehog. Overall, following the completion of the operational phase, the Site will be enhanced for hedgehog, leading to a long-term positive impact for this species.

## Other Mammals

**Potential Impacts**

5.253 Other mammals, such as red fox or rabbit, may be impacted through the loss of the treeline. Although no dens or rabbit warrens were noted in this area at the time of the survey, it is possible that they may be built at any time. Any occupants would risk being harmed or killed through the loss of these habitats. Due to the lack of formal protection for these species, this would represent a minor-negative impact.

5.254 Additionally, the removal of the treeline would cause an overall reduction in suitable foraging habitat for these species. This would represent a minor-negative impact.

5.255 Potential impacts to other mammals are assessed to be significant at a local level.

**Proposed Mitigation Measures**

5.256 No specific mitigation measures are provided for other mammals. However, they will benefit from the proposed hedgerow planting. The mitigation measures planned for hedgehogs, includes an ecologist be present during the treeline removal. This will also benefit other mammals, and the check can include a check for potential foxes and badgers with additional mitigation being communicated by the ecologist in the event that they are found to be present in this area.

5.257 The proposed restoration plan (**Figure 2-5**) will revert all lands within the Site for natural re-vegetation and ecological habitat use. This will represent a replacement (like for like) of potential breeding and foraging habitat for other mammals.

**Significance of Residual Effects**

5.258 There may be a minor negative impact to these species through the loss of habitat, representing a minor-negative impact. This is not considered significant. The restoration plan proposals represent a long-term positive residual effect for other mammals.

## Invertebrates

**Potential Impacts**

5.259 The loss of the treeline will reduce suitable habitat leading to a minor-negative impact in local invertebrates.

5.260 Potential impacts to invertebrates are assessed to be significant at a local level.

**Proposed Mitigation Measures**

5.261 A new settlement pond may be created (if required at a future date) and provide additional aquatic habitat that will benefit local invertebrates. Particularly species that use aquatic habitats during their breeding cycle. Additionally, the restoration phase will lead to the natural flooding of the

quarry with water. This new lake will provide further aquatic habitat that will benefit local invertebrates.

5.262 The planned hedgerow creation along the Site boundary will compensate for the lost treeline and enhance the Sites ecological connectivity across the local landscape. It will also provide new foraging and breeding habitat for invertebrates.

5.263 The proposed restoration plan (**Figure 2-5**) will revert all lands within the Site for natural re-vegetation and ecological habitat use. This will represent a replacement (like for like) of potential breeding and foraging habitat for invertebrates.

**Significance of Residual Effects**

5.264 The proposed mitigation will limit the potential impacts to invertebrates. Overall, the effects are considered to represent a minor-negative effect in the short-term. The restoration plan proposals represent a long-term positive residual effect for invertebrates.

## Invasive species

### Wall Cotoneaster

**Potential Impacts**

5.265 Wall cotoneaster produces fruits that are highly appealing to foraging birds, which then promotes its distribution across the surrounding landscape and potentially negatively impacting biodiversity. Without appropriate mitigation and biosecurity measures, there is a risk of causing the further spread of this invasive flora across the local area.

5.266 The potential spread of this species is considered significant on a vice-county level.

**Proposed Mitigation Measures**

5.267 The proposed works will not impact any areas containing any confirmed stands of cotoneaster. Any stands of cotoneaster will be eradicated on the Site to prevent their further spread.

**Significance of Residual Effects**

5.268 The eradication of wall cotoneaster on the Site will limit the possibility of further spread within the Site and offsite. The successful eradication of this species on the Site will lead to a positive impact on biodiversity on the Site and impacts will not be significant.

### Grey Squirrel

**Potential Impacts**

5.269 Grey squirrel were unconfirmed but are anticipated to be present on the Site. There will be no potential impacts from the proposed development regarding the potential further spread of this species within the Site or offsite. There was no evidence of red squirrel on the Site or within the local area, which can be impacted by the presence of grey squirrel. Therefore, potential impacts are not considered to be significant.

**Proposed Mitigation Measures**

5.270 No mitigation measures are necessary or planned with regards to grey squirrel.

**Significance of Residual Effects**

5.271 There will be no residual effects to grey squirrel with regards to the proposed development. The works will not cause the further spread of this species. However, the status of grey squirrel as a high impact invasive species means residual effects to this species as a result of the proposed extension are not applicable.

## Cumulative Effects

5.272 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a project results in individually insignificant impacts that, when considered in-combination with impacts of other proposed or permitted plans and projects, can result in significant effects (CIEEM, 2018).

5.273 The Meath County Development Plan 2021-2027[26] and the Meath Biodiversity Action Plan 2015-2020[27] was reviewed for strategies and objectives that may act in-combination with the project. There are no strategies or objectives in the Meath County Development Plan 2021-2027 that are likely to result in significant effects when considered in-combination with the proposed development.

5.274 Meath County Council planning portal[28] was accessed to examine recent planning applications within 5 years in the vicinity of the Site for potential to act in-combination with the project. **Table 5-4** details the granted planning applications. The recent planning applications found in the vicinity of the Site consist of small-scale domestic and agricultural construction or conversion projects. The recent proposed developments in the vicinity of the Site are sufficiently small-scale and distant from the Site. Therefore, there is no potential for cumulative or in-combination effects with these planning applications.

**Table 5-4: Granted planning applications between 2018 - 2023**

| Planning Ref | Date | Details |
|---|---|---|
| **21594** | 30/03/2021 | Existing telecommunications support structure (previously granted under Plan Ref No. TA120467) together with associated ground equipment cabinets enclosed in security fencing. |
| **22932** | 14/07/2022 | A new single storey dwelling and detached single car garage, opening of a new vehicular entrance to site, new private water well and septic tank and percolation area together with all associated site development works. |
| **211059** | 03/06/2021 | A new proposed dwelling and detached garage, opening of a new vehicular entrance to site, new private water well and septic tank and percolation area together with all associated site development works. |
| **TA180050** | 22/01/2018 | Single storey extension to the side and rear, new dormer window and 2 velux rooflights to front roof, internal alterations, front boundary wall 1.5m, new recessed gate and piers 1.8m and new treatment system and associated works. |

[26] MCC (2021). Meath adopted county development plan. Available from: https://consult.meath.ie/en/consultation/meath-adopted-county-development-plan. (Last accessed October 2023).

[27] Meath County Council (2015 – 2020). Available from https://www.meath.ie/system/files/media/file-uploads/2019-06/County%20Meath%20Biodiversity%20Plan%202015-2020.pdf. Last accessed October 2023. No later plan was found.

[28] NPAD (n.d.). Available from: https://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=9cf2a09799d74d8e9316a3d3a4d3a8de. (Last accessed October 2023).

| | | |
|---|---|---|
| **22808** | 20/06/2022 | The development will consist of (a) retention planning permission for a mobile home in the rear garden of existing family homeplace for a temporary period of 3 years together with associated site works and services and (b) planning permission for the construction of a new detached single storey type dwelling along with a detached single storey domestic garage (same as previously granted on site; pl. ref. nos. TA110989), together with access from public road using a new recessed entrance replacing the existing agricultural entrance on site, road boundary to be adjusted to improve road safety sightline, installation of a new proprietary waste water treatment system (Oakstown O'Reilly BAF) together with all associated landscaping, site works and services. |
| **TA180557** | 30/05/2018 | Extension of duration of planning permission TA/140157 - One and a half storey dwelling, domestic garage, recessed domestic entrance, driveway, proprietary waste water treatment system & polishing filter and all associated site works. |
| **TA201422** | 06/10/2020 | A single storey dwelling, associated detached single garage, opening of a new vehicular entrance to site, wastewater treatment system and percolation area, new private water well together with all associated site development works. Significant further information/revised plans submitted on this application. |
| **22535** | 22/04/2022 | Amendments to planning ref. no. TA/201422. Amendments consist of change of house type from single storey house to one and half storey house, increase size of garage, shared entrance and all associated services. |
| **TA180007** | 05/01/2018 | Development consists of (A) Relinquish Planning Permission granted under file ref. no: TA120853 and the Extension of Duration file ref. no: TA171384. (B) Part change of use of existing Golf Clubhouse from Golf Club Facility/Bar/Function Room use to Open Plan Call Centre, Offices and Storage Areas. (C) The inclusion of an external double door to serve the Storage Area on the north-east elevation and (D) there is no additional loading to the existing wastewater treatment system. |
| **TA190354** | 29/03/2019 | A granny flat within a dormer style extension to side of existing dwelling, renovations and alterations to existing dwelling including the construction of 4 new dormer roof windows, the removal of 2 bay windows, the decommissioning of existing septic tank and the relocation and upgrade to a proposed septic tank and percolation area and all associated site works. |
| **TA191380** | 18/10/2019 | Changes to the plans and elevations of a previously approved granny flat dormer style extension to side of existing dwelling and changes to the proposed renovations/alterations of the existing dwelling all further to that previously approved under Planning Reg. Ref. TA/190354 |
| **221159** | 05/09/2022 | Alterations and extension to an existing house. |
| **221248** | 23/09/2022 | Permission to construct a single storey dwelling house, detached garage, new entrance from the public road, new wastewater treatment system and percolation area and all associated site development works. |

5.275 As detailed in **Table 5-4**, the majority of the surrounding applications comprise small developments, with negligible ecological impact. Therefore, the cumulative effect of the quarry extension, when considered in combination is not considered to comprise a significant effect on biodiversity.

## Proposed Monitoring

5.276 General aftercare monitoring of newly created habitats will be undertaken as set out in Chapter 2.

5.277 As detailed under hedgehog mitigation measures, an ecologist should be present for treeline removal and undertake a preliminary search of this habitat for potential hedgehog and other mammal presence.

## CONCLUSIONS

5.278 SLR Consulting (Ireland) Limited conducted an ecological assessment of the Site and prepared this biodiversity chapter to inform the wider Environmental Impact Assessment process and production of an Environmental Impact Assessment Report to accompany the planning application by Kilsaran for the continued permitted use and extension of the quarry as detailed in Chapter 2.

5.279 The application site is not subject to any statutory or non-statutory designation and no such sites will be directly or indirectly impacted upon by the proposed development, including St Gorman's Well CGS which may provide some value for smooth newt but is not formally designated or recognised for ecological purposes.

5.280 The proposed extraction operations will result in the direct loss of c.50 m of treeline, located on an elevated spur that is quarried on three sides at approximate ITM coordinates 675793 744217 where nine beech trees will be removed. The majority of the tree removal activities will be restricted to the existing quarry footprint.

5.281 The loss of the aforementioned habitat types and the areas/lengths that are involved would (at most) be of ecological significance at a local (higher level). This will be mitigated for through c.330 m of replacement hedgerow planting, which will be undertaken in Year 1 immediately following planning permission being granted. Although it should be noted that this will comprise shrub and young trees. Whilst the hedgerow length will far exceed the length of the treeline loss, it will not be possible to fully mitigate in the short term the loss of the mature trees that are present in these locations by undertaking replacement planting.

5.282 Three trees with low bat roosting potential have been identified to be lost to facilitate the proposed development. Mitigation measures have been recommended through an appropriate soft-felling technique which will minimise potential impacts to roosting bats.

5.283 The Site has suitable habitat for nesting peregrine, kestrel, and raven on the quarry cliff-faces; as well as other birds of prey and passerine birds within suitable vegetation. If construction works are scheduled to start just before or during the bird nesting season (1st March -31st August), pre-commencement surveys have been recommended under proposed mitigation to check that no cliff-nesting birds are present immediately before any works commence.

5.284 The dry grassland (GS2) in the north of the Site potentially supports rare orchids and may qualify as Annex I habitat, if a threshold of orchid abundance and diversity is met. However, no further overburden will be stored in this area in order to avoid any impact on orchids and potential Annex 1 habitat.

5.285 The proposed habitat loss is limited to c.50 m of treeline (comprising nine beech trees). All other works will take place within the existing footprint of the existing quarry.

5.286 Potential impacts and recommended mitigation measures have been detailed for the flora and fauna identified on the Site including the habitats, amphibians, birds, bats, badger, pine marten, hedgehog, other mammals, invertebrates, and invasive species. The proposed mitigation will help the project comply with the Meath County Council Development Plan policies for biodiversity.

5.287 Upon the cessation of extraction operations, the Site will be restored to natural habitat and a permanent lake feature that will have a positive impact at the Local (higher) level at the Site for

wildlife, and also comply with the Meath County Council policy for biodiversity (HER POL 28– see **Appendix 5-A**) which, during a development management process, aims to protect and enhance the biodiversity and landscape features wherever possible, by minimising adverse impacts on existing habitats (whether designated or not) and by including mitigation and/or compensation measures, as appropriate.

# APPENDICES

## Appendix 5-A
## Relevant Legislation and Planning Policy

### Relevant Legislation[29]

#### EIA Directive

The EIA Directive, Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment as amended by Council Directive 97/11/EC of 3 March 1997, Directive 2003/35/EC of 26 May 2003 and Directive 2009/31/EC of 23 April 2009, now codified in Directive 2011/92/EU of 13 December 2011 and amended in Directive 2014/52/EU of 16 April 2014, is designed to ensure that projects likely to have significant effects on the environment are subject to a comprehensive assessment of environmental effects prior to development consent being given. The EIA Directive was first transposed into Irish law by the European Communities (Environmental Impact Assessment) Regulations, 1989 (S.I. No. 349 of 1989) which amended the Local Government (Planning and Development) Act, 1963 (and other legislation) to provide for environmental impact assessment.

#### Habitats and Birds Directive

The Habitats Directive ensures the conservation of a wide range of rare, threatened or endemic animal and plant species. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora was adopted in 1992 and aims to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. It forms the cornerstone of Europe's nature conservation policy with the Birds Directive and establishes the EU wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments.

The Natura 2000 network of protected areas is known as Special Areas of Conservation (SAC) and Special Protection Areas (SPA). In general terms, they are considered to be of exceptional importance in terms of rare, endangered or vulnerable habitats and species within the European Community. The requirements of the Habitats Directive have been transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011 [S.I. No. 477/2011]. This legislation affords protection to both Special Protection Areas and Special Areas of Conservation.

Special Areas of Conservation (SAC) are designated under the Conservation of Natural Habitats and of Wild Fauna and Flora Directive 92/43/EEC (Habitats Directive) which is transposed into Irish law by the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). Special Protection Areas (SPA) are classified under the Birds Directive (2009/147/EC on the Conservation of Wild Birds). Article 6(3) of the Habitats Directive requires an 'appropriate assessment' to be undertaken for any plan or project that is likely to have a significant effect on the conservation objectives of a Natura 2000 site. An 'appropriate assessment' is an evaluation of the potential impacts of a plan or project on the integrity of a Natura 2000 site, and the incorporation, where necessary, of measures to mitigate or avoid negative effects.

#### National Legislation

Flora and fauna in Ireland are protected at a national level by the Wildlife Acts 1976 to 2018 and the Floral (Protection) Order 2015. Natural Heritage Areas (NHA) are areas that are considered to be important for the

[29] Please note that the summary of relevant legislation provided here is intended for general guidance only. The original legislation should be consulted for definitive information.

habitats present or for the species of plants and animals supported by those habitats. Under the Wildlife Amendment Act 2000, NHAs are legally protected from damage from the date they were formally proposed for designation. Section 19(1) of the Act states that '*Where there is a subsisting natural heritage area order in respect of any land, no person shall carry out, or cause or permit to be carried out, on that land any works specified in the order or any works which are liable to destroy or to significantly alter, damage or interfere with the features by reason of which the designation order was made*'.

In addition, a list of proposed NHAs (pNHAs) was published in 1995 but to date these have not had their status confirmed. Prior to statutory designation, pNHAs are subject to limited protection under various agri-environment and forestry schemes and under local authority planning strategies such as County Development Plans.

**Meath County Development Plan 2021-2027**

The relevant planning policies and objectives as extracted from Volume 1 of the Meath County Development Plan 2021-2027 (Chapter 6 – Infrastructure Strategy and Chapter 8 – Cultural and Natural Heritage Strategy) are set out below:

| Policy/Objective | Description |
|---|---|
| **Chapter 6 - Objectives** | |
| **INF OBJ 19** | To ensure that developments permitted by the Council which involve discharge of wastewater to surface waters or groundwaters comply with the requirements of the EU Environmental Objectives (Surface Waters) Regulations and EU Environmental Objectives (Groundwater) Regulations. |
| **Chapter 8 - Policies** | |
| **HER POL 27** | To protect, conserve and enhance the County's biodiversity where appropriate. |
| **HER POL 28** | To integrate in the development management process the protection and enhancement of biodiversity and landscape features wherever possible, by minimising adverse impacts on existing habitats (whether designated or not) and by including mitigation and/or compensation measures, as appropriate. |
| **HER POL 31** | To ensure that the ecological impact of all development proposals on habitats and species are appropriately assessed by suitably qualified professional(s) in accordance with best practice guidelines – e.g. the preparation of an Ecological Impact Assessment (EcIA), Screening Statement for Appropriate Assessment, Environmental Impact Assessment, Natura Impact Statement (NIS), species surveys etc. (as appropriate) |
| **HER POL 32** | To permit development on or adjacent to designated Special Areas of Conservation, Special Protection Areas, Natural Heritage Areas, Statutory Nature Reserves or those proposed to be designated over the period of the Plan, only where the development has been subject to the outcome of the Appropriate Assessment process and has been carried out to the satisfaction of the Planning Authority, in consultation with National Parks and Wildlife. |
| **HER POL 33** | To have regard to the views and guidance of the National Parks and Wildlife Service in respect of proposed development where there is a possibility that such development may |

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|---|---|
| | have an impact on a designated European or National site or a site proposed for such designation. |
| **HER POL 34** | To undertake appropriate surveys and collect data to provide an evidence-base to assist the Council in meeting its obligations under Article 6 of the Habitats Directives (92/43/EEC) as transposed into Irish Law, subject to available resources. |
| **HER POL 35** | To ensure, where appropriate, the protection and conservation of areas, sites, species and ecological/networks of biodiversity value outside designated sites and to require an appropriate level of ecological assessment by suitably qualified professional(s) to accompany development proposals likely to impact on such areas or species. |
| **HER POL 36** | To consult with the National Parks and Wildlife Service and take account of their views and any licensing requirements, when undertaking, approving or authorising development which is likely to affect plant, animal or bird species protected by law. |
| **HER POL 37** | To encourage the retention of hedgerows and other distinctive boundary treatments in rural areas and prevent loss and fragmentation, where practically possible. Where removal of a hedgerow, stone wall or other distinctive boundary treatment is unavoidable, mitigation by provision of the same type of boundary will be required. |
| **HER POL 38** | To promote and encourage planting of native hedgerow species in new developments and as part of the Council's own landscaping works. |
| **HER POL 39** | To recognise the archaeological importance of townland boundaries including hedgerows and promote their protection and retention. |
| **HER POL 40** | To protect and encourage the effective management of native and semi-natural woodlands, groups of trees and individual trees and to encourage the retention of mature trees and the use of tree surgery rather than felling, where possible, when undertaking, approving or authorising development. |
| **HER POL 41** | To protect trees the subject of Tree Preservation Orders (see Map 9.3), Champion and Heritage Trees identified on the Tree Register of Ireland and Heritage Tree Database when undertaking, approving, or authorising development. |
| **HER POL 42** | To promote the preservation of individual trees or groups of trees as identified on the Heritage Maps in Volume 2 and to manage these trees in line with arboricultural best practice. |
| **HER POL 43** | To promote best practice in the control of invasive species in the carrying out its functions in association with relevant authorities including TII and the Department of Transport, Tourism and Sport. |
| **HER POL 44** | To require all development proposals to address the presence or absence of invasive alien species on proposed development sites and (if necessary) require applicants to prepare and submit an Invasive Species Management Plan where such a species exists to comply with the provisions of the European Communities (Birds and Natural Habitats) Regulations 2011-2015. |

| | |
|---|---|
| **HER POL 45** | To ensure that peatland areas which are designated (or proposed for designation) as NHAs, SACs or SPAs are conserved for their ecological, climate regulation, archaeological, cultural and educational significance. |
| **HER POL 47** | To protect the ecological, recreational, educational, amenity and flood alleviation potential of navigational and non-navigational waterways within the County, towpaths and adjacent wetlands. |
| **HER POL 48** | To manage, enhance and protect the wetlands of the County having regard to the 'County Meath Wetland Survey 2010' and ensure that there is an appropriate level of assessment in relation to proposals which would involve draining, reclaiming or infilling of wetland habitats. |
| **Chapter 8 – Objectives** | |
| **HER OBJ 30** | To implement, in partnership with the Department of Culture, Heritage and the Gaeltacht, relevant stakeholders and the community, the objectives and actions of Ireland's National Biodiversity Action Plan 2017 - 2021 which relate to the remit and functions of Meath County Council. |
| **HER OBJ 31** | To implement, in partnership with the Department of Culture, Heritage and the Gaeltacht, relevant stakeholders and the community, the objectives and actions of the County Meath Biodiversity Plan 2015-2020 and any revisions thereof. |
| **HER OBJ 32** | To actively support the implementation of the All-Ireland Pollinator Plan 2021-2025 and any revisions thereof. |
| **HER OBJ 33** | To ensure an Appropriate Assessment in accordance with Article 6(3) and Article 6(4) of the Habitats Directives (92/43/EEC) and in accordance with the Department of Environment, Heritage and Local Government Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities, 2009 and relevant EPA and European Commission guidance documents, is Meath County Development Plan 2021-2027 Chapter 8 carried out in respect of any plan or project not directly connected with or necessary for the management of the site but likely to have a significant effect on a Natura 2000 site(s), either individually or in-combination with other plans or projects, in view of the site's conservation objectives. |
| **HER OBJ 34** | To protect and conserve the conservation value of candidate Special Areas of Conservation, Special Protection Areas, Natural Heritage Areas and proposed Natural Heritage Areas as identified by the Minister for the Department of Culture, Heritage and the Gaeltacht and any other sites that may be proposed for designation during the lifetime of this Plan in accordance with the provisions of the Habitats and Birds Directives and to permit development in or affecting same only in accordance with the provisions of those Directives as transposed into Irish Law. |
| **HER OBJ 35** | To ensure that development does not have a significant adverse impact, incapable of satisfactory avoidance or mitigation, on plant, animal or bird species protected by law. |

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| **HER OBJ 39** | To work in partnership with relevant stakeholders on a suitable peatland site(s) to demonstrate best practice in sustainable peatland conservation, management and restoration techniques and to promote their heritage and educational value subject to Ecological Impact Assessment and Appropriate Assessment Screening, as appropriate, having regard to local and residential amenities. |
| **HER OBJ 40** | To work in partnership with Waterways Ireland and relevant stakeholders to encourage best practice biodiversity management of canal and towpath habitats. |
| **HER OBJ 60** | To encourage, pursuant to Article 10 of the Habitats Directive (92/43/EEC), the management of features of the landscape, such as traditional field boundaries, important for the ecological coherence of the Natura 2000 network and essential for the migration, dispersal and genetic exchange of wild species. |

# Appendix 5-B
# Site Photographs

*Photograph 5-1: Scrub habitat*

*Photograph 5-2: Scrub and immature woodland*

*Photograph 5-3: Dry meadows and neutral grassland*

*Photograph 5-4: Surrounding grasslands and quarry cliffs*

*Photograph 5-5: Dry meadows and neutral grassland containing potential post-flowering orchids*

*Photograph 5-6: Surrounding agricultural grassland*

*Photograph 5-7: Artificial settlement pond*

*Photograph 5-8: Constructed lateral flow reedbed*

*Photograph 5-9: Ephemeral pools within spoil and bare ground*

*Photograph 5-10: Ephemeral pools within spoil and bare ground*

*Photograph 5-11: Spoil and bare ground habitat*

*Photograph 5-12: Quarry interior buildings and bare ground*

*Photograph 5-13: Buildings*

*Photograph 5-14: Buildings*

*Photograph 5-15: Buildings*

*Photograph 5-16: Buildings*

*Photograph 5-17: Hedgerow 1*

*Photograph 5-18: Conifer hedgerow 2*

*Photograph 5-19: Hedgerow 3*

*Photograph 5-20: Hedgerow 4*

*Photograph 5-21: Hedgerow habitat*

*Photograph 5-22: Quarry cliffs providing suitable nesting habitat for cliff-nesting birds)*

*Photograph 5-23: Invasive flora wall cotoneaster*

## Appendix 5-C
## BCT Guidelines for assessing the potential suitability of proposed development sites for bats

| Suitability | Description of Roosting Habitats | Description of Communing and Foraging Habitats |
|---|---|---|
| **Negligible** | A building, structure, tree or other feature with negligible habitat features likely to be used by bats. | Negligible habitat features on site likely to be used by commuting or foraging bats. |
| **Low** | A building or structure with one or more potential roost features that could be used by individual bats opportunistically, but do not provide enough space, shelter, protection or appropriate conditions (for example temperature, humidity, height above ground, light levels, levels of disturbance) and/or suitable surrounding habitat to be used on a regular basis, or by larger numbers of bats. Buildings in this category are unlikely to support a maternity colony or be used by hibernating bats.<br>A tree of sufficient size and age to contain potential roost features but with none seen from the ground, or features seen with only very limited roosting potential (i.e. some small cracks or crevices, low ivy cover). | Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated and not very well connected to the surrounding landscape by other habitat and/or features.<br>Suitable but isolated habitat that could be used by small numbers of foraging bats. |
| **Moderate** | A building, structure, tree or other feature with one or more potential roost sites that could be used by bats due to their size, shelter, protection or appropriate conditions (for example temperature, humidity, height above ground, light levels, levels of disturbance) and surrounding habitat but unlikely to support a roost of high conservation value status.<br>Buildings, structures and trees falling into this category would not be expected to support a maternity colony, or significant hibernation or transitory roost. | Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.<br>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water. |
| **High** | A building, structure, tree or other feature with one or more potential roost sites that are obviously suitable for use by large numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection or appropriate conditions (for example temperature, humidity, height above ground, light levels, levels of disturbance) and surrounding habitat.<br>Buildings, structures and trees falling into this category may be expected to support a maternity colony, or significant hibernation or a significant transitory roost. | Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.<br>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such a broadleaved woodland, tree-lined watercourses and grazed parkland.<br>Site is close to and connected to known roost. |

# Appendix 5-D
# Preliminary Roost Assessment

## TN2 – Tree with bat roosting potential

## Overall assessment

TN2 was assessed as having low bat roosting potential.

## Description

TN2 comprised a standing deadwood located within a treeline on the raised edge of the quarry, at approximate ITM coordinates 675801, 744207.

## Evaluation

The standing deadwood possessed areas of lifted bark, which provide a minor crevice behind and offering a PRF for crevice-dwelling bats. Additionally, the main stem was covered with dense ivy. It may be possible that further PRFs exist within the obscured areas of the tree that may be suitable for crevice-dwelling bats. However, given that that tree was at the very edge of a treeline, on an elevated spur that was quarried on three sides, it is anticipated that it is likely subjected to significant levels of noise and vibrations. Therefore, limiting its suitability for roosting bats.

### TN3 – Tree with bat roosting potential

### Overall assessment

TN3 was assessed as having low bat roosting potential.

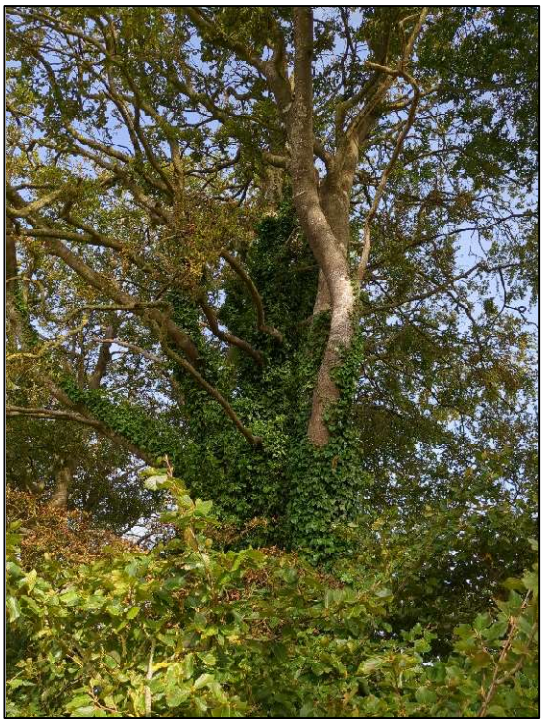
### Description

TN3 comprised a mature beech tree located within a treeline on the raised edge of the quarry, at approximate ITM coordinates 675780, 744214.

### Evaluation

No PRFs were identified on the tree. However, the main stem was covered with dense ivy. It may be possible that PRFs exist within the obscured areas of the tree. It is anticipated that any potential PRFs within the stem would be suitable for crevice-dwelling and void-dwelling bats.

### TN4 – Tree with bat roosting potential



### Overall assessment

TN4 was assessed as having low bat roosting potential.

### Description

TN4 comprised a semi-mature beech tree located within a treeline on the raised edge of the quarry, at approximate ITM coordinates 675789, 744211.

### Evaluation

No PRFs were identified on the tree. However, the main stem was covered with dense ivy. It may be possible that PRFs exist within the obscured areas of the tree. It is anticipated that any potential PRFs within the stem would be suitable for crevice-dwelling and void-dwelling bats.

# Appendix 5-E
# Hedgerow Assessment

*Table 5-5: Hedgerow assessment – Hedgerow significance[30] –*

*0 = Low significance, 1 = Slightly significant, 2 = Moderately significant, 3 = Significant, 4 = Highly significant*

| Criteria | Hedgerow 1 | Hedgerow 2 | Hedgerow 3 | Hedgerow 4 |
|---|---|---|---|---|
| **Approximate total length** | c.320 m | c.170 m | c.215 m | c.600 m |
| **ITM coordinates** | 675850 744513 | 675833 744475 | 676306 744438 | 676072 743975 |
| **Photograph ref.** | 17 | 18 | 19 | 20 |
| **Historical significance** | | | | |
| Period of establishment | Farm boundary (3) | Recently established (0) | Farm boundary (3) | Farm boundary (3) |
| **Species diversity significance** | | | | |
| Species count | 4-5 species (1)<br>Bramble | 1-3 species (0)<br>Dominated by Leyland cypress | 4-5 species (1) | 4-5 species (1) |
| **Ground flora significance** | | | | |
| Species type | Dominated by ruderals (0) | N/A | Dominated by ruderals (0) | Dominated by ruderals (0) |
| Species count | 4-5 species (3) | 2-3 species (1) | 4-5 species (3) | 4-5 species (3) |
| Pteridophytes (ferns) | <2 species (0) | <2 species (0) | <2 species (0) | <2 species (0) |
| **Structure, construction, and associated feature** | | | | |
| Wall / Bank | None (0) | None (0) | None (0) | None (0) |
| Drain **/ ditch** | N/A | N/A | N/A | N/A |
| **Habitat connectivity significance** | Link with woodland (3) | Link with woodland (3) | Link with woodland (3) | Link with woodland (3) |
| **Landscape significance** | Mature hedgerow trees (3) | Low significance (0) | Low significance (0) | Mature hedgerow trees (3) |

[30] https://www.woodlandsofireland.com/wp-content/uploads/hedgerow-survey.pdf. (Last accessed October 2023).

| | | | | |
|---|---|---|---|---|
| **Total no. of 4** | 0 | 0 | 0 | 0 |
| **Total no. of 3** | 4 (12) | 1 (3) | 3 (9) | 3 (9) |
| **Total no. of 2** | 0 | 0 | 0 | 0 |
| **Total no. of 1** | 1 (1) | 1 (1) | 1 (1) | 1 (1) |
| **Total no. of 0** | 3 (0) | 4 (0) | 4 (0) | 3 (0) |
| **Cumulative score** | 13 | 4 | 10 | 10 |
| **Overall significance** | **Moderately significant** | **Low significance** | **Moderately significant** | **Moderately significant** |

*Table 5-6: Hedgerow assessment – hedgerow condition*[31]

***0 = unfavourable, 1 = Adequate, 2 = Favourable, 3 = Highly Favourable***

| Criteria | Hedgerow 1 | Hedgerow 2 | Hedgerow 3 | Hedgerow 4 |
|---|---|---|---|---|
| **Structural variables** | | | | |
| Height | >4m (3) | 1.5 – 2.5m (1) | 2.5 – 4m (3) | >4m (3) |
| Width | 2 – 3m (2) | 1 – 2m (1) | 1 – 2m (1) | 2 – 3m (2) |
| Profile | Overgrown (3) | Straight sided (2) | Remnant derelict (0) | Overgrown (3) |
| Basal density | Semi-opaque (2) | Open (0) | Semi-opaque (2) | Dense (3) |
| **Continuity** | | | | |
| % of gaps | Continuous (3) | Continuous (3) | >10% (0) | Continuous (3) |
| Specific gaps | No gaps (3) | No gaps (3) | Individual gaps >5m (0) | No gaps (3) |
| **Negative indicators / degradation / issues affecting long-term viability** | | | | |
| Bank / wall | N/A | N/A | N/A | N/A |

[31] https://www.woodlandsofireland.com/wp-content/uploads/hedgerow-survey.pdf. (Last accessed October 2023).

| | | | | |
|---|---|---|---|---|
| % of canopy dominated by ivy | <25% Adequate (1) | <25% Adequate (1) | <25% Adequate (1) | <25% Adequate (1) |
| Unfavourable species composition | Sycamore makes up >10% (0) | 100% Coniferous sp. (0) | Adequate (1) | Sycamore makes up >10% (0) |
| Ground flora / Hedge base | Contains noxious weeds (0) | Adequate (1) | Adequate (1) | Contains noxious weeds (0) |
| Degraded margin | Adequate (1) | Grassy margin >2m on both sides (3) | Adequate (1) | Adequate (1) |
| **Total no. of 3** | 4 | 3 | 1 | 5 |
| **Total no. of 2** | 2 | 1 | 1 | 2 |
| **Total no. of 1** | 2 | 4 | 5 | 2 |
| **Total no. of 0** | 2 | 2 | 3 | 2 |
| **Overall condition**[32] | **Unfavourable** | **Unfavourable** | **Unfavourable** | **Unfavourable** |

[32] Note that the score of 0 in any category represents a hedgerow in unfavourable condition.

# FIGURES



**Target Notes**

**TN1 – Tree with low bat roosting potential**

**TN2 – Tree with low bat roosting potential**

**TN3 – Tree with low bat roosting potential**

River Boyne & River Blackwater (SAC) - 002299

River Boyne & River Blackwater (SPA) - 004232

Rathmolyon Esker (pNHA) - 000557

Molerick Bog (NHA) - 001582

Ballynabarney Fen (pNHA) - 001573

Royal Canal (pNHA) - 002103

Ballina Bog (pNHA) - 000390

RECEIVED: 01/03/2024

N

0 500 1000 1500 2000m 3000 4000 5000

Metres 1:50,000

NOTES

Extract from Ordnance Survey Discovery Series Mapping 42 & 49

CYAL 50381397



LEGEND

- LANDHOLDING BOUNDARY (c.53.8 HA.)
- PLANNING APPLICATION AREA (c.31.1 HA.)
- 5KM OFF-SET FROM APPLICATION AREA
- SPECIAL AREA OF CONSERVATION (SAC)
- SPECIAL PROTECTION AREA (SPA)
- proposed NATURAL HERITAGE AREA (pNHA)
- proposed NATURAL HERITAGE AREA (pNHA)

Kilsaran
ideas taking shape

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**ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

RATHCORE QUARRY
RATHCORE / CONNELLSTOWN TOWNLANDS
ENFIELD, CO. MEATH

**DESIGNATED SITES WITHIN 5KM**

**FIGURE 5-1**

Scale: 1:50,000 @ A3

Date: FEBRUARY 2024

00036.064960.Rathcore EIAR Fig 5-1 Designated Sites.dwg

RECEIVED: 01/03/2024

N

NOTES

Extract from Ordnance Survey 2500 Scale Digital Mapping 3053-B, 2984-C, 3054-A

CYAL 50381397
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Aerial Drone Image (2023) provided by Kilsaran Concrete Unlimited Company

LEGEND

- LANDHOLDING BOUNDARY (c.53.8 HA.)
- APPLICATION AREA (c.31.1 HA.)
- LIMIT OF EXCAVATION (c.10.6 HA.)
- ED3 - RE-COLONISING BARE GROUND / ED4 - ACTIVE QUARRIES AND MINES
- FL8 - OTHER ARTIFICIAL LAKES AND PONDS
- WS1 - SCRUB
- WS2 - IMMATURE WOODLAND
- GS2 - DRY MEADOWS & NEUTRAL GRASSLAND
- WL1 - HEDGEROWS
- WL2 - TREELINES
- TARGET NOTES

① **TN1** Tree with low bat roosting potential
② **TN2** Tree with low bat roosting potential
③ **TN3** Tree with low bat roosting potential

0 80m 200
Metres 1:2500

Kilsaran
ideas taking shape

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RATHCORE / CONNELLSTOWN TOWNLANDS
ENFIELD, CO. MEATH

**HABITAT PLAN**

**FIGURE 5-2**

Scale 1:2,500 @ A3
Date FEBRUARY 2024

00036.064960.Rathcore EIAR-Fig5-2 Habitat Map R1.dwg