CHAPTER 6

BIODIVERSITY

QUARRY CONSULTING

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CHAPTER 6: BIODIVERSITY

Introduction

Background

6.1 This chapter provides an Ecological Impact Assessment (EcIA) undertaken by Green and Blue Ecology acting on behalf of Quarry Consulting to inform the wider Environmental Impact Assessment (EIA) process and preparation of the Environmental Impact Assessment Report (EIAR) on the likely significant impacts on biodiversity from the proposed deepening of an existing quarry at Cregaree, Co. Mayo (please refer to Figure 1.1).

6.2 The current consented quarrying operations includes the stripping of all vegetation, topsoils and overburden and the extraction and processing of rock to a depth of 5mOD within the application site for the proposed deepening.

Purpose of the Ecological Impact Assessment

6.3 The EcIA can be considered as having three main purposes:

- to provide an objective and transparent assessment of the ecological effects of the proposed development and the implications on biodiversity;
- to permit objective and transparent determination of the consequences of the proposed development in terms of national, regional and local policies relevant to nature conservation and biodiversity; and
- to demonstrate that the proposed development will meet the legal requirements relating to habitats and species.

6.4 This EcIA has been undertaken in accordance with the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM)[1] '*the CIEEM EcIA Guidelines*' and with respect to the Environmental Protection Agency's (EPA) guidelines for carrying out Environmental Impact Assessment Reports[2].

6.5 The assessment follows a standard approach based upon: the description of the existing baseline conditions within the application site; the determination of important ecological features; and the identification of all potentially significant ecological effects from the proposed deepening of an existing quarry at Cregaree. The assessment also considers the likelihood of any cumulative effects, i.e. those resulting from the proposed development and other plans or projects on relevant ecological features.

6.6 Where a negative impact has been identified, suitable mitigation measures to prevent, reduce or offset the level of impact are provided, or where mitigation is not possible, enhancement and compensation measures are detailed to ensure compliance with nature conservation legislation and to address any potentially significant effects on biodiversity.

6.7 Where appropriate this Chapter also identifies how mitigation, enhancement and compensation measures will / could be delivered along with the requirements for post-construction monitoring, maintenance or management.

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[1] CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial , Freshwater and Coastal and Marine*. Version 1.3. Chartered Institute of Ecology and Environmental Management, Winchester.
[2] Environmental Protection Agency (2022). *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*. Environmental Protection Agency. Johnstown Castle Estate, Co. Wexford.

6.8 Any residual effects arising, following implementation of mitigation and enhancement measures, are then identified and assessed, with any significant effects clearly described.

Legislative and Policy Context

Legislation

6.9 Relevant legislation underpinning the conservation of designated sites, habitats and species is summarised in Table 6.1.

Table 6-1: Relevant Legislation

Legislation	Description
The Wildlife Act 1976 (as amended)	The Wildlife Act is the primary legislation in Ireland which protects animals, birds, plants and their habitats. It also allows the designation of Natural Heritage Areas (NHA) and statutory Nature Reserves and the regulation of hunting and controls in wildlife trading.
The Flora (Protection) Order 2022	The Flora (Protection) Order 2022 provides statutory protection to a number of rare plant species in Ireland from being wilfully cut, picked uprooted or damaged or part of the plants removed.
European Communities (Birds and Natural Habitats) Regulations 2011 (as amended)	The European Communities (Birds and Natural Habitats) Regulations 2011 transpose into national law European Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) and Directive 2009/147/EC on the Conservation of Wild Birds (The Birds Directive) that provides for the designation and protection of *'European sites'* including Special Areas of Conservation (SAC) and Special Protection Area (SPA), the protection of *'European Protected Species'*, and the adaptation of planning and other controls for the protection of European Sites. The regulations introduce a review procedure for plans and projects likely to significantly affect a European site, and licensing requirements for developments that may affect a European protected species

Planning Policy

National

6.10 The National Development Plan 2021-2030 sets out the infrastructure and investment priorities that underpin the implementation of the National Planning Framework. The National Development Plan details the main investment projects, programmes and priorities in Ireland during the lifetime of the Plan.

6.11 The National Planning Framework contains a set of national objectives and key principles as a framework to guide development and investment by empowering each region to lead in the sustainable planning and development of their communities.

Regional

6.12 The Regional Spatial and Economic Strategy 2020-2032 sets out the long-term spatial planning strategy for the Northern and Western Region, covering the counties of Cavan, Donegal, Mayo, Leitrim, Mayo, Monaghan, Roscommon and Sligo.

Local

6.13 Planning policy at the local level is provided by the Mayo County Development Plan 2022-2028 adopted on 29th June 2022. The Mayo County Development Plan contains a number of policies relevant to biodiversity that are summarised at Appendix 6A.

Biodiversity Planning

6.14 Ireland's National Biodiversity Plan 2023-2030[3] 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*".

6.15 Local Biodiversity Action Plans have been produced by some County Councils, among them the County Mayo Biodiversity Plan 2010-2015, with a new strategy currently being developed part of the County May Heritage Plan 2020-2025, which identify programmes of action to protect and enhance biodiversity at a local level.

Assessment Methodology and Significance Criteria

Area of Study

6.16 The area of study was defined on a spatial scale at which ecological features could be affected by the proposed deepening of the existing quarry at Cregaree. This included all the land lying within the application site as well as ecologically sensitive features within the wider surrounding area with the potential to be directly or indirectly affected by the proposed development.

6.17 Based on size and nature of the proposed development and the local landscape it is considered that the maximum extent of any potential zone of influence over which ecological features may be affected by biophysical changes as a result of the proposed development and associated activities would not extend beyond 2km from the boundary of the application site.

Establishing Baseline Ecological Conditions

6.18 Baseline ecological data was collated through a combination of desk-based studies and field survey consistent with current standard methodologies and published guidelines. The scope of the ecological field surveys was defined on the basis of known and potential ecological interest within the area of study, and best practice[4].

6.19 Table 6.2 provides a summary of the ecological scope of works and the methods used to establish the ecological baseline conditions within the study area.

6.20 Over and above the scope of works in Table 6.2, it was deemed that no other specialist surveys were necessary in respect to the habitats present at the application site and their potential to support protected species.

[3] National Parks and Wildlife Service (2023). Ireland's 4th *National Biodiversity Plan 2023-2030*. Government of Ireland.

[4] Institute of Environmental Assessment (1995). *Guidelines for Baseline Ecological Assessment*. Chapman and Hall (E & F N Spon), London.

Table 6.2: Ecological Scope of Works and Methodologies

Study / Survey	Scope of Works	Study Area	Methodology
Desk-based study	Statutory and non-statutory designated sites	All sites within a 2km radius of the application site	Web-search including the National Parks and Wildlife Service (NPWS) interactive mapping facility (https://www.npws.ie).
	Protected, rare and notable species	2km grid squares encompassing the application site (grid square M15H, M15I, M15M and M15N).	Web-search including information held by the NPWS and the National Biodiversity Data Centre (NBDC) (https://www.biodiversityireland.ie) on 12th April and 6th October 2024. A review of previous ecological surveys carried out at this site to inform the applications for substitute consent of quarrying operations and under Section 34 for the extraction of material to 5mOD defined as Area B and Area C respectively within these applications and which form the application site for the deepening of the existing quarry.
Habitat Survey	To record and classify the habitat types and appraise on the likely presence / absence of protected species	Application site	Site visit and walkover survey by Steve Judge MCIEEM of Green & Blue Ecology on 19th April 2024. Standard approach to the classification and mapping of habitats in accordance with Fossitt (2000)[5] to Level 3 and target notes where applicable to describe any feature of particular ecological interest. Extension of Habitat Survey method to include an assessment of habitats for evidence of, or their potential to support protected, rare or notable species (including mammals, birds, reptiles, amphibians and invertebrates) and any other important ecological feature that may require mitigation or an ecologically sensitive design in respect of the proposed development.

[5] Fossitt, J.A. (2000). *A Guide to Habitats in Ireland*. Reprint 2007. The Heritage Council, Kilkenny, Ireland.

Uncertainty of Data and Limitations

6.21 Due to access constraints, for example challenging conditions along land adjacent to the Cong Canal, no detailed survey was carried out on land outside the application site and landholding of McGraths Limestone Works Ltd. However, this is not considered to have affected the overall assessment on important ecological features with the potential to be affected by the proposed deepening of the existing quarry at Cregaree. Additionally, high-resolution drone imagery was available for review, which aided the assessment of ecological conditions on lands beyond the immediate application area.

6.22 The lack of evidence of any one particular protected species does not necessarily preclude its presence at the site either at this current time or in the future. It is considered however, that the timing of the site visit was suitable for protected species and their habitat-based assessment, as most species would have been active during this time and provided evidence of their presence.

Assessment Methodology

Determining Ecological Importance

6.23 In accordance with the CIEEM guidelines only ecological features (habitats, species, ecosystems and their functions/processes), which are considered to be important and potentially affected by the project should be subject to detailed assessment. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable.

6.24 CIEEM suggest that to ensure a consistency of approach, ecological features (designated sites, habitats and species) are valued in accordance with their geographical frame of reference. For the purpose of this assessment the geographical frame of reference defined by Transport Infrastructure Ireland[6] has been used, as detailed below:

- International;
- National;
- County;
- Local (higher); and
- Local (lower).

6.25 Some features can already be recognised as having ecological value, for example they may be designated as statutory or non-statutory nature conservation sites. Other ecological features may require an evaluation based upon their previously un-assessed biodiversity value and professional judgement. A summary of the criteria used in the evaluation of designated sites, habitats and species is provided in Table 6.3.

[6] NRA (2009). *Guidelines for Assessment of Ecological Impacts of National Road Schemes*. Revision 2. National Roads Authority, Dublin.

Table 6.3: Criteria for the Evaluation of Ecological Features

Value	Criteria
International	An internationally designated site or proposed site including SAC, Site of Community Importance (SCI), SPA, or Ramsar site, or an area which has been determined meets the published selection criteria for such designations, irrespective of whether or not it has yet been notified. World Heritage Sites, where the ecological feature assessed is an intrinsic part of the natural heritage value that led to the designation. An intrinsic part of the core area of a designated Biosphere Reserve. Undesignated sites containing 'best examples' of Annex I habitats under the EU Habitats Directive. Major designated salmonid waters. A resident or regularly occurring population of an internationally important bird species listed in Annex I and/or referred to in Article 4(2) of the EU Birds Directive and/or a species of animal or plant listed in Annex II and/or IV of the EU Habitats Directive and which is threatened or rare in and which is threatened or rare in Ireland or of uncertain conservation status or of global conservation in the National Biodiversity Plan. A resident or regularly occurring nationally significant population or of any internationally important species representing greater than 1% of its international population.
National	A nationally designated site or proposed as a National Heritage Area (NHA) or statutory Nature Reserve or Refuge for Flora and Fauna, or an area fulfilling the criteria for designations, irrespective of whether or not it has yet been notified. Undesignated sites containing good examples and viable areas of Annex I habitats under the EU Habitats Directive. A resident or regularly occurring population (>1% of the national population) of a nationally important species which is protected under the Wildlife Acts as amended or listed on a relevant Red Data list.
County	Areas identified as Areas of Special Amenity, subject to a Tree Preservation Order or Area of High Amenity where designated on the basis of their ecological value. Site containing area or areas of habitat types listed in Annex I of the EU Habitats Directive that do not fulfil the criteria for valuation of International or National importance. A resident or regularly occurring locally significant population (>1% of the county population) assessed of importance of a county important species and/or a species protected under the Wildlife Acts or listed in Annex I of the EU Birds Directive, Annex II and/or IV of the EU Habitats Directive or on a relevant Red Data list assessed to be important at County level. County important populations of species, or viable areas of semi-natural habitats or natural heritage features identified within the NBP and/or Local Biodiversity Action Plan. Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county.

Value	Criteria
	Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.
Local (higher)	Locally important populations of priority species or habitats or natural heritage features identified in any Local Biodiversity Action Plan. A resident or regularly occurring locally significant population (>1% of the local population) and/or a species protected under the Wildlife Acts or listed in Annex I of the EU Birds Directive, Annex II and/or IV of the EU Habitats Directive or on a relevant Red Data list assessed to be important at the Local level. Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality. Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value.
Local (lower)	Sites containing small areas of semi-natural habitat or features that are of some local importance for wildlife.

Assessment of Potential Impacts

6.26 The assessment of potential ecological impacts has been carried out in accordance with the guidelines published by CIEEM and EPA and be summarised as:

- the identification of the range of potential impacts that may arise from the proposed development;
- the consideration of the systems and processes in place to avoid, reduce and mitigate the possible effects of these impacts;
- the identification of opportunities for ecological enhancement within the development;
- an assessment of the residual impacts, following consideration for the implementation of avoidance, mitigation and enhancement measures; and
- where necessary the identification of compensation required to offset any residual effects.

6.27 Table 6.4 provides a summary of the criteria used to evaluate the residual impacts and assess the significance of any such impact.

Table 6.4: Key Considerations when Characterising Impacts

Value	Criteria
Direction of impact	Positive (a change that improves the quality of the environment) or Negative (a change which reduces the quality of the environment)
Probability of occurring	Broadly defined on 4 levels: Certain (95% chance or higher), Probable (above 50% but below 95%), Unlikely (above 5% but less than 50%) and extremely unlikely (less than 5%)
Magnitude	Size, amount, intensity and volume of any impact on any particular feature including any severity of effect, based on EPA's guidance, as imperceptible, slight, moderate, significant and profound.
Duration	Effects may be described, based on EPA's measures, as short (1 to 7 year), medium (7 to 15 years) or long-term (15 to 60 years) and permanent or temporary in ecological terms (e.g. within the lifetime of the species affected).
Frequency of timing	The number of times an activity will occur and timing of an activity
Reversibility	Whether or not the effect can be reversed from spontaneous recovery or which may be counteracted by mitigation within a reasonable timescale

6.28 Impacts are defined as being negative or positive. The term '*significant*' is independent of the value of the receptor. A significant impact is defined as an impact on the integrity of a defined ecosystem, and/or an action that undermines the conservation objectives (either specific or broad) of an important ecological feature.

6.29 Where a potential negative impact has been identified, mitigation, enhancement and/or compensatory measures have been formulated using best practice techniques and guidance to prevent, reduce or offset a significant effect. The degree of confidence in the likely success of mitigation or compensation, based upon published studies and the experience of the assessor, is also made and any uncertainties are clearly expressed.

6.30 The final part of the assessment is to determine the significance of the residual ecological impacts of the proposed development and also describe the implications of these operations from a legal perspective.

Avoidance, Mitigation, Compensation and Enhancement

6.31 A sequential process has been adopted to avoid, mitigate and compensate for ecological impacts. This is often referred to as the '*mitigation hierarchy*'.

6.32 It is important for the EIAR 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.

Assessment of Cumulative Impacts

6.33 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a particular location. This EcIA assesses the potential cumulative impacts from the proposed development with other projects which could include:

- 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.

Baseline Conditions

6.34 This section provides an overview of the existing ecological baseline conditions at the application site for the proposed deepening of the existing quarry at Cregaree and within the wider surrounding environment.

General Site Description

6.35 The existing limestone quarry is located in the townland of Cregaree, approximately 250m north of the village of Cong and 10km south west of Ballinrobe, Co. Mayo.

6.36 The application site covers approximately 19ha of the northern section of the overall existing and consented operational quarry.

6.37 The existing quarry void has faces rising up to a height of 20m from a floor level of 5m above ordnance datum (mOD) and is used for the extraction of limestone using blasting techniques. The limestone is then processed (crushing and screening) to produce a range of aggregate materials. Ancillary facilities at the existing quarry include an office, weighbridge, canteen, toilets and a wheelwash as well as a concrete batching plant, lime plant, calcium carbonate plant and asphalt plant.

6.38 The surrounding landscape is dominated by agricultural land comprising of fields under permanent pasture typically bounded by stone walls but also with some hedgerow boundaries interspersed by areas of large tracts of woodland and smaller patches of scrub and exposed limestone rock. Lough Mask to the north and Lough Corrib to the south form the dominant landscape features with the quarry lying in the isthmus of these two large waterbodies and immediately adjacent a section of the Cong Canal that connects these two lakes.

6.39 The largest local urban population is the village of Cong to the south of the existing quarry with other smaller rural settlements and ribbon development along the roads and lanes that cross this area.

Designated Sites

6.40 The application site is not subject to any statutory or non-statutory nature conservation designations (SAC, SPA, NHA, Nature Reserve or pNHA).

6.41 Within a 2km radius of the application site there are five designated sites, including three statutory Natura 2000 sites and two non-statutory pNHAs. Figure 6.1 shows the location of designated sites in relation to the application site and summary details of these designated sites is presented in Table 6.5.

Table 6.5: Designated Sites

Designated Site	Reason for Importance / Designation	Location Relative to Application Site at Closest Point	Level of Value
Statutory Designated Sites			
Lough Carra/Mask Complex SAC [site code 001774]	Lough Carra/Mask Complex SAC comprises the two large lakes of Lough Mask and Lough Carra and the smaller Cloon Lough. Loughs Mask and Carra are hydrologically linked, while the main outflowing river from the Mask connects to Lough Corrib. Lough Carra/Mask Complex qualifies as a SAC for the following habitats as listed under Annex I of the EU Habitats Directive: • Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*); • Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea*; • Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.; • European dry heaths; • Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco Brometalia*)(*important orchid sites); • Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*; • Alkaline fens; • Limestone pavements; and	1.09km west	International

Designated Site	Reason for Importance / Designation	Location Relative to Application Site at Closest Point	Level of Value
	• Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*AlnoPadion, Alnion incanae, Salicion albae*). It also qualifies for the presence of the following species listed on Annex II of the EU Habitats Directive: • Lesser Horseshoe Bat (*Rhinolophus hipposideros*); • Otter (*Lutra lutra*); and • Slender Green Feather-moss (*Hamatocaulis vernicosus*).		
Lough Corrib SAC [000297]	Lough Corrib is the second largest lake in Ireland and one the best examples of a large lacustrine catchment system in Ireland, with a range of habitats and species still well represented Lough Corrib qualifies as a SAC for the following habitats as listed under Annex I of the EU Habitats Directive: • Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*); • Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea*; • Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.; • Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation; • Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco Brometalia*)(*important orchid sites); • Molinia meadows on calcareous, peaty or clavey-	1.71km south southeast	International

Designated Site	Reason for Importance / Designation	Location Relative to Application Site at Closest Point	Level of Value
	silt-laden soils (*Molinion caeruleae*); • Active raised bogs; • Degraded raised bogs still capable of natural regeneration; • Depressions on peat substrates of the *Rhynchosporion*; • Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*; • Petrifying springs with tufa formation (*Cratoneurion*); • Alkaline fens; • Limestone pavements; • Old sessile oak woods with *Ilex* and *Blechnum* in British Isles; and • Bog woodland. It also qualifies for the presence of the following species listed on Annex II of the EU Habitats Directive: • White-clawed Crayfish (*Austropotamobius pallipes*); • Brook Lamprey (*Lampetra planeri*); • Sea Lamprey (*Petromyzon marinus*); • Freshwater Pearl Mussel (*Margaritifera margaritifera*); • Atlantic Salmon (*Salmo salar*); • Otter (*Lutra lutra*); • Lesser Horseshoe Bat (*Rhinolophus hipposideros*); • Slender Green Feather-moss (*Hamatocaulis vernicosus*); and • Slender naiad (*Najas flexilis*).		

Designated Site	Reason for Importance / Designation	Location Relative to Application Site at Closest Point	Level of Value
Lough Corrib SPA [004042]	Lough Corrib qualifies under Article 4 of the EC Directive on the Conservation of Wild Birds (2009/147/EC) (Birds Directive) as a SPA because it regularly supports populations of European importance including: • Greenland White-fronted Goose (*Anser albifrons flavirostris*); • Gadwall (*Anas strepera*); • Shoveler (*Anas clypeata*); • Pochard (*Aythya ferina*); • Tufted Duck (*Aythya fuligula*); • Coot (*Fulica atra*); • Golden Plover (*Pluvialis apricaria*); • Black-headed Gull (*Chroicocephalus ridibundus*); • Common Gull (*Larus canus*); • Common Tern (*Sterna hirundo*); • Arctic Tern (*Sterna paradisaea*); • Common Scoter (*Melanitta nigra*); and • Hen Harrier (*Circus cyaneus*). It is also recognised as an important wetland for wintering waterbirds.	1.71km south southeast	International
Non-statutory Designated Sites			
Lough Carra/Mask Complex pNHA [001774]	Lough Carra/Mask Complex SAC comprises the two large lakes of Lough Mask and Lough Carra and the smaller Cloon Lough. Lough Mask dominates the site being the sixth largest lake in Ireland and one of the deepest (maximum depth 58m) and is an excellent example of an oligotrophic lake edged by a mosaic of limestone pavement, scrub and woodland.	1.09km west	National

Designated Site	Reason for Importance / Designation	Location Relative to Application Site at Closest Point	Level of Value
	Lough Carra is generally shallow (maximum depth 9m) and one of the best examples of a hard water marl lake in Ireland surrounded by limestone pavement with a diversity of other habitats, both limestone related and wetland type. A feature of the lakes are the many islands. The site is the northern limit of the western limestones. The limestone pavement, which is one of the most important examples outside of the Burren, occurs in mosaic with good examples of dry heath and calcareous grassland rich in orchids. Alkaline fens and calcareous fens with *Cladium mariscus* are a feature of the marginal wetland vegetation and both are well represented. Alluvial forest is well-developed at Lough Mask, especially at Ballykine and Clonbur. A high concentration of rare plants is found at this site as well as it being important for amongst others Lesser Horseshoe Bat, Otter, wetland birds and White-clawed Crayfish.		
Lough Corrib pNHA [000297]	The pNHA includes not only includes Lough Corrib but also but also most of the main rivers and their tributaries that flow into the lake including the Clare, Grange, Abbert, Sinking, Dalgan and Black to the east, as well as the Cong, Bealanabrack, Failmore, Cornamona, Drimneen and Owenriff to the west. In addition to the rivers and lake basin, adjoining areas of raised bog, woodland, grassland and limestone pavement have also been incorporated into the site. The site supports a number of rare and important species including amongst others Otter, wetland birds and a population of Freshwater Pearl Mussel (*Margaritifera margaritifera*).	1.71km south southeast	National

Habitats

6.42 The application site comprises 19ha of an active quarry used for the extraction and processing of limestone, which supports a range of sub-habitat types created through quarrying operations or remnant patches of habitat that have not yet been stripped as part of the existing permitted development authorised by way of a substitute consent application (Reference PL 16.SU0132) and a 37L application (Reference QD 16.QD0009) granted by An Bord Pleanála (Area B) and under a Section 34 Application (Plan Ref. File No. 20/77/ ABP Ref: ABP-308748-20) (Area C) granted for the extraction of material to 5mOD. Area A comprises the southern section of the overall quarry site that extends to an area of 43.47 ha (Plan Ref File No. Q18). This existing working area benefits from a pre-1963 authorisation with conditions imposed following registration under Section 261 of the Planning and Development Act. Area A is not within the application site boundary. Refer to EIAR Plate 1.1.

6.43 The habitat types recorded within the application site based on the classification as defined by Fossitt (2000) are presented in Table 6.6.

Table 6.6: Habitat Types Recorded in the Application Site

Level 1 Habitat Hierarchy	Level 2 Habitat Hierarchy	Level 3 Habitat Hierarchy	Area / Length
E – Exposed rock and disturbed ground (but includes the sub-habitat types of ER2 – Exposed calcareous rock, ED2 – Spoil and bare ground, ED3 – Recolonising bare ground, FL8 – Artificial lakes and ponds, GS2 – Dry meadows and grassy verges and WS1 – Scrub)	ED – Disturbed ground	ED4 – Active quarries and mines	18.93ha

6.44 Figure 6.2 shows the location and extent of the habitats recorded at the application site and important habitats and other features identified immediately adjacent the application site. A summary description and ecological evaluation of each habitat, key sub-habitat and other key features is provided in Table 6.7.

Table 6.7: Description and Evaluation of Habitats and Other Features

Habitat Feature	Description	Location	Level of Value	Rationale
Exposed Rock and Disturbed Ground				
ED4 – Active quarries and mines (including *ER2 – Exposed calcareous rock*, *ED2 – Spoil and bare ground, ED3 – Recolonising bare ground and FL8 – Artificial lakes and ponds*)	*ED4 – Active quarries and mines* habitat is present throughout the application site and wider existing quarry site (Area A) that for the most part has been stripped of vegetation, top-soils and overburden leaving areas of *ER2 – Exposed calcareous rock*, *ED2 – Spoil and bare ground* and *ED3 – Recolonising bare ground* sub-habitat types as well as other remnant habitat areas including *GS2 - Dry meadows and grassy verges* and *WS1 – Scrub* discussed in more detail below. *ED2 – Spoil and bare ground* and *ED3 – Recolonising bare ground* habitats are present where vegetation and some soil stripping has taken place. The vegetation composition is similar in both the *ED2 – Spoil and bare ground* and *ED3 – Recolonising bare ground* habitats with only the percentage of bare ground the only distinguishing feature depending upon levels of disturbance. Species present include Sweet Vernal-grass, Daisy, Wild Carrot (*Daucus carota* spp *carota*), Yorkshire-fog, Soft Rush, Ribwort Plantain, Weld (*Reseda luteola*), Dandelion and Colt's-foot (*Tussilago farfara*). An ephemeral pond (*FL8 – Artificial lakes and ponds*) in the north east corner of the application site supports some Floating Sweet-grass (*Glyceria fluitans*), Joint Rush (*Juncus articulatus*), Water-	Application site and Area A	Local (lower)	An anthropogenic habitat created through quarrying with little botanical interest and offering some limited habitat for wildlife.

Habitat Feature	Description	Location	Level of Value	Rationale
	cress (*Rorippa nasturtium-aquaticum* agg.) and a stonewort (*Chara* sp.).			
Grassland and Marsh				
GS2 - Dry meadows and grassy verges	*GS2 - Dry meadows and grassy verges* habitat is present in the application site where it forms relatively small patches of unstripped vegetation and on the screening berms running along the northern and eastern boundaries of application site in Area A. The swards typically comprise of Sweet Vernal-Grass (*Anthoxanthum odoratum*), False Oat-grass (*Arrhenatherum elatius*), Cock's-foot (*Dactylis glomerata*) and Yorkshire-fog (*Holcus lanatus*) with Common Bent (*Agrostis capillaris*), Red Fescue (*Festuca rubra*) and Smooth Meadow-grass (*Poa pratensis*) also locally present. Other graminoid species include Common Sedge (*Carex nigra*) and Soft Rush (*Juncus effusus*) in localised areas. The herbaceous component includes: Yarrow (*Achillea millefolium*), Black Knapweed (*Centaurea nigra)*, Creeping Thistle (*Cirsium arvense*), Ribwort Plantain (*Plantago lanceolata*); Meadow Buttercup (*Ranunculus acris*); Dandelion (*Taraxacum officinale* agg.) and Common Nettle (*Urtica dioica*).	Application site and Area A	Local (lower)	Relatively small fragmented patches of vegetation subject to varying degrees of disturbance from existing quarrying operations. A common and widespread habitat with little botanical interest and of low ecological and nature conservation value.
Woodland and Scrub				

Habitat Feature	Description	Location	Level of Value	Rationale
WS1 – Scrub	Remnant patches of *WS1 – Scrub* habitat within the application site is typically dominated by Blackthorn (*Prunus spinosa*) and/or Grey Willow (*Salix cinerea*) with some Birch (*Betula pendula*), Hazel (*Corylus avellana*), Common Hawthorn (*Crataegus monogyna*), Dog-rose (*Rosa canina* agg.) and Bramble (*Rubus fruticosus* agg.) also occurring. Two patches of scrub in the south east corner of the application site are remnants of habitat historically recorded as *WN2 – Oak-ash-hazel woodland*. These areas of dominated by Hazel but with Blackthorn and Grey Willow also present along with a low number of semi-mature Ash (Fraxinus excelsior) also present. The ground and field floras can include: Maidenhair Spleenwort (*Asplenium trichomanes*), Daisy (*Bellis perennis*), Glaucous Sedge (*Carex flacca*), Black Knapweed, Wild Strawberry (*Fragaria vesca*), Ivy (*Hedera hibernica*), Perforate St John's-wort (*Hypericum perforatum*), Cat's-ear (*Hypochoeris radicata*), Oxeye Daisy (*Leucanthemum vulgare*), Hart's-tongue (*Phyllitis scolopendrium*) Primnrose (*Primula vulgaris*), Common Ragwort (*Senecio jacobaea*), Wood Sage (*Teucrium scorodonia*) and Common Dog-violet (*Viola rivinianna*) interspersed by small areas of exposed limestone (*ER2 – Exposed calcareous rock*).	Application site	Local (lower)	Relatively small fragmented patches of vegetation subject to varying degrees of disturbance from existing quarrying operations providing some limited opportunities wildlife.

Habitat Feature	Description	Location	Level of Value	Rationale
	Outside the application site *WS1 – Scrub* is present immediately adjacent the western and northern boundaries of the overall quarry site. Although scrub is the dominant habitat, it typically forms a mosaic with *ER2 – Exposed calcareous rock* and patches of *WN2 – Oak-ash-hazel* woodland. The scrub typically comprises of Common Hawthorn, Blackthorn and Hazel. Other woody species can include Sycamore (*Acer pseudoplatanus*), Ash, Holly (*Ilex aquifolium*), Honeysuckle (*Lonicera periclymenum*), Pedunculate Oak (*Quercus robur*) Rowen (*Sorbus aucuparia*) and Bramble. The ground floras where inspected appear similar to the areas of scrub dominated by Hazel within the application site.	Immediate surrounding area (TN1)	Local (higher)	Locally important mosaic of habitats providing opportunities for a wide range of species.
Freshwater				
FW3 – Canals	The Cong Canal (FW3 – Canals) runs along the eastern boundary of the overall quarry site that was designed to provide a navigable link between Lough Corrib and Lough Mask but was abandoned in the mid-1880s. The canal loses water to groundwater and is often referred to as the 'Dry Canal' with it being dry for an average of 90 days per year. The canal has a channel width of approximately 15m with *WS1 – Scrub* habitat adjacent on the land between the canal and the screening berm running along the eastern boundary of the quarry site.	Immediate surrounding area (TN2)	Local (higher)	An anthropogenic habitat created through quarrying with little botanical interest and offering some limited habitat for wildlife.

Habitat Feature	Description	Location	Level of Value	Rationale
	At the time of the survey the canal was in flow and some areas of adjacent land subject to inundation. The *WS1 – Scrub* habitat is dominated by Common Hawthorn and Grey Willow interspersed by some *WN6 – Wet willow-alder-ash woodland* and *ER2 – Exposed calcareous rock*. Where access was possible the vegetation included Creeping Bent (*Agrostis stolonifera*), Meadowsweet (*Filipendula ulmaria*), Soft Rush, Water Mint (*Metha aquatica*), Silverweed (*Potentilla anserina*) and Curled Dock (*Rumex crispus*) indicative of damp conditions with some Reed Canary-grass (*Phalaris arundinacea*) along the margins of the canal.			

Species

6.45 Details of protected, rare and notable species records within a 2km radius of the application site (encompassing grid squares M15H, M15I, M15M and M15N) were obtained during the desk-based study and during the Habitat Survey, where general observations and searches were made for the presence, or potential presence of protected, rare and/or notable species for flora and fauna.

6.46 Table 6.8 provides a summary of species of importance and an evaluation of the site for these species.

Table 6.8: Identification and Evaluation of Species

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rational
Flora				
Protected, rare and notable species	No records of protected or rare species of flora were returned by NBDC for the search area. NBDC return records for six species of bryophyte species of Rose-moss (*Rhodobryum roseum*) red Listed[7] as Near Threatened and Roseetti's Pouncewort (*Cololejeunea rossettiana*), Common Feather-moss (*Eurhynchium praelongum*), Depressed Feather-moss (Taxiphyllum wissgrillii), Fox-tail Feather-moss (*Thamnobryum alopecurum*) and Rock Pocket-moss (*Fissidens dubius*) as Lease Concern. None of these records relate to the application site.	During the Habitat Survey no protected, rare or notable species of flora were recorded at, or immediately adjacent the application site.	Not applicable	All reasonable likelihood of absence.
Non-native invasive species	NBDC returned records for Giant-rhubarb (*Gunnera tinctoria*), Curly Waterweed (*Lagarosiphon major*) and Rhododendron (*Rhododendron ponticum*) all of which are non-	During the Habitat Survey no non-native invasive species were recorded as present in the application site.	Not applicable	All reasonable likelihood of absence.

[7] Lockhart, N., Hodgetts, N. & Holyoak, D. (2012). *Ireland Red List No.8: Bryophytes*. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rational
	native invasive species, as listed under the Wildlife Act 1976 (as amended) and/or the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).			
Mammals				
Badger	NBDC returned four records for Badger (*Meles meles*) within the search area all in excess of 1km of the application site.	During the Habitat Survey no evidence of badger setts or other signs of Badger were found to indicate the presence of this species (i.e. tracks, latrines, snuffle holes or hairs) within the application site, or its immediate surrounding area.	Not applicable	Not present.
Bat assemblage	NBDC returned records for eight species of bat including Daubenton's Bat (*Myotis daubentonii*), Natterer's Bat (*Myotis natteri*), Leilser's Bat (*Nyctalus leisleri*), Nathusius's Pipistrelle (*Pipistrellus nathusii*), Common Pipistrelle (*Pipistrellis pipistrellis*), Soprano pipistrelle (*Pipistrellus pygmaeus*); Brown Long-eared Bat (*Plecotus auritus*) and Lesser Horseshoe Bat. Lesser Horseshoe Bat have historically been recorded as roosting in Kelly's Cave, Cong	The application site does not support any buildings, structures, trees or features (i.e. fissure or crevices in the quarry walls) that are considered to offer potential and/or suitable bat roosting opportunities. The application site is assessed as providing low habitat suitability for commuting and foraging bats.	National	All bat species are fully protected under the Wildlife Act 1976 (as amended) and the EC (Birds and Natural Habitats) Regulations 2011 (as amended). The application site provides negligible roosting opportunities for bats. The application site provides some foraging habitat for a range of bat species, but is generally of low quality and which is already consented for removal. The application site is unlikely to be important or critical to any particular species of bat, or for the maintenance of the local population status of any bat

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rational
	approximately 1km south east of the application site. Bat surveys carried out by EcoHort to inform the application for substitute consent for Area B of the quarry in 2015 recorded Daubenton's Bat, a *Myostis* spp. Soprano Pipistrelle and Lesser Horseshoe Bat commuting and foraging within 100m of the overall quarry site. The application site and its immediate surrounding area lie in an identified with a high index suitability for all bat species with a score of 52.			species given the high quality habitat within the wider surrounding environment. However because the site sits in an landscape with high value for bats the evaluation is based in the context of the surrounding landscape.
Red Squirrel	NBDC returned 14 records for Red Squirrel (*Sciurus vulgaris*) within the search area the closest of which was recorded in woodland south of the Area A.	The application site no longer supports any habitat considered likely to be used by Red Squirrel and no evidence of the presence of this species was found during the survey.	Not applicable	Not present.
Pine Marten	NBDC returned 11 records for Pine Marten (*Martes martes*) within the search area the closest of which was recorded in the woodland south of the R345 Regional Road.	The application site no longer supports any habitat considered likely to be used by Pine Marten and no evidence of the presence of this species was found during the survey.	Not applicable	All reasonable likelihood of absence.
Otter	NBDC returned four records for Otter (*Lutra lutra*) within the search area. None of these records relate	During the Habitat Survey no evidence of Otter was recorded within the application site. However,	Local (higher)	The otter is fully protected under the Wildlife Act 1976 (as amended) and the

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rational
	to application site or its immediate surrounding area. As part of field surveys carried out to inform the Section 34 planning application for the quarry evidence of Otter was recorded with a spraint found within a 100m buffer around the overall quarry site.	the adjacent Cong Canal and its associated corridor running along the eastern boundary of the overall quarry site provides suitable habitat for this species.		EC (Birds and Natural Habitats) Regulations 2011 (as amended). The application site provides negligible opportunities for otter but lies immediately adjacent the Cong Canal which has the potential to be used by Otter as corridor for the movement between Lough Corrib and Lough Mask when in flow.
Other mammal species	NBDC returned 11 records for Hedgehog (*Erinaceus europaeus*), three records for Irish Hare (*Lepus timidus* ssp. *hibernicus*) and Fox (*Vulpes vulpes*), two records for Bank Vole (*Myodes glareolus*), and solitary records for Wood Mouse (*Apodemus sylvaticus*), Red Deer (*Cervus elaphus*) and Irish Stoat (*Mustela erminea* ssp. *hibernica*) within the search area. In addition, a solitary record was returned for American Mink (*Mustela vison*) an invasive species listed the European Communities (Birds and Natural Habitats) Regulations 2011, within the search area.	During the Habitat Survey no mammals were observed within the application site. Whilst the site has the potential to support a number of other small mammals, no evidence was found to indicate the presence of any protected species of mammal.	Local (lower)	The application site provides some localised value to small mammals but is not likely to be critical in maintaining the local population status of any particular species

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rational
	None of these records relate to the application site or its immediate surrounding area.			
Birds				
Bird assemblage	NBDC returned records for 52 species of birds for the search area that includes Kingfisher (*Alcedo atthis*) that is listed under Annex I of the EU Birds Directive. Historically, Peregrine Falcon (*Falco peregrinus*) has been recorded at and breeding in Area A of the overall quarry site.	The habitats present in the application site provide limited opportunities for birds except those typically associated with quarries. During the Habitat Survey a total of 19 species of birds were recorded visually and/or aurally at and in the vicinity of the application site. Of the species recorded Peregrine Falcon is listed under Annex I of the EU Birds Directive. One of the bird species recorded is red listed[8] and one is amber listed[9] Birds of Conservation Concern in Ireland (BoCCI)[10]. A full list of the birds recorded during the Habitat Survey and their conservation status is provided at Appendix 6B.	Local (higher)	Protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000. Peregrine Falcon have historically bred at the existing quarry as a result of the habitat created through quarrying operations. However, this species has a widespread distribution in Ireland and is no longer a species of conservation concern. In 2018 it was estimated that there was over 400 breeding pairs of Peregrine Falcon in Ireland and the breeding pair at the quarry represents 0.5% of the national breeding population. The application site provides breeding and foraging opportunities for a range of typically common and widespread species associated with quarries and

[8] Red list species are those that are Globally Threatened according to IUCN criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and not shown a s substantial recovery

[9] Amber list species are those with an unfavourable conservation status in Europe; those whose population or range has declined moderately in recent years; those whose populations has declined historically but made a substantial recovery; rare breeders; and those with international important or localised populations.

[10] Gilbert G, Stanbury A and Lewis L. (2021). *Birds of Conservation Concern in Ireland 2020 –2026*. Irish Birds 43: 1–22

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rational
		The application site has fragments of habitat providing some limited opportunities for breeding birds but which are subject to high levels of disturbance.		disturbed habitats but is not likely to be important or critical for any particular individual species or local populations of birds. However because the site sits in an landscape with high value for birds the evaluation is based on the surrounding areas of habitat.
Reptiles				
Common lizard	NBDC returned no records for Common lizard (*Zootoca vivipara*) within the search area.	Although common lizard is a species that can be found in wide range of habitats, the application site provides sub-optimum habitat for this species. No common lizards were observed during the Habitat Survey and it is considered that this species is not likely to be present at this site.	Not applicable	All reasonable likelihood of absence.
Amphibians				
Common Frog	NBDC returned four records for Common Frog (*Rana temporaria*) within the search area. None of these records relate to the application site and its immediate surrounding area.	During the Habitat Survey tadpoles of Common Frog were recorded in the ephemeral pool in the north east corner of the application site. In addition, tadpoles were recorded in another pool outside and north of the application site with two adult Common Frog also observed adjacent to the Cong Canal also north of the application site.	Local (higher)	Protected under the Wildlife Act 1976 (as amended). A typically common and widely distributed species in Ireland and Co. Mayo with the application site likely to support a low population size class of this species.

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rational
Smooth Newt	NBDC returned three records for Smooth Newt (*Lissotriton vulgaris*) within the search area. None of these records relate to the quarry site and its immediate surrounding area.	During the Habitat Survey no Smooth Newts or evidence of breeding, i.e. eggs or efts, were observed within the application site, wider quarry site and in the pool to the north of the application site.	Not applicable	All reasonable likelihood of absence.
Invertebrates				
Invertebrates	NBDC returned records for one protected invertebrate species within the search area, namely Marsh Fritillary Butterfly (*Euphydryas aurinia*) listed under Annex II of the Habitats Directive. Other notable species recorded in the search area including: the red listed butterflies[11] of the Near Threatened Dingy Skipper (*Erynnis tages*) and Grayling (*Hipparchia semele*) and the Endangered Wall (*Lasiommata megera*); the red listed bees[12] of the Near Threatenend Large Red-tailed Bumble Bee (*Bombus lapidaries*) and Moss Carder-bee (*Bombus muscorum*);	During the Habitat Survey no rare or notable species of invertebrate were observed within the application. The application site does not support any Devil's-bit Scabious (*Succisa pratensis*) the key food plant of larval Marsh Fritillary Butterfly. Whilst no site is without invertebrate interest, it is considered not likely, given the habitat types present and the levels of disturbance, that the application site would support any protected invertebrate species.	Local (lower)	The site provides potential habitat for a wide range of invertebrates but is unlikely to be important or critical to any particular species or taxonomic group given the availability of alternative habitat in the wider surrounding area.

[11] Regan, E.C., Nelson, B., Aldwell, B., Bertrand, C., Bond, K., Harding, J., Nash, D., Nixon, D., & Wilson, C.J. (2010). *Ireland Red List No. 4 – Butterflies*. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Ireland.

[12] Ú. Fitzpatrick, T.E. Murray, A. Byrne, R.J. Paxton & M.J.F. Brown (2006). *Regional Red List of Irish Bees*. Report to National Parks and Wildlife Service (Ireland) and Environment and Heritage Service (N. Ireland).

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rational
	the red listed mayflies[13] of the Near Threatened Brown May Dun (*Kangeronia fuscogrisea*) and the Endangered Dark Olive (*Labiobaetis atrebatinus*); and red listed of molluscs[14] of the Vulnerable Point Snail (*Acicula fusca*), Heath Snail (*Helicella itala*), English Chrysalis Snail (*Leiostyla anglica*) red and the Endangered Plated Snail (*Spermodea lamellata*). NBDC also returned a solitary record for Zebra Mussel (*Dreissena polymorpha*) within the search areas which is a non-native invasive species, as listed under the Wildlife Act 1976 (as amended) and/or the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).			
Other Important Species				
Other species not identified above	NBDC did not return any records for any other rare or notable species within the search area	During the Habitat Survey, no other protected, rare or notable species were recorded.	Not applicable	All reasonable likelihood of absence

[13] Kelly-Quinn, M. & Regan, E.C. (2012). *Ireland Red List No. 7: Mayflies (Ephemeroptera)*. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.
[14] Byrne, A., Moorkens, E.A., Anderson, R., Killeen, I.J. & Regan, E.C. (2009). *Ireland Red List No. 2 – Non-Marine Molluscs*. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rational
		Though the application site may support low numbers of common and widespread species it is considered highly unlikely that any other specially protected species would be present based on the habitats present.		

Summary of Important Ecological Features

6.47 In accordance with the CIEEM guidelines only ecological features considered to be important should be carried forward to any detailed assessment. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable. Therefore where receptors have been evaluated at a value of '*Local (lower)*' no further assessment is deemed necessary as the impact on these receptors is not likely to be of significance. However, where protected species are present and there is a potential for a breach in wildlife legislation then these species are considered as important ecological features regardless at what level they have been evaluated.

6.48 Based on the above, the identified important ecological features with the potential to be affected by proposed extension to the limestone quarry at Cregaree and carried forward for further ecological impact assessment are detailed in Table 6.9.

Table 6.9: Identified Important Ecological Features

Key Feature	Important Ecological Feature	Evaluation
Designated Sites	Lough Carra/Mask SAC	International
	Lough Carra/Mask pNHA	National
	Lough Corrib SAC	International
	Lough Corrib SPA	International
	Lough Corrib pNHA	National
Habitats	WS1 – Scrub (Scrub Mosaic)	Local (higher)
	FW3 – Canals (Cong Canal)	Local (higher)
Species	Bats	National
	Otter	Local (higher)
	Bird assemblage	Local (higher)
	Common Frog	Local (higher)

Potential Effects

6.49 This section assesses the ecological impacts from the proposed deepening within the application area at the existing quarry at Cregaree on important ecological features identified from the preliminary desk-based study, baseline surveys and evaluation of the ecological features. Both qualitative and quantitative information has been used to identify likely significant ecological impacts, including the positive, negative, direct, indirect and the cumulative environmental effects.

6.50 To assess the effects of the proposed scheme it is essential that the impacts that could arise are identified and characterised. The impacts that require consideration in the EcIA are based upon knowledge of the proposed development and of the important ecological features. This can only be undertaken with a thorough understanding of ecological processes and how flora and fauna react to the range of impacts that could occur.

Proposed Development

6.51 A detailed description of the development is presented in Chapter 3 of the EIAR, but in summary the project relates to a planning application for the deepening of an existing operational limestone quarry in the townland of Cregaree within an overall application area of c. 19ha. Planning permission specifically sought for the following:

- the deepening of 19ha of existing permitted quarry extraction area from 5mOD to -12mOD;
- haulage of material to existing fixed plant within the main quarry for processing;
- all associated ancillary facilities / works; and
- the landscaping and restoration of the site upon cessation of extraction operations.

6.52 The extraction system will continue to use blasting to fragment the limestone prior to its processing using mobile crushing and screening plant within the quarry void to produce a range of aggregate materials. The frequency of the blasting operation on the entire quarry is limited to not more than four production blasts per month, as per Condition 5 of Reference QD 16.QD0009 and Condition 6 of Plan Ref. File No. 20/77/ ABP Ref: ABP-308748-20. Processed rock will be stored in the existing permitted quarry area pending use in the ancillary manufacturing plants (concrete batching plant, lime plant, calcium carbonate plant and asphalt plant) on site or sale off site.

6.53 The quarry will extract of an estimated 7 million tonnes of mineral reserves over an operational period of 25 years, dependent upon the market demand for extracted material.

6.54 Upon cessation of extraction operations the site will be restored to natural habitats.

Identification and Characterisation of Potential Impacts

6.55 The potential ecological impacts from the proposed deepening of the existing quarry at Cregaree fall into two main categories:

- impacts arising from the operation of the limestone quarry from its deepening from the currently consented depth of 5mOD to -12mOD (operational phase); and
- impacts arising from the restoration of the site (post-operational phase).

6.56 The current consented quarrying operations includes the stripping of all vegetation, topsoils and overburden and the extraction and processing of rock to a depth of 5mOD. Therefore no additional preparation of the will be required to be carried as part of any proposed deepening and on-going extraction of limestone at this site.

Potential Impacts and Interaction with Important Ecological Features (Operational Phase)

6.57 The sources of potential impacts arising from the proposed deepening of the application area at the existing quarry at Cregaree and the relevant important ecological features which are likely or have the potential to be directly or indirectly affected from any particular impact source based on the potential zone of influence of the development, in the absence of mitigation are outlined in Table 6.10.

6.58 The deepening of the existing quarry will not result in any loss of habitat within the application site over and above that has already been consented through existing planning permissions. Therefore the sources of potential impacts have been based on the assumption that the application site will have been worked to a depth of 5mOD and which was previously

assessed in previous Environmental Impact Assessment carried out to inform all such planning applications.

6.59 Where protected species are present, the quarry has an existing responsibility to ensure that all consented quarrying operations comply with relevant statutory legislation to ensure the protection of these species for example breeding birds and common frog.

Table 6.10: Sources of Potential Impacts and Important Ecological Potentially Affected

Impact Source	Nature of Impact	Important Ecological Feature Potentially Affected
Disturbance from human activity, noise and vibration	Increases in disturbance, as a result of human activity can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing. The response of individual species to increased levels of human disturbance will depend upon a number of factors including the sensitivity, reproductive status, previous exposure to human disturbance, behaviour during the event, species tolerance to disturbance, location in relation to the source, availability of alternative nearby habitat, and environmental factors (i.e. topography, vegetation and atmospheric conditions which can influence noise levels). The level of disturbance will also be dependent upon the existing ambient noise levels and maximum noise levels. <u>Noise</u> It is generally accepted that for noise, certain species or groups of species can be impacted upon up to a distance of up to 300m from its source for high level and discontinuous disturbance with these distances reducing for low level and/or continuous disturbance levels. This is therefore adopted as the zone of influence. Evidence suggests that in general wildlife, with the exception of the most sensitive species, will adjust and tolerate long-term increases in low-medium-level and continuous noises. Guidance published under AQTAG09[15] indicates that where noise levels are below 80dB LA_{max} and 55dB $LA_{eq,1hr}$ as measured at a nest site for birds or other	Bats Otter Bird assemblage

[15] Ormerod, L., Goodlad, N. and Horton, K. (2005). A*QTAG09 – Guidance on the Effects of Industrial Noise on Wildlife*. Air Quality Technical Advisory Group

	feature used by wildlife it is considered unlikely that it will have an adverse impact on any such species. Visual Disturbance Visual disturbance from human activity can include the movement of people, machinery and plant and which can result in the disturbance of species by causing increased anxiety and flight due to perceived danger. The response to visual disturbance is highly variable between species, threat type and habituation to human contact and can typically range from 50 to 500m although for many species this is generally below 300m in open situations. Vibration Any blasting operations have the potential to generate vibration. Studies into the effects of blasting on nesting falcons indicate that quarry blasting initiated flight up to 500m from the point source of any blast. This is therefore adopted as the zone of influence. The maximum distances at which vibration from other operational sources may be just perceptible to humans is between 30 to 50m from its source and this is likely to be similar for most groups of species. Whilst it is generally recognised vibration can disrupt wildlife the effect of vibration are usually masked by other disturbance and noise. It is likely that any species sensitive to increase noise will also be sensitive to vibration whilst less sensitive species to noise are likely to tolerate levels of vibration.	
Lighting	Permanent fixed on-site lighting could provoke long-term behaviour changes in sensitive species, especially but not limited nocturnal animals that may have remained on and continue to use the site, or parts of the site and its immediate surrounding area. The zone of influence will be dependent upon the siting of any lamps, direction of illumination and potential overspill in areas of outside the proposed development.	Bats
Dust deposition	Traffic movements, the extraction, handling and stockpiling of aggregates and other associated works have the potential to generate dust. Literature suggests that the most sensitive species area to be affected by dust deposition at levels	Scrub mosaic Bats Bird assemblage

	above 1000 mg/m^2/day[16] which is five times greater than the level at which most dust deposition may start to cause a perceptible nuisance to humans. Fugitive dust from mineral extraction sites is typically deposited within 100-200m of the source; the greatest proportion of which, comprising larger particles (greater than 30 microns) is deposited within 100m[17]. Where large amounts of dust are deposited on vegetation over a long time-scale (a full growing season for example) there may be some adverse effects upon plants restricting photosynthesis, respiration and transpiration. Furthermore it can lead to phytotoxic gaseous pollutants penetrating the plants. The overall effect would be a decline in plant productivity, which may then have indirect effects on the quality of the surrounding habitats and associated fauna. The amounts of dust deposited and its effects are also dependent upon weather conditions as in wet weather less dust will be generated and that which has been deposited upon foliage is likely to be washed off. In accordance with guidance produced by the UK Institute of Air Quality Management (IAQM)[18] an assessment of the effects of dust will normally only be required where an ecological receptor occurs within 250m of sand and gravel extraction operations, or 400m for hard rock quarries, this is therefore defined as the zone of influence.	
Alterations to hydrogeological and hydrological conditions	Mineral extraction operations have the potential to cause alterations to hydrological regimes of surface water bodies through the extraction of minerals and direct loss of surface waters or through the discharge of wastewater to surface waters especially where dewatering is required to ensure the continued operability of working areas. Abstraction of groundwater or de-watering operations can result in the drawdown of groundwaters. The extent of the effects of drawdown can be influenced upon the local geology, soils, topography and climate.	Lough Carra/Mask Complex SAC / pNHA Lough Corrib SAC / SPA / pNHA Cong Canal

[16] Farmer, A.M. (1993). *The Effects of Dust on Vegetation - A Review*. Environmental Pollution Vol.79, Issue 1, Pages 63-75.
[17] Department of the Environment (1995). *The Environmental Effects of Dust from Surface Mineral Workings*. Volume 1: Summary Report & Best Practice Guides. HMSO.
[18] IAQM (2016). *Guidance on the Assessment of Mineral Dust Impacts for Planning*. Version 1.1 dated May 2016. Institute of Air Quality Management, London.

	Changes in localised groundwater levels or in aquifers as a result of extraction of minerals can have direct and indirect ecological impacts on groundwater dependent terrestrial ecosystem (GWDTE) and associated species as well as on surface waters where groundwaters have hydraulic connectivity with any surface waters. The potential zone of influence of the proposed development will be dependent upon a number of factors related to the existing hydrogeological and hydrological conditions, the nature of mineral extraction operations and the requirements and rates of any dewatering operations and discharge of wastewater.	
Changes in water quality (ground and surface waters)	Contamination of groundwater can occur through the direct recharge of groundwaters close to the ground surface, or of deeper aquifers through percolation and other hydrological pathways that may affect surface waters (where there is a potential ground and surface water hydraulic connectivity). Quarrying operations near water have an associated risk of pollution as a result of fuel spillages, oil leakages and other accidents that could lead to a serious impact on water quality and consequently the habitats and species present in any such affected watercourse. Surface water discharges and diffuse pollution from surface water run-off can contribute to a reduction in water quality through a net contribution of nutrients or contamination from a wide range of organic and inorganic compounds.	Lough Corrib SAC / SPA / pNHA Cong Canal

Potential Impacts and Interaction with Important Ecological Features (Post-Operational Phase)

6.60 No sources of potential significant adverse impacts are considered likely on important ecological features over and above those arising during the operational phase of the proposed development.

6.61 The restoration of the site to natural habitats is likely to have a positive and beneficial effect on wildlife. The level and significance of any effects cannot be quantified at this current time for any individual or groups of species but are likely to be beneficial and positive at a Local (higher) value. As the effects from the restoration are considered likely to be generally positive, no further assessment is deemed necessary in respect of the post-operational phase.

Assessment of Effects and Mitigation Measures

6.62 Table 6.11 details the assessment of predicted effects on the identified and relevant important ecological features from the proposed deepening of the application area within the existing quarry at Cregaree and mitigation measures to prevent, reduce or offset any potential effects.

Table 6.11: Assessment of Effects on Identified and Relevant Important Ecological Features (Operational Phase)

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Lough Carra/Mask SAC / pNHA		
Alterations to hydrogeological and hydrological conditions	<u>Assessment of Effects</u> The quarry at Cregaree lies within a highly karstified landscape characterised by numerous karst features such as springs, swallow/sinkholes, sinking streams, turloughs and caves. The quarry is underlain by the Cong-Robe Groundwater Body (GWB) defined as a regionally important karst (conduit) aquifer. Mapped underground water flows using tracer tests have shown that at the location of the quarry flows are in enlarged conduits from Lough Mask towards Lough Corrib. However, the geological formation of the Carboniferous limestone bedrock (Cong Formation) at the quarry site is a different type to the adjacent Lower Carboniferous limestone (Cong Canal Formation) that is more easily dissolved by rainfall. As a result of this difference in bedrock no conduit karst has been encountered in the operation of the quarry to date to the bedrock level of 5mOD and no groundwater or conduit transit zones have been encountered through historical probing of the site to elevations of -20mOD to -40mOD, the drilling of four core holes to a depth of -181mOD and the drilling of 52 site investigation boreholes. Best scientific information would therefore suggest that karst flows, if present, could be well below the -12mOD proposed depth of the quarry. The quarrying operations at the existing quarry have not resulted in any groundwater strikes and none are anticipated to be encountered by the deepening of the application area within the existing quarry to -12mOD. The main ingress of water to the quarry is from rainfall and its flow in the subsoil/bedrock transition zone from the immediate surrounding area following rainfall events. The Cong Canal east of the quarry site is at an elevation of approximately 20mOD. However, given that Cong Canal recharges to groundwater along its entire length except during the highest groundwater conditions it would be expected that large volumes of water would potentially enter	Not significant

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
	the quarry through the recharge to groundwater. However, this does not occur and there is no ingress of groundwater to the quarry from this waterbody. The screening berm along the eastern boundary of the quarry site and the Cong Canal has disconnected the quarry from the land identified on historical maps as liable to flood. The application site is therefore considered to be hydrogeologically and hydrologically discrete to Lough Mask otherwise it would fill with water. Therefore no alterations are predicted on the hydrogeological and hydrological regime of this waterbody from the deepening of the existing quarry.	
	<u>Mitigation</u> No specific ecological mitigation is required as impact is assessed as not significant.	
Lough Corrib SAC / SPA / pNHA		
Alterations to hydrogeological and hydrological conditions	<u>Assessment of Effects</u> Lough Mask and Lough Corrib are hydrologically linked via the Cong Canal. In addition, a massive amount of groundwater flows from the direction of Lough Mask discharging to the Lough Corrib through enlarged conduits. As described previously, the quarry has not encountered any groundwater strikes and none are anticipated through the deepening of the quarry where there would be any alterations to the hydrogeological and hydrological regime of Lough Corrib. The deepening of the quarry will not require any changes to Discharge Licence W391/05 R1 issued by Galway County Council in 2019 for the volume of water discharged currently consented to the Cong Canal and no changes in the hydrological regime are predicted for Lough Corrib.	Not significant
	<u>Mitigation:</u> No specific ecological mitigation is required as impact is assessed as not significant.	

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Changes in water quality (ground and surface waters)	<u>Assessment of Effects:</u> The application site is underlain by the Cong-Robe GWB that is assessed under the Water Framework Directive (WFD) as being of Good status (2016-2021). The surface waters of Lough Corrib are assessed as oligotrophic / mesotrophic and being of Good status under the WFD (2016-2021) and with 'high' water quality (2009). Incidental rainfall and groundwater seepages entering the proposed quarry are directed to a sump in the floor of the existing quarry. Water is then pumped to an existing concrete settlement lagoon, comprising a series of chamber with internal baffles to regulate flow and allow the settlement of suspended solids, located on the upper rim of the quarry on the south eastern boundary of the quarry site. Treated effluent is then discharged from the settlement lagoon to the Cong Canal under discharge licence W391/05 R1. Monitoring of water discharged from the quarry indicates that it has complied with the parameters listed under Discharge Licence W391/05 R1 with the exception of one exceedance for Ammonia N in December 2024 and one exceedance for COD in April 2023. The exceedance for Ammonia was not linked to ammonia nitrates used in the explosives on site where the concentration of residual nitrogen compounds sampled in the quarry are less that 1mg/l N and below the threshold values In the European Communities Environmental Objectives (Groundwater) Regulations 2010. The deepening of the quarry will not require any changes or modifications water management system or to the existing discharge licence. Based on current baseline environmental conditions of the surface waters of Lough Corrib the existing quarry operations have not resulted in any significant deterioration in water quality or in the WFD status of Lough Corrib through any interaction between ground and surface waters. The continuation of the discharge from the quarry site through the deepening of the quarry is not predicted to affect water quality in groundwaters flowing to Lough Corrib, the quality of surface water in the Cong Canal which outflows into Lough Corrib or of the surface waters of Lough Corrib itself.	Not significant

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
	<u>Mitigation:</u> No specific ecological mitigation is required as impact is assessed as not significant.	
Scrub Mosaic		
Dust deposition	<u>Assessment of Effects:</u> Dust deposition monitoring undertaken on a quarterly based, conditioned by planning consent, would indicate dust levels generated from the quarry site and association infrastructure of the quarry are typically below 350mg/m^2/day under guidelines published by the Department of the Environment, Heritage and Local Government (DoEHLG) for dust deposition at extraction sites[19]. There have been occasions however, where these threshold limits have been exceeded at any particular monitoring location (maximum peak recorded 741mg/m^2/day confirmed without other contamination of sample), but are still well below the 1000mg/m^2/day the levels when sensitive species are likely affected by dust deposition. The dust generated at the quarry is considered to be inert and will not result in any chemical reactions or toxicological effects to plants associated with scrub mosaic that includes areas of exposed limestone and patches of broadleaved woodland. The deepening of the quarry is not predicted to result in any increase in dust deposition from the quarrying operations at this site and no effects are predicted on the structure and plant communities that form the scrub mosaic habitat in the immediate surrounding area and within the 400m zone of influence of quarrying operations in the application site.	Not significant
	<u>Mitigation:</u> No specific ecological mitigation is required as impact is assessed as not significant.	

[19] DoEHLG (2004). *Quarries and Ancillary Activities - Guidelines for Planning Authorities*. Department of the Environment, Heritage and Local Government.

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Cong Canal		
Alterations to hydrogeological and hydrological conditions	<u>Assessment of Effects:</u> The canal loses water to groundwater and is often referred to as the 'Dry Canal' with it being dry for an average of 90 days per year. However, it still has total annual flows that range from 500,000,000 to >715,000,000m^3/yr. However, as described previously under the assessment for Lough Carra/Mask Complex SAC / pNHA, the Cong Canal with an elevation of approximately 20mOD does not result in any ingress of groundwater to the quarry and is considered to be hydrogeologically discrete from the quarry site. Therefore the deepening of the quarry is not predicted to result in any changes to the hydrological regime of this waterbody. Although the screening berm along the eastern boundary of the quarry site and the Cong Canal has disconnected the quarry from the land liable to flood, there is still a hydrological connection through the discharge of treated effluent from the quarry to the Cong Canal. The average daily discharge volume from the quarry is 2,145 m^3/d with a peak discharge rate of 7,347 m^3/d recorded In January 2024. The deepening of the quarry is not anticipated to result in any significant increase in the average daily volume of water to the Cong Canal and no changes are predicted to the hydrological regime of this waterbody.	Not significant
	<u>Mitigation:</u> No specific ecological mitigation is required as impact is assessed as not significant.	
Changes in water quality (ground and surface waters)	<u>Assessment of Effects:</u> The Cong Canal_010 is assessed as being of 'good' quality status up and downstream of the proposed development site under the Water Framework Directive (WFD) (2016-2021). The EPAs latest assessment of water quality for the Cong Canal shows it has a Q-rating of Q4 (Good) at the river station in Cong(2021) and downstream of the discharge from the quarry site.	Not significant

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
	Based on current baseline environmental conditions of the surface waters of the Cong Canal the discharge of treated effluent (water from the floor of the quarry) from the quarry has not resulted in any significant deterioration in water quality or in the WFD status of this waterbody. The deepening of the quarry and the continuation of the discharge is not predicted to affect water quality in the Cong Canal.	
	<u>Mitigation:</u> No specific ecological mitigation is required as impact is assessed as not significant.	
Bats		
Disturbance from human activity, noise and vibration	<u>Assessment of Effects:</u> There is very little literature about the effects of disturbance on bats. However, it is believed that bats are able to tolerate very loud sounds, at least within the ultrasonic range, based on the loud sounds produced when echolocating. A study examining the impacts of a range of stimuli, such as noise, light, temperature change and tactile disturbance on six different bat species during hibernation concluding that only tactile stimuli were significant[20]. The deepening of the quarry is not predicted to result in noise levels above 55dB in the immediate surrounding area and within the 300m zone of influence of quarrying operations in the application site. At these levels, no significant impact is predicted on any bat species and roosting site that may be present within the zone influence of the quarry. The extraction system will continue to use blasting to fragment the limestone prior to its processing using mobile crushing and screening plant within the quarry void to produce a range of aggregate materials. The frequency of the blasting operation on the entire quarry is limited to not more than four production blasts per month, as per Condition 5 of Reference QD 16.QD0009 and Condition 6 of Plan Ref. File No. 20/77/ ABP Ref: ABP-308748-20.	Not significant

[20] Speakman, J. R., Webb, P. I & Racey, P. A. (1991). *Effects of Disturbance on the Energy Expenditure of Hibernating Bats*. J. Appl. Ecol. 28: 1087-1104.

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
	Maximum blast measures taken from 2021 to 2024 show that the Peak Particle Velocity (PPV) of any groundborne vibration ranges from 1.1 to 5.0mm/second and Air Over Pressure of 109 to 123dB(L) and within emission limit values recommended by the EPA of 12mm/second for PPV and 125dB for Air Over Pressure. The deepening of the quarry is not predicted to increase the levels of vibration however, the direction of vibration may change as the quarry gets deeper. However, the PPV is predicted to remain below 6mm/second and there would be no discernible surface vibration or noise from Air Over Pressure that would result in any disturbance to any potential bats that may be roosting in the immediate surrounding area and within the 500m zone of influence of quarrying operations in the application site. The deepening of the application area within the existing quarry is not predicted to result in an increase in disturbance where there will be any effects on individual bats or on their conservation status of any bat species.	
	<u>Mitigation:</u> No specific ecological mitigation is required as impact is assessed as not significant.	
Lighting	<u>Assessment of Effects:</u> The deepening of the existing quarry will not result in any additional lighting or would result in any overspill of illumination of adjacent potential bat foraging and commuting habitat immediately adjacent the application site.	Not significant
	<u>Mitigation:</u> No specific ecological mitigation is required as impact is assessed as not significant.	
Dust deposition	<u>Assessment of Effects:</u> Dust deposition levels from the deepening of the existing quarry is not predicted to be at levels where any potential foraging habitat or its associated invertebrate assemblage, with the potential to provide prey for bats species, within the immediate surrounding area of the application site will be directly impacted and no indirect effects on bats is predicted.	Not significant

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
	<u>Mitigation:</u> No specific ecological mitigation is required as impact is assessed as not significant.	
Otter		
Disturbance from human activity, noise and vibration	<u>Assessment of Effects:</u> It is recognised that assessing the impacts of disturbance to otter, which is often elusive, is difficult and that there are no environmental standards that can be applied for this species, unlike human beings. However, evidence would suggest that otters are not significantly affected by high levels of human disturbance[21], provided there is sufficient bank-side habitat providing opportunities for the animals to hide and rest without the fear of being disturbed. Based on noise levels from the deepening of the quarry predicted to be below 55dB and that the Cong Canal is screened from the quarry by a large berm running along the eastern boundary of the quarry site no effects are predicted on otters that may be present and using the Cong Canal.	Not significant
	<u>Mitigation:</u> No specific ecological mitigation is required as impact is assessed as not significant.	
Bird Assemblage		
Disturbance from human activity, noise and vibration	<u>Assessment of Effects:</u> The deepening of the existing quarry is not anticipated to increase the overall levels of disturbance at the quarry or within the wider surrounding area. The direction of any disturbance is also not expected to change from current baseline. Any species recorded at the quarry and wider surrounding area are already likely to be habituated to noise, other human disturbance and vibration from the existing quarry. This includes peregrine falcon which has historically bred in the southern part of the quarry site. Therefore no significant	Not significant

[21] Chanin P (2003). *Ecology of the European Otter.* Conserving Natura 2000 Rivers Ecology Series No. 10. English Nature, Peterborough.

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
	effects are predicted on the overall population status of any bird species at and within the local surrounding area from the deepening of the existing quarry.	
	<u>Mitigation:</u> No specific ecological mitigation is required as impact is assessed as not significant.	
Dust deposition	<u>Assessment of Effects:</u> Dust deposition levels from the deepening of the existing quarry is not predicted to be at levels where any potential nesting habitat or food sources within the immediate surrounding area of the application site would be directed affected and no indirect effects on the overall population of any bird species is predicted.	Not significant
	<u>Mitigation:</u> No specific ecological mitigation is required as impact is assessed as not significant.	

Ecosystem Services

6.63 The application site at this current time is not considered to provide any ecosystem services in terms of provisioning, regulating, supporting or cultural services taking into account that existing habitats, soils and overburden are consented to be removed.

6.64 Through the restoration of the site to natural habitats there is likely to be some regulating services although based on the scale and nature of the site this is likely to be limited and therefore the ecosystem services provided are not likely to be significant or important in the locality of the existing quarry site or its immediate wider surrounding area.

Cumulative Effects

6.65 There are no other known planning applications, activities or proposed activities at, or within close proximity to the application site that would be likely to result in any significant cumulative impacts on important ecological features, on the biodiversity of the local area at this current time. It is therefore considered that no significant cumulative ecological impacts would occur.

Ecological Enhancement and Compensation

6.66 No recommendations for ecological enhancement and/or compensation are deemed necessary as part of the proposed deepening within the application area within the existing quarry at Cregaree.

Monitoring

6.67 No specific ecological monitoring is deemed necessary for the proposed deepening within the application area within the existing quarry at Cregaree .

Legal and Policy Implications

Legal Implications

6.68 The proposed deepening within the application area within the existing quarry at Cregaree has no implications for any statutory designated nature conservation sites, important habitats and/or protected species.

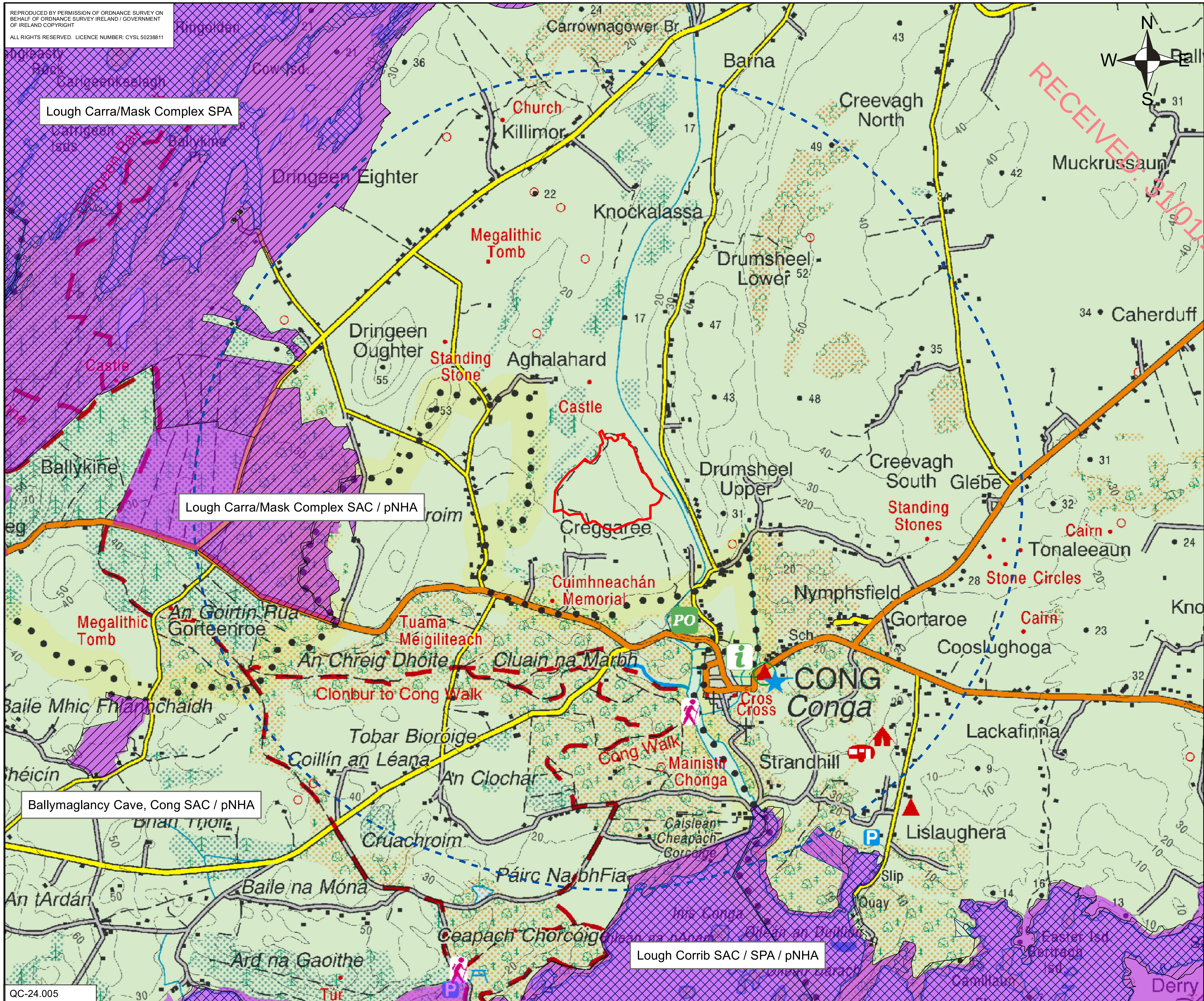
Policy Implications

6.69 The proposed deepening within the application area within the existing quarry at Cregaree will be in compliance with current planning policies relating to biodiversity at national, regional and local levels.

Residual Effects

6.70 The proposed deepening within the application area within the existing quarry at Cregaree will have no residual impacts on Biodiversity.

FIGURES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Lough Carra/Mask Complex SPA
Lough Carra/Mask Complex SAC / pNHA
Ballymaglancy Cave, Cong SAC / pNHA
Lough Corrib SAC / SPA / pNHA
RECEIVED: 31/01/2025
Carrownagower Br.
Barna
Creevagh North
Muckrussaun
Church
Killimor
Dringeen Eighter
Knockalassa
Megalithic Tomb
Drumsheel Lower
Caherduff
Dringeen Oughter
Standing Stone
Aghalahard
Castle
Ballykine
Drumsheel Upper
Creevagh South
Glebe
Standing Stones
Creggaree
Cairn
Tonaleeaun
Stone Circles
Cuimhneachán Memorial
Nymphsfield
Gortaroe
Cairn
Cooslughoga
Megalithic Tomb
An Goirtín Rua
Gorteenroe
Tuama Méigiliteach
An Chreig Dhóite
Cluain na Marbh
Clonbur to Cong Walk
CONG
Conga
Cros Cross
Baile Mhic Fhainchaidh
Tobar Bioróige
Coillín an Léana
An Clochar
Cong Walk
Mainistir Chonga
Strandhill
Lackafinna
Lislaughera
Cruachroim
Caisleán Cheapach Corcóige
Páirc Na bhFia
Baile na Móna
An tArdán
Ceapach Chorcóige
Ard na Gaoithe
Inis Conga
Camillaun
Easter Isd
Derry
Quay
Slip
QC-24.005

NOTES

LEGEND

- APPLICATION SITE
- 2KM RADIUS
- SPECIAL AREA OF CONSERVATION (SAC)
- SPECIAL PROTECTION AREA (SPA)
- PROPOSED NATURAL HERITAGE AREA (pNHA)

QUARRY CONSULTING

PROPOSED DEEPENING OF AN EXISTING QUARRY AT CREGAREE, CONG, CO. MAYO

DESIGNATED SITES

FIGURE 6.1

Scale	Date
1:20,000 @ A3	JANUARY 2025

NOTES

1. Under existing planning permission all existing vegetation, topsoils and overburden is permitted to be stripped. Although the existing vegetation within the application site it will have been removed before the onset of any deepening of the quarry from 5mOD to -12mOD.

LEGEND

- APPLICATION SITE

Habitats

- ED4 - ACTIVE QUARRIES AND MINES
- ED3 - RECOLONISING BARE GROUND
- FL8 - OTHER ARTIFICIAL LAKES AND PONDS
- GS2 - DRY MEADOWS AND GRASSY VERGES
- WS1 - SCRUB
- TARGET NOTE (TN)

QUARRY CONSULTING

PROPOSED DEEPENING OF AN EXISTING QUARRY AT CREGAREE, CONG, CO. MAYO

HABITAT PLAN

FIGURE 6.2

Scale 1:2,500 @ A3

Date JANUARY 2025

QC-24.005

APPENDICES

APPENDIX 6A: LOCAL POLICIES RELEVANT TO BIODIVERSITY

Policy / Objective	Description
Policies	
NEP 1	To support the protection, conservation and enhancement of the natural heritage and biodiversity of County Mayo, including the protection of the integrity of European sites, that form part of the Natura 2000 network, the protection of Natural Heritage Areas, proposed Natural Heritage Areas Ramsar Sites, Nature Reserves and Wild Fowl Sanctuaries (and other designated sites including any future designations).
NEP 2	To protect and enhance the county's natural heritage and biodiversity by supporting the implementation of the National Biodiversity Action Plan 2017-2021, the National Pollination Plan 2015-2020 and County Mayo Biodiversity Plan 2015- 2020 and any future editions, in partnership with relevant stakeholders, subject to available resources
NEP 3	To protect and enhance the county's natural heritage and biodiversity through supporting the implementation, in partnership with the County Mayo Heritage Forum, relevant stakeholders and the community, of the objectives and associated actions in the County Mayo Heritage Plan and future editions thereof, which relate to the remit and functions of Mayo County Council.
NEP 4	To conserve and enhance the county's biodiversity and ecological connectivity, identified areas of local biodiversity importance (Local Biodiversity Areas) in the towns and villages in Mayo.
NEP 7	To encourage the effective management of native and semi-natural woodlands, groups of trees and individual trees in the discharge of development management functions.
NEP 8	To support measures for the prevention and/or eradication of invasive species as appropriate within the county.
NEP 9	To enhance the county's natural heritage and biodiversity through supporting the protection and restoration of peatlands in County Mayo, where appropriate, in order to transition towards a low-carbon and circular economy
Objectives	
NEO 4	To protect and enhance biodiversity and ecological connectivity in County Mayo, including woodlands, trees, hedgerows, semi-natural grasslands, rivers, streams, natural springs, wetlands, stonewalls, geological and geo-morphological systems, other landscape features and associated wildlife, where these form part of the ecological network.
NEO 6	To protect surface waters, aquatic and wetland habitats and freshwater and water-dependent species through the implementation of all appropriate and relevant Directives and transposed legislation and seek to protect and conserve the quality, character and features of inland waterways by controlling developments close to navigable and non-navigable waterways.

Policy / Objective	Description
NEO 7	To seek the protection of the riparian zones of watercourses throughout the county, recognising the benefits they provide in relation to flood risk management, their protection of the ecological integrity of watercourse systems and the role they play in the enhancement of the county's natural heritage and biodiversity.
NEO 8	To maintain, protect and where possible enhance the natural heritage and biodiversity of bogs, fens and turloughs, where appropriate, in County Mayo.
NEO 9	Recognise the importance, in terms of their natural heritage and biodiversity, of woodlands, tree lines, hedgerows, stonewalls, watercourses and associated riparian vegetation and the role they play in supporting bat populations and where possible developments will be encouraged to retain such features.
NEO 11	To ensure that the impact of development within or adjacent to national designated sites, Natural Heritage Areas, Ramsar Sites and Nature Reserves likely to result in significant adverse effects on the designated site is assessed by requiring the submission of an Ecological Impact Assessment report (EcIA), Environmental Report (ER), an Environmental Impact Assessment Report (EIAR), if deemed necessary, and/or a Natura Impact Assessment (NIS), if deemed necessary, prepared by a suitably qualified professional, which should accompany planning applications.
NEO 13	To ensure the protection of trees or groups of trees protected under Tree Preservation Orders, as well as recognise the value and encourage the retention and management of other trees and woodlands, which make a valuable contribution to the character of the landscape, ecological corridors, green infrastructure, a settlement or its setting.
NEO 14	To protect and enhance the ecological network throughout the county to improve the ecological coherence of the Natura 2000 network in accordance with Article 10 of the Habitats Directive.
NE0 16	To ensure that where the presence of invasive species is identified at the site of any proposed development or where the proposed activity has an elevated risk of resulting in the presence of these species, details of how these species will be appropriately managed and controlled will be required.
NEO 24	To protect and enhance the county's floodplains and wetlands as 'green infrastructure' which provides space for storage and conveyance of floodwater, enabling flood risk to be more effectively managed and reducing the need to provide flood defences in the future, subject to normal planning and environmental criteria.

APPENDIX 6B: SUMMARY OF BIRDS RECORDED DURING THE HABITAT SURVEY (APRIL 2024)

Scientific Name	Common Name	Annex I EU Birds Directive	Red List	Amber List
Aegitholos caudatus	Long-tailed Tit	-	-	-
Columba palumbus	Wood Pigeon	-	-	-
Corvus cornix	Hooded Crow	-	-	-
Corvus frugilegus	Rook	-	-	-
Corvus monedula	Jackdaw	-	-	-
Cyanistes caeruleus	Blue Tit	-	-	-
Erithacus rubecula	Robin	-	-	-
Falco tinnunculus	Kestrel	-	√	-
Falco peregrinus	Peregrine	√	-	-
Fringula coelebs	Chaffinch	-	-	-
Motachilla alba	Pied Wagtail	-	-	-
Parus major	Great Tit	-	-	-
Periparus ater	Coal Tit	-	-	-
Pyrrhula pyrrhula	Bullfinch	-	-	-
Regulus regulus	Goldcrest	-	-	-
Sturnus vulgaris	Starling	-	-	√
Troglodytes troglodytes	Wren	-	-	-
Turdus merula	Blackbird	-	-	-
Turdus philomelos	Song Thrush	-	-	-