

# Screening for Appropriate Assessment and Natura Impact Statement

Proposed infilling of quarry and re-instatement to  
agricultural land, Mullanabreena, Co. Sligo



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### **Appendix 1: Conservation Objectives QI Targets and Attributes**

# 1 Introduction

## 1.1 Project Background

This report has been prepared by Oran Ecology on behalf of Mr. Cyril O'Reilly for the proposed infilling of a quarry void for the purposes of re-instatement to agricultural land using recovered excavated waste soils, stone and concrete rubble fill at Mullanabreena, Co. Sligo.

The Screening for Appropriate Assessment is presented in Section 3 while the Natura Impact Statement (NIS) is presented in Section 5.

The Screening for AA and NIS have been prepared in accordance with the provisions of the Habitats Directive 92/43/EEC and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011). The Screening for AA identified European sites which significant effects could not be excluded. The NIS allows the competent authority to complete an Appropriate Assessment, in accordance with the requirements of Article 6(3) of the Habitats Directive and Part XAB of the Planning and Development Act 2000, as amended.

This report provides the information necessary for the competent authority to complete an Appropriate Assessment of the potential impacts of the proposed project on European Sites.

The proposed project is not directly connected with, or necessary for, the management of any European Site, therefore, the project has been subject to the Appropriate Assessment process.

In addition to the above legislation this report was prepared in accordance with the following European, national and DEHLG guidance documents on Appropriate Assessment:

- Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities. DoEHLG, 2009;
- Assessment of plans and projects significantly affecting Natura 2000 sites; Methodological Guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC. European Commission, 2002;
- EC (2013) Interpretation Manual of European Union Habitats. Version EUR 28. European Commission,
- Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission,
- EC (2018) Managing Natura 2000 sites. The provisions of Article 6 of the 'Habitats Directive' 92/43/EEC. European Commission,
- European Communities (2000) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission
- EC (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. European Commission
- NRA (2009) Guidelines for Assessment of Ecological Impacts of National Roads Schemes, National Roads Authority, Dublin
- CIEEM (2018) Institute of Ecology and Environmental Management Guidelines for Ecological Impact Assessment



## 1.2 Legislative Context

### **Appropriate Assessment**

The Habitats Directive 92/43/EEC provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of through the establishment and conservation of an EU-wide network of sites known as Natura 2000. The Habitats Directive has been transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011) as amended and Part XAB of the Planning and Development Acts, 2000-2017. This requires that a consenting or competent authority undertake an Appropriate Assessment (AA) if a plan or project is likely to have the potential for significant effects on European Sites.

The obligation to undertake an AA derives from Article 6(3) and 6(4) of the Habitats Directive. Both involve a number of steps and tests that need to be applied in sequential order. Article 6(3) is concerned with the strict protection of sites, while Article 6(4) is the procedure for allowing derogation from this strict protection in certain restricted circumstances. An AA is a focused and detailed impact assessment of the implications of the plan or projects, alone and in combination with other plans and projects, on the integrity of a Natura 2000 site, in view of its conservation objectives. Assessments should be undertaken on the basis of best scientific evidence and methods.

### **Stages of Appropriate Assessment Process**

There are four stages involved in the Appropriate Assessment process. The Department of Environment, Heritage and Local Government (DoEHLG) has issued a document entitled Appropriate Assessment of Plans and Projects in Ireland: guidance for planning authorities (2009), which outlines the details of these stages. This document states that it is the responsibility of the competent authority to undertake the AA. The assessment should be based on sufficient relevant information such as that submitted by the proponent of the plan.

#### **Stage 1 - Screening**

The first step in AA is Screening for an AA. This requires a description of the project, identification and description of relevant Natura 2000 sites, and an assessment of likely effects of the proposed project. The process identifies the likely impacts on a European Site (Natura 2000) of a project or plan, which is not directly connected to or necessary for the management of the site, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant. If these are not deemed to be potentially significant, then there is no need to conduct a full AA. The Screening Stage is carried out to determine whether there is a requirement to proceed with a more detailed assessment and undertake Appropriate Assessment (Stage 2).

#### **Stage 2 – Appropriate Assessment**

Here, consideration needs to be given to the impact of the plan or project on the integrity of the Natura 2000 site(s), either alone or in-combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. This requires identification of the conservation objectives of relevant Natura 2000 site(s) that may be affected by the project. The type of impact should be identified. Additionally, where there may be adverse impacts, an assessment of the potential mitigation of those impacts is required.

#### **Stage 3 - Assessment of Alternative Solutions**



If the potential impacts are still considered to be significant or unknown after the Appropriate Assessment stage, then alternative ways of implementing the project are considered at this stage. If no alternative solutions are possible, then it is considered whether the project or plan may go ahead regardless, if imperative reasons of overriding public interest (IROPI) are found.

#### **Stage 4 - Imperative Reasons of Overriding Public Interest (IROPI)**

If significant negative impacts on the Natura 2000 site are unavoidable, and no alternative solutions may be found, then this stage involves the consideration of whether the project or plan may go ahead despite these effects, for 'imperative reasons of overriding public interest' (IROPI).

### **1.3 Statement of Competency**

This report and ecological survey was carried out by ecologist James Owens (B.Sc., M.Sc.) who has relevant academic qualifications and is a competent expert in the Appropriate Assessment process. James has five years' experience as an ecologist which has involved the assessment of hydrological impacts on numerous projects including OPW flood relief schemes, afforestation and felling applications, local authority drainage projects and renewable energy developments.

## 2 Project Description

### 2.1 Site Location

The proposed infill site is located in the townland of Mullanabreena, approximately 5km east of Tubbercurry, Co Sligo (Grid Ref ITM; X 557564, Y 810461). A site location map is provided in Figure 2.1.



Figure 2.1 Site location

### 2.2 Characteristics of the Project

The proposed development will consist of the infilling of an existing quarry void using inert material for the purpose of re-instating agricultural land. The quarry will be in-filled using recovered excavated waste soil, stone and concrete rubble fill. The proposed maximum annual intake volume of material will be 24,800 tonnes, with the lifetime proposed volume approximately 100,000 tonnes. Site layout drawings are provided as Figures 2.2-2.3.

The proposed development will also consist of the construction of the following for the purposes of infilling;

- A hardstand area/off-load area
- Weighbridge
- Wheelwash
- Portacabin and portaloo facilities with carparking and all associated site works

Article 2 of the Landfill Directive defines inert waste as follows;

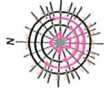
*"Inert waste" means waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react,*

*biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater.*

All operations will be undertaken in accordance with the relevant guidance and regulations set out in the following;

- EU Landfill Directive 1999/31/EC;
- Environmental Protection Agency (2011): BAT Guidance Note on Best Available Techniques for the Waste Sector: Landfill Activities;
- Control of Water Pollution from Construction Sites - Guidance for Consultants and Contractors. CIRIA C532. London, 2001.



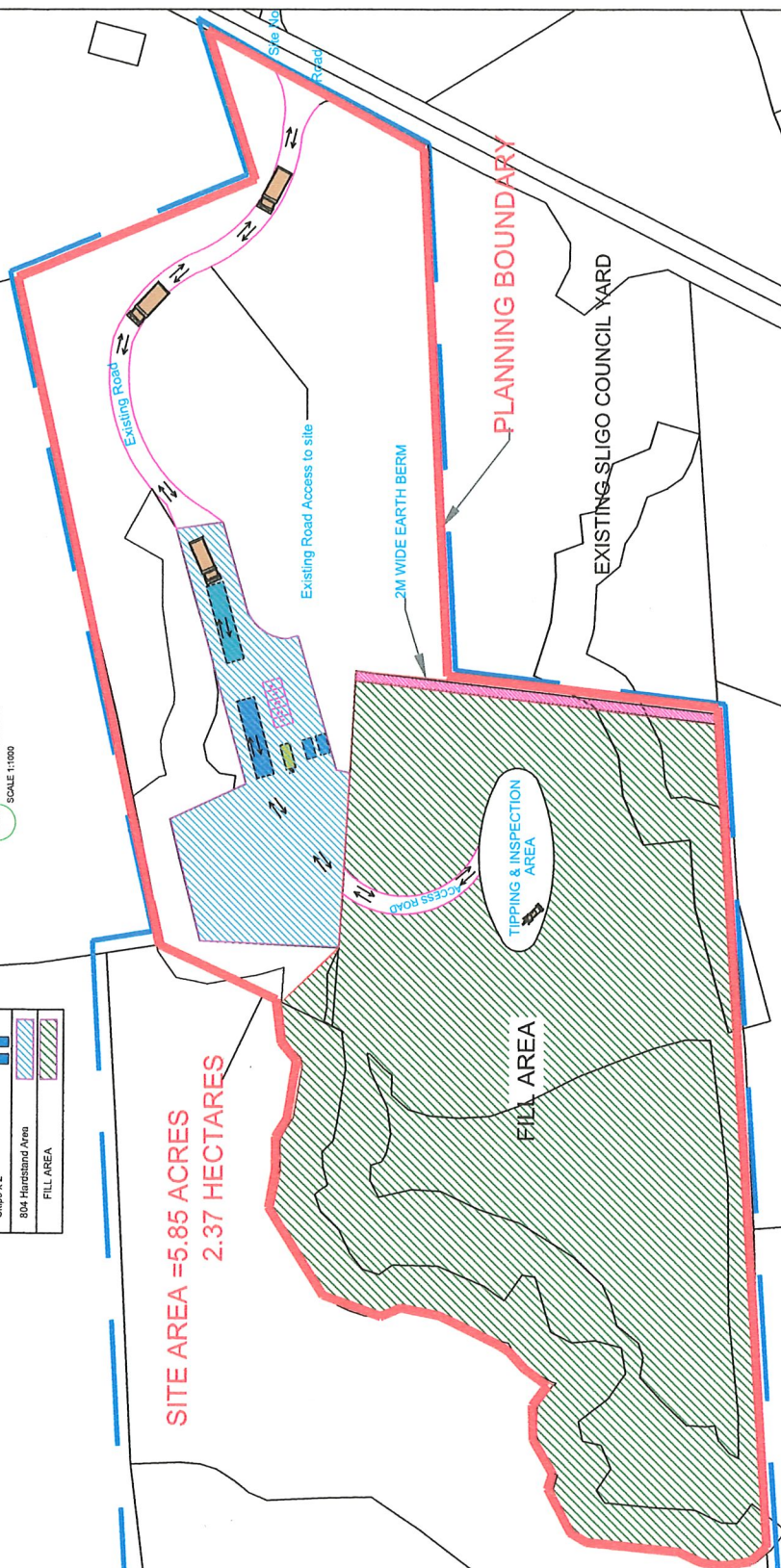


| LEGEND |                      |
|--------|----------------------|
|        | Cabin 20 x 8 ft      |
|        | Portable             |
|        | Weightbridge         |
|        | Wheelwash            |
|        | Car Parking Area x 5 |
|        | Slips x 2            |
|        | 804 Hardstand Area   |
|        | FILL AREA            |

| LEGEND |                   |
|--------|-------------------|
|        | LAND OWNERSHIP    |
|        | PLANNING BOUNDARY |

Site Layout  
SCALE 1:1000

SITE AREA = 5.85 ACRES  
2.37 HECTARES



Project: Proposed Soil Recovery Facility, Mullinabreena,  
Chaffpool, Co Sligo  
Drawing: Site Layout Map

|         |                |         |          |           |                 |
|---------|----------------|---------|----------|-----------|-----------------|
| Date:   | 05-09-2020     | Scale:  | As Shown | Drawn by: | CB              |
| Client: | Cyril O'Reilly | Job No: | 2020_224 | Dwg No:   | PA 0004 - Rev B |



126 Pembroke Road  
Ballsbridge  
D04 EP27  
T: +353 87 827 8379  
E: info@oson.ie

Figure 2.2



NOTE:

LANDS GRADED FOR AGRICULTURAL USE  
USING EXISTING MATERIALS FROM SITE

| LEGEND             |  |
|--------------------|--|
| LAND OWNERSHIP     |  |
| PLANNING BOUNDARY  |  |
| AGRICULTURAL LANDS |  |

Site Layout  
SCALE 1:1000

SITE AREA = 5.85 ACRES  
2.37 HECTARES

AGRICULTURAL LAND

Exhausted Quarry

PLANNING BOUNDARY

EXISTING SLIGO COUNCIL YARD

Project: Proposed Soil Recovery Facility, Mullinabreena,  
Chaffinch, Co Sligo

Drawing: Site Layout Map- REINSTATEMENT OF  
AGRICULTURAL LANDS

Date: 03-09-2020 Scale: As Shown Drawn by: CB

Client: Cynl O'Reilly Job No: 2020\_224 Draw No: PA 0005 - Rev B



126 Pembroke Road  
Ballsbridge  
D04 EP27  
T: +353 87 827 8379  
E: info@oson.ie

Figure 2.3

### 3 Screening for Appropriate Assessment

#### 3.1 Assessment of European Sites Within the Likely Zone of Influence

Table 3.1 lists all European Sites within the Likely Zone of Influence and provides an assessment on the potential for likely significant effects as a result of the proposed development on the Qualifying Interests (QIs)/Special Conservation Interests (SCIs) of each European Site. European Sites within 15km of the proposed development were taken to be within the Likely Zone of Influence, following Appropriate Assessment of Plans and Projects in Ireland: guidance for planning authorities (DoEHLG, 2009). Sites outside the 15km zone were also considered but no connectivity was identified.

The potential for significant effects to occur from the proposed development on European Sites was assessed using the source-pathway-receptor model. This conceptual model is a standard tool in environmental assessment. In order for an effect to occur, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism means there is no likelihood for the effect to occur. In the context of the proposed works, the model comprises:

- Source (s) – e.g. sediment run-off from proposed works;
- Pathway (s) – e.g. drains and streams connecting to a European site;
- Receptor (s) – Qualifying habitats and species of European sites.

EPA hydrological catchment data (available at [www.epa.ie](http://www.epa.ie)) was also utilised in the assessment. If the potential for significant effects to occur on a European Site is identified, then further assessment is required.

The assessment takes into consideration any likely direct or indirect impacts of the proposed development on European Sites, both alone and in-combination with other plans and projects, with regard to the following criteria: size and scale, land-take, distance from the European Site or key features of the site, resource requirements, emissions, excavation requirements, transportation requirements and duration of construction, operation and decommissioning. The appraisal of likely significant effects of the proposed development on any European sites does not take into account any measures intended to avoid or reduce any harmful effects of the proposed development on European sites.

A map showing European Sites within 15km of the proposed development is shown in Figure 3.1.



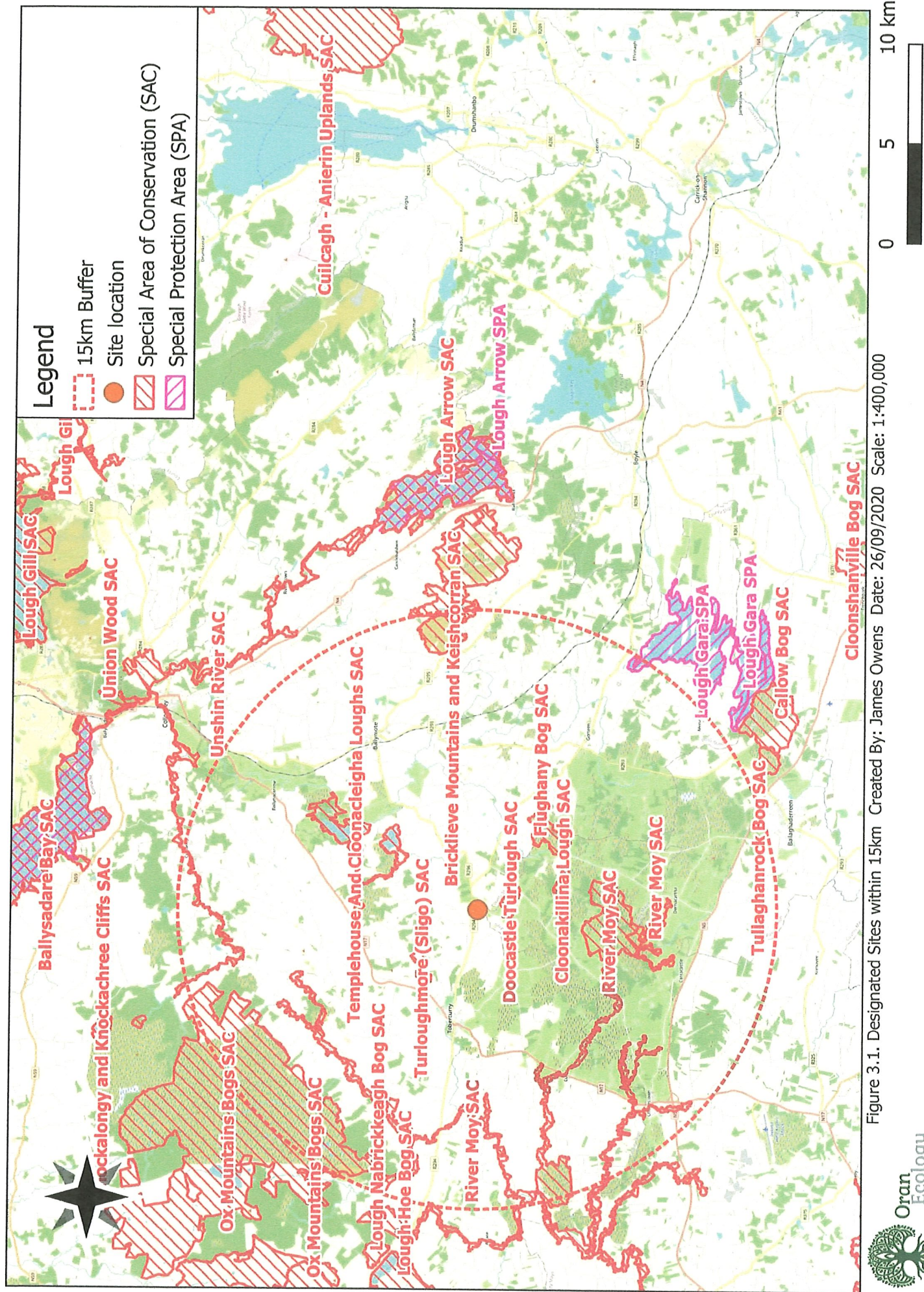




Table 3.1 Assessment of Sites Within the Likely Zone of Influence

| European Site, Code and Distance from the Proposed Development | Qualifying Interest(s)(QI's) / Special Conservation Interest(s)(SCIs) (* indicates Priority Annex I Habitats) as reviewed on the 28/02/2020 | Zone of Likely Influence Screening   | Potential for Likely Significant Effects |
|--|---|--|--|
| Doocastle<br>Turlough SAC [000492]<br>1.1km south-east         | <ul style="list-style-type: none"> <li>3180 Turloughs*</li> </ul>   | <p>The proposed development site is located entirely outside the boundary of the European Site and therefore there is no potential for direct effects.</p> <p>The proposed development site is located within the same groundwater body as the SAC (Ballymote). Therefore, the potential for pollution effects on the groundwater dependent QI cannot be excluded.</p> <p><b>Further assessment is required.</b></p>   | Yes                                      |
| Turloughmore (Sligo) SAC [000637]<br>3.5km north-west          | <ul style="list-style-type: none"> <li>3180 Turloughs*</li> </ul>   | <p>The proposed development site is located entirely outside the boundary of the European Site and therefore there is no potential for direct effects.</p> <p>The proposed development site is located within a separate groundwater body (Ballymote) to the SAC (GWDTE-Turloughmore Sligo). Therefore, no potential pathway for effect was identified with regard to the groundwater dependent QI. In addition, no surface water connectivity between the proposed development site and the SAC exists.</p> <p>No pathways for direct or indirect effects were identified and therefore the designated site is not considered further in this assessment.</p> | No                                       |
| Cloonakillina Lough SAC [001899]<br>3.9km south-east           | <ul style="list-style-type: none"> <li>7140 Transition mires and quaking bogs</li> </ul>  | <p>The proposed development site is located entirely outside the boundary of the European Site and therefore there is no potential for direct effects.</p> <p>The proposed development site is located within a separate groundwater body (Ballymote) to the SAC (Gorteen). In addition, no</p>  | No                                       |

|   |  |  |    |
|---|--|--|----|
|   |  | surface water connectivity between the proposed development site and the SAC exists.   |    |
|   |  | No pathways for direct or indirect effects were identified and therefore the designated site is not considered further in this assessment.   |    |
| Flughany Bog<br>SAC [000497]<br>4.3km south-east                            | <ul style="list-style-type: none"> <li>7110 Active raised bogs*</li> <li>7120 Degraded raised bogs still capable of natural regeneration</li> <li>7150 Depressions on peat substrates of the Rhynchosporion</li> </ul>                               | <p>The proposed development site is located entirely outside the boundary of the European Site and therefore there is no potential for direct effects.</p> <p>The QIs for which the SAC is designated are terrestrially dependent and therefore, due to distance, no effects as a result of the proposed development are anticipated on the SAC which is located over 4km away.</p> <p>No pathways for direct or indirect effects were identified and therefore the designated site is not considered further in this assessment.</p>      | No |
| Templehouse and<br>Cloonacleigha Loughs SAC<br>[000636]<br>4.4km north-east | <ul style="list-style-type: none"> <li>3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.</li> <li>3260 Water courses of plain to montane levels with the Ranunculus fluitans and Callitriche-Batrachion vegetation</li> </ul> | <p>The proposed development site is located entirely outside the boundary of the European Site and therefore there is no potential for direct effects.</p> <p>No watercourses were identified within or adjacent to the proposed development site which could act as conduits for pollution. No surface water connectivity between the proposed development site and the SAC exists.</p> <p>No pathways for direct or indirect effects were identified and therefore the designated site is not considered further in this assessment.</p> | No |
| River Moy SAC [002298]<br>5.3km south                                       | <ul style="list-style-type: none"> <li>7110 Active raised bogs*</li> <li>7120 Degraded raised bogs still capable of natural regeneration</li> <li>7150 Depressions on peat substrates of the Rhynchosporion</li> <li>7230 Alkaline fens</li> </ul>   | <p>The proposed development site is located entirely outside the boundary of the European Site and therefore there is no potential for direct effects.</p> <p>The SAC is located within a separate surface water catchment (The Moy) to the proposed development site (Sligo Bay &amp; Drowse).</p>  | No |



|   |  |   |    |
|---|--|---|----|
|   | <ul style="list-style-type: none"> <li>91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles</li> <li>91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)*</li> <li>1096 Brook Lamprey (Lampetra planeri)</li> <li>1106 Salmon (Salmo salar)</li> <li>1355 Otter (Lutra lutra)</li> <li>1092 White-clawed Crayfish (Austropotamobius pallipes)</li> <li>1095 Sea Lamprey (Petromyzon marinus)</li> <li>3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)</li> <li>3160 Natural dystrophic lakes and ponds</li> <li>4010 Northern Atlantic wet heaths with Erica tetralix</li> <li>4030 European dry heaths</li> <li>7130 Blanket bogs (* if active bog)</li> <li>7140 Transition mires and quaking bogs</li> <li>7150 Depressions on peat substrates of the Rhynchosporion</li> <li>1528 Marsh Saxifrage (Saxifraga hirculus)</li> <li>1013 Geyer's Whorl Snail (Vertigo geyeri)</li> </ul> | <p>Therefore, no connectivity between the proposed development site and the SAC exists.</p> <p>No pathways for direct or indirect effects were identified and therefore the designated site is not considered further in this assessment.</p>   |    |
| <p>Ox Mountains<br/>Bogs SAC [002006]<br/>11.8km north-west</p> |  | <p>The proposed development site is located entirely outside the boundary of the European Site and therefore there is no potential for direct effects.</p> <p>Part of the SAC is located within a separate surface water catchment (The Moy) to the proposed development site (Sligo Bay &amp; Drowse). Another part of the SAC is located up-catchment within a separate surface water sub-catchment Owenmore [Sligo]_SC_040 to the proposed development, Owenmore [Sligo]_SC_020. Therefore, no surface water connectivity between the proposed development site and the SAC exists.</p> <p>In addition, there is no potential for effects on the terrestrially dependent habitats and species for which the SAC is designated.</p> <p>No pathways for direct or indirect effects were identified and therefore the designated site is not considered further in this assessment.</p> | No |
| <p>Unshin River SAC [001898]<br/>11.9km north</p>               | <ul style="list-style-type: none"> <li>3260 Water courses of plain to montane levels with the Ranunculus fluitans and Callitriche-Batrachion vegetation</li> <li>6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)</li> <li>6410 Molinia meadows on calcareous, peaty or clayey-siltladen soils (Molinion caeruleae)</li> </ul>   | <p>The proposed development site is located entirely outside the boundary of the European Site and therefore there is no potential for direct effects.</p> <p>No watercourses were identified within or adjacent to the proposed development site which could act as conduits for pollution. No surface water connectivity between the proposed development site and the SAC exists.</p>  | No |

|  |   |  |    |
|--|---|--|----|
|  | <ul style="list-style-type: none"> <li>91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, <i>Alnion incanae</i>, <i>Salicion albae</i>)*</li> <li>1106 Salmon (<i>Salmo salar</i>)</li> <li>1355 Otter (<i>Lutra lutra</i>)</li> </ul>   | No pathways for direct or indirect effects were identified and therefore the designated site is not considered further in this assessment.   |    |
| Bricklieve Mountains and Keishcorran SAC [001656]<br>12.9km east | <ul style="list-style-type: none"> <li>3180 Turloughs*</li> <li>6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites)</li> <li>6510 Lowland hay meadows (<i>Alopecurus pratensis</i>, <i>Sanguisorba officinalis</i>)</li> <li>8120 Calcareous and calcisist scree of the montane to alpine levels (<i>Thlaspietea rotundifolii</i>)</li> <li>1065 Marsh Fritillary (<i>Euphydryas aurinia</i>)</li> <li>1092 White-clawed Crayfish (<i>Austropotamobius pallipes</i>)</li> </ul> | <p>The proposed development site is located entirely outside the boundary of the European Site and therefore there is no potential for direct effects.</p> <p>The SAC is located up-catchment and up-gradient of the proposed development site. Therefore, the potential for hydrological connectivity between the proposed development site and the aquatic dependent QIs of the SAC does not exist.</p> <p>There is no potential for on the terrestrially dependent QI 6210 for which the SAC is designated.</p> <p>No pathways for direct or indirect effects were identified and therefore the designated site is not considered further in this assessment.</p> | No |
| Lough Gara SPA [004048]<br>14.2km south-east                     | <ul style="list-style-type: none"> <li>A395 Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)</li> <li>A038 Whooper Swan (<i>Cygnus cygnus</i>)</li> </ul>  | <p>The proposed development site is located entirely outside the boundary of the European Site and therefore there is no potential for direct effects.</p> <p>The SPA is located within a separate surface water catchment (Upper Shannon) to the proposed development site (Sligo Bay &amp; Drowse).</p> <p>The proposed development is located outside the core foraging ranges of whooper swan (5km) and Greenland white-fronted goose (8km) which the SPA has been designated.</p> <p>No pathways for direct or indirect effects were identified and therefore the designated site is not considered further in this assessment.</p>                             | No |

### 3.2 In-combination Assessment

The potential for the proposed project to result in significant effects on Doocastle Turlough SAC [000492] was identified in the previous section and therefore, the proposed development also has the potential to result in cumulative effects on that site.

Where significant effects were not identified in relation to a European site as a result of the proposed development, the proposed development therefore cannot contribute to any cumulative effect on that European site when considered with other plans or projects.

An in-combination assessment for Doocastle Turlough SAC [000492] will be included in the NIS.

### 3.3 Conclusion and Screening Statement

The proposed development at Mullanabreena, Co. Sligo is not located within any European site. The Appropriate Assessment Screening considered potential effects which may arise as a result of the proposed project.

Following the screening process, it can be concluded that there is no likelihood of the proposed project as detailed above having a significant effect, individually or in-combination, on the following European sites, based on the evidence and assessment provided in this report:

- Turloughmore (Sligo) SAC [000637]
- Cloonakillina Lough SAC [001899]
- Flughany Bog SAC [000497]
- Templehouse and Cloonacleigha Loughs SAC [000636]
- River Moy SAC [002298]
- Ox Mountains Bogs SAC [002006]
- Unshin River SAC [001898]
- Bricklieve Mountains and Keishcorran SAC [001656]
- Lough Gara SPA [004048]

It cannot be excluded beyond reasonable scientific doubt, in consideration of best scientific knowledge and on the basis of objective information, in view of the relevant conservation objectives, either alone or in-combination with other plans or projects, that the proposed project will not result in significant effects on the following European sites;

- Doocastle Turlough SAC [000492]

Therefore, an Appropriate Assessment is required in accordance with Article 6(3) of the European Habitats Directive (92/43/EEC). The potential impacts to the European Site will be considered further in the NIS (Section 5) to inform the AA.



## 4 Characteristics of the Baseline Environment

### 4.1 Desk Study

#### 4.1.1 EPA Water Quality Data

The EPA Ground Waterbody WFD Status 2013-2018 assessment was reviewed for the Ballymote ground waterbody which was assessed as 'Good' and had a risk status as 'Not at risk'.

#### 4.1.2 Geological Survey of Ireland (GSI) Soils Data

The proposed development site is located within a 'Regionally Important Aquifer-karstified (conduit)'.

The GSI map viewer was consulted to establish groundwater vulnerability at the proposed development site. The proposed development site is located an area of 'Rock at or near Surface or Karst' and 'Extreme' vulnerability.

Soils at the site were predominantly categorised as *Shallow well drained mineral (mainly basic)* and a smaller area was categorised as *Deep well drained mineral (Mainly acidic)*.

### 4.2 Field Survey

A multi-disciplinary walkover survey of the proposed development site was undertaken in accordance with *Ecological Surveying Techniques for Protected Flora & Fauna during the Planning of National Road Schemes* (NRA, 2008) to provide baseline information on the site. All habitats within the site were categorised in accordance with *A Guide to Habitats in Ireland* (Fossitt, 2000). The survey was conducted on the 2<sup>nd</sup> of March 2020 and all habitats were readily identifiable at the time of the survey. The survey included a search for invasive species listed under the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). Incidental records of bird and mammal species were also recorded, if encountered.

#### 4.2.1 Habitats

A list of the habitats recorded on the site is provided in Table 4.1.

Table 4.1 Fossitt (2000) habitat categories recorded at the site

| Habitat                              | Fossitt Code |
|--------------------------------------|--------------|
| Dry calcareous and neutral grassland | GS1          |
| Hedgerows                            | WL1          |
| Spoil and bare ground                | ED2          |
| Recolonising bare ground             | ED3          |
| Other artificial lakes and ponds     | FL8          |
| Exposed calcareous rock              | ER2          |

The western half of the site consisted of a quarry void which was partially filled with water at the time of the site visit and was categorised as Other artificial lakes and ponds (FL8) (Plate 4.1). The exposed quarry face was categorised as Exposed calcareous rock (ER2) (Plate 4.1). The remaining area of the site was comprised of a mosaic of Dry calcareous and neutral grassland (GS1), Spoil and bare ground (ED2) and Recolonising bare ground (ED3), depending on the level of vegetation cover (Plate 4.2). Areas of exposed till and an access track were categorised as Spoil and bare ground (ED2). Dry

calcareous and neutral grassland (GS1) occurred where the ground had fully revegetated and included species such as red fescue (*Festuca rubra*), cock's-foot grass (*Dactylis glomerata*), common bent (*Agrostis capillaris*), common knapweed (*Centaurea nigra*), yarrow (*Achillea millefolium*) and glaucous sedge (*Carex flacca*), along with regenerating woody vegetation such as willow (*Salix* sp.) and bramble (*Rubus fruticosus* agg.). Recolonising bare ground (ED3) consisted of similar species composition to Dry calcareous and neutral grassland (GS1) but contained more bare ground and species such as colt's-foot (*Tussilago farfara*) and gorse (*Ulex europaeus*). The northern boundary of the site and part of the southern site boundary were demarcated by Hedgerows (WL1) which were dominated by whitethorn (*Crataegus monogyna*) and blackthorn (*Prunus spinosa*) and occasional ash (*Fraxinus excelsior*) (Plate 4.1).

No watercourses were recorded within or immediately adjacent to the site.



**Plate 4.1 Quarry void (FL8), Exposed rock (ER2) and Hedgerow (WL1)**





**Plate 4.2 Dry calcareous and neutral grassland (GS1), Recolonising bare ground (ED3) and exposed spoil (ED2)**

No invasive species listed under the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011) were recorded.



## 5 Natura Impact Statement

### 5.1 Assessment of Potential Adverse Effects

#### 5.1.1 Conservation Objectives

The QI for which a potential for significant effects was identified in Section 3 is assessed in light of its Conservation Objectives which are presented in Table 5.1. Detailed Site-specific Conservation Objectives (SSCO) are not available for Doocastle Turlough SAC. As only generic conservation objectives are available for Doocastle Turlough SAC, targets and attributes from detailed SSCO of other European Sites for the relevant QIs were therefore utilised and are included in Appendix 2.

*Table 5.1 Qualifying Interest and Conservation Objectives for Doocastle Turlough SAC*

| Qualifying Interest | Conservation Objective (Generic Version Version 6.0, 2018)   |
|---------------------|--|
| Turloughs* [3180]   | To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected |

### 5.2 Assessment of Potential Effects and Mitigation

#### 5.2.1 Direct Impacts

The proposed development site is entirely outside the boundary of any European Site. There will be no direct effects on the QI of the Doocastle Turlough SAC.

#### 5.2.2 Indirect Impacts

A potential pathway for effect was identified in the form of pollution of groundwater, which via a karst aquifer, has potential connectivity with the Doocastle Turlough.

Pollutants, as a result of contaminated material being imported to the proposed development site, hydrocarbons from leaking machinery or a fuel spill, or nutrient release from sanitary facilities could potentially enter the Ballymote ground waterbody and therefore contaminate the Doocastle turlough. The identified pathway for effect has been considered in the design of the proposed project and in developing mitigation measures. Only inert material will be permitted to be used in quarry infilling and therefore infill material is not anticipated to contaminate groundwater. Mitigation measures to protect groundwater quality are described in the section below.

##### 5.2.2.1 Mitigation

The following proposed mitigation measures have been included as part of the proposed development to ensure that, in view of the European sites' conservation objectives and beyond any scientific doubt, the proposed development will not adversely affect the integrity of the European sites concerned.

The project design (Section 2.2) and the following mitigation measures, have been designed to protect water quality and prevent adverse effects on the QI of the European site.

- Welfare facilities will be provided for operatives in the form of portaloos on the proposed hardstand area. Sanitary waste will be removed from site via a licenced waste disposal contractor. No permanent sanitary facilities will be constructed on site.

- Refuelling will only be undertaken by dedicated trained and competent personnel and in the proposed hardstand area.
- Fuel, oils and lubricants will be stored in a bunded area
- Plant will be inspected daily for leaks and emissions
- Spill-kits and drip trays will be kept on-site at all times.
- Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the site for licenced disposal or recycling
- All major repair and maintenance operations will take place off site

### 5.2.3 Assessment of Residual Effects

The incorporation of fundamental design measures and mitigation measures in the section above will protect the QIs of the SAC for which pathways for effect were identified and ensure there will be no residual effects on the Doocastle Turlough SAC [000492]. Therefore, there is no possibility of the project itself individually having an adverse effect on the integrity of the European Sites.



### 5.3 Cumulative and In-combination Effects

The proposed development was considered in combination with other plans and projects in the area that could result in cumulative effects on European Sites.

A search of the online planning system for Sligo County Council for recent planning applications was undertaken on the 15/11/2020. Refused, withdrawn and incomplete information applications were not included in the assessment. There was one planning application from the townland of Mullanabreena which was associated with the retention of a telecommunications structure (Pl. Ref. 17470).

A search of EPA licenced activities within the same groundwater and surface water catchments as the proposed development in Co. Sligo was undertaken and consisted of the following waste licences;

- P0382-01 Kiernan Farms (Sligo) Unlimited Company Carrowcushcly Pig Unit, Carrowcushcly, Ballymote, Sligo.
- P0828-01 TopChem Pharmaceuticals Limited Ballymote Business Park, Carrownanty, Ballymote, Sligo.

The following other plans and projects that were considered in the assessment;

- The Sligo County Development Plan 2017-2023 was also reviewed and considered as part of this assessment. The review focused on policies and objectives that relate to European sites.

After the assessment of impacts was considered in Section 5.2, no pathways for effect were identified after the design and mitigation of the proposed project were considered. The development therefore cannot contribute to any cumulative impact on any European sites.

No potentially adverse cumulative and/or in-combination pollution effects on any of the QIs has been identified with regard to the proposed project.

## 5.4 NIS Conclusion

The NIS has assessed all identified potential pathways for effect in relation to the proposed development on Doocastle Turlough SAC [000492].

It is objectively concluded, in light of the above objective scientific information, that, when the mitigation measures outlined in Section 5.2 are implemented, the project, individually or in combination with other plans and projects, will not have an adverse effect on the integrity of Doocastle Turlough SAC [000492], in view of their conservation objectives and in view of best scientific knowledge.



## 6 Bibliography

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**Appendix 1: Conservation Objectives QI Targets and Attributes**



## Conservation Objectives for : Lough Fingall Complex SAC [000606]

### 3180 Turloughs

**To restore the favourable conservation condition of Turloughs\* in Lough Fingall Complex SAC, which is defined by the following list of attributes and targets:**

| Attribute                                     | Measure                       | Target  | Notes  |
|---|-------------------------------|---|--|
| Habitat area                                  | Hectares                      | Area stable or increasing, subject to natural processes   | Lough Fingall Complex SAC is one of the most important Irish SACs for Turloughs*. There is significant hydrological and trophic variation among turloughs in the SAC, although most have some permanent saturation and are highly oligotrophic. Ten of the Goodwillie et al. (1997 in Southern Water Global and Jennings O'Donovan and Partners (SWG and JODP), 1997) sites are in the SAC: Cloghballymore Lough, Ballinderreen, Cuilidooish, Frenchpark, Lough Fingall, Carraghadoo, Cahernalinsky West and East, Tullaghnafrankagh, Dereen. Waldren (2015) covered Ballinderreen and Tullaghnafrankagh (both Inadequate conservation status). Goodwillie (1992) and Coxon (1986) studied Ballinderreen. Regan (2005) studied vegetation and wetland beetles at Ballinderreen, Frenchpark East and Cuilidooish. Goodwillie (1992) categorised Ballinderreen as of international ecological importance (3rd place). The mosaics of vegetation communities within and surrounding the turloughs are of particularly high conservation value |
| Habitat distribution                          | Occurrence                    | No decline, subject to natural processes  | The full range of the habitat within the SAC has not yet been mapped, although Goodwillie et al. (1997 in SWG and JODP, 1997) mapped the vegetation of at least ten turlough areas, and NPWS (2013) also used at least ten turlough points for Article 17 distribution mapping. See O Connor (2017) for information on all attributes and targets  |
| Hydrological regime                           | Various                       | Restore appropriate natural hydrological regime necessary to support the natural structure and functioning of the habitat | Hydrological regime is sub-divided into more detailed attributes (groundwater contribution, flood duration, frequency, area and depth, and permanently flooded/wet areas) and targets in O Connor (2017). The hydrology of the SAC is highly complex and variable. See the following for further information: Coxon (1986); Goodwillie (1992); SWG and JODP (1997); Naughton (2011); Naughton et al. (2012). Naughton et al. (2017) and Gill et al. (2013) may also contain useful information. Waldren (2015) assessed the hydrological regime at Tullaghnafrankagh as 'intermediate' owing to borehole abstraction, while past drainage was noted in Ballinderreen. Goodwillie et al. (1997 in SWG and JODP, 1997) documented other drainage in the SAC. Many areas have permanent or long-lasting pools, while at high water levels individual turloughs can become linked above ground   |
| Soil type                                     | Hectares                      | Maintain variety, area and extent of soil types necessary to support turlough vegetation and other biota                  | The turlough habitat in Lough Fingall Complex SAC has a range of soils, notable amongst which are peat, marl and outcropping rock. See Goodwillie et al. (1997 in SWG and JODP, 1997) for further information on many areas, and Goodwillie (1992) and Waldren (2015) for information on soils at Ballinderreen and Tullaghnafrankagh  |
| Soil nutrient status: nitrogen and phosphorus | N and P concentration in soil | Maintain nutrient status appropriate to soil types and vegetation communities   | See Waldren (2015) for information on total nitrogen and total phosphorus (TP) at Ballinderreen and Tullaghnafrankagh  |
| Physical structure: bare ground               | Presence                      | Maintain sufficient wet bare ground, as appropriate   | See O Connor (2017) for further details on this and all attributes   |

|  |  |  |   |
|--|--|--|---|
| Chemical processes: calcium carbonate deposition and concentration                 | Calcium carbonate deposition rate/soil concentration | Maintain appropriate calcium carbonate deposition rate and concentration in soil   | Soils in the turloughs in the SAC generally have high calcium carbonate content (see Goodwillie et al., 1997 in SWG and JODP, 1997; Waldren, 2015)  |
| Water quality  | Various  | Restore appropriate water quality to support the natural structure and functioning of the habitat                          | Water quality is sub-divided into more detailed attributes (nutrients, colour, phytoplankton and epiphyton biomass) and targets in O Connor (2017). Tullaghnafrankagh had high total phosphorus (mean of 33µg/l TP) and very high chlorophyll <i>a</i> (mean 18.4µg/l, maximum 69.4µg/l) (Waldren, 2015). Trophic status was also higher than expected at Ballinderreen (mean 12.4µg/l TP; chlorophyll <i>a</i> mean 3µg/l and max 8.8µg/l) (Waldren, 2015). Turloughs in the SAC should, typically, be naturally highly oligotrophic and require targets of ≤10µg/l TP, annual mean <2.5µg/l chlorophyll <i>a</i> and maximum ≤8µg/l chlorophyll <i>a</i> to reach favourable condition  |
| Active peat formation  | Flood duration                                       | Maintain active peat formation   | Peat is a significant feature of the turlough habitat in this SAC   |
| Vegetation composition: area of vegetation communities                             | Hectares   | Maintain/restore area of sensitive and high conservation value vegetation communities/units                                | See Goodwillie (1992), Goodwillie et al. (1997 in SWG and JODP, 1997), Regan (2005), Regan et al. (2007) and Waldren (2015) for information on vegetation communities in the turloughs in the SAC. Waldren (2015) stated Tullaghnafrankagh had rather uniform vegetation diversity and moderate cover of negative indicators. The SAC is composed of a complex mosaic of habitats and the turloughs themselves contain or intergrade with a variety of vegetation communities, from probable hard water lake (habitat code 3140) to Alkaline fen (7230) and <i>Cladium</i> fen* (7210), <i>Cladium</i> swamp and reedbeds to scrub and woodland   |
| Vegetation composition: vegetation zonation  | Distribution   | Maintain/restore vegetation zonation/mosaic characteristic of the site   | See Goodwillie (1992), Goodwillie et al. (1997 in SWG and JODP, 1997), Regan (2005), Regan et al. (2007) and Waldren (2015) for information on vegetation in the turloughs in the SAC   |
| Vegetation structure: sward height   | Centimetres  | Maintain/restore sward heights appropriate to the vegetation unit, and a variety of sward heights across the turlough      | See Goodwillie (1992), Goodwillie et al. (1997 in SWG and JODP, 1997), Regan (2005), Regan et al. (2007) and Waldren (2015) for information on vegetation in the turloughs of the SAC. Waldren (2015) noted the need for grazing to improve vegetation diversity at Tullaghnafrankagh   |
| Typical species (terrestrial, wetland and aquatic plants, invertebrates and birds) | Presence   | Maintain/restore typical species within and across the turlough  | Typical species is sub-divided into more detailed attributes and targets in O Connor (2017). A number of rare and notable plant species are found in the turloughs in the SAC, including <i>Viola persicifolia</i> and <i>Thelypteris palustris</i> , both Near Threatened (Wyse Jackson et al., 2016), <i>Teucrium scordium</i> , <i>Chenopodium rubrum</i> , <i>Rorippa islandica</i> , turlough <i>Taraxacum amarellum</i> ( <i>J webbia</i> ) and <i>Nitella tenuissima</i> (Goodwillie, 1992; Stewart and Church, 1992; Goodwillie et al., 1997 in SWG and JODP, 1997; Rich, 2014; Waldren, 2015). Water beetles include the Endangered <i>Berosus signaticollis</i> , the Vulnerable species <i>Helophorus strigifrons</i> and <i>Hygrotus novemlineatus</i> and the Near Threatened species <i>Graptodytes bilineatus</i> and <i>Laccobius atratus</i> (Foster et al., 2009). The SAC is also important for a range of rare and threatened moths and other wetland beetles (see Bond, 1997 in SWG and JODP, 1997; Regan, 2005) |
| Fringing habitats: area  | Hectares   | Maintain/restore marginal fringing habitats that support turlough vegetation, invertebrate, mammal and/or bird populations | This SAC is of high conservation importance for its mosaic of Annex I and other habitats, particularly the transitions and gradations between habitats, e.g. between turloughs/lakes and limestone pavement, heath, calcareous, species-rich grassland, scrub and woodland. See also the conservation objectives for habitats 4060, 5130, 6210, 7210 and 8240 in this volume  |

Vegetation  
structure:  
turlough  
woodland

Species diversity and  
woodland structure

Maintain appropriate  
turlough woodland  
diversity and structure

There is much purging buckthorn (*Rhamnus cathartica*) scrub fringing turloughs in the SAC, as well as juniper (*Juniperus communis*) scrub in close association with lowland alpine heath. Alder buckthorn (*Frangula alnus*) also occurs. See also Goodwillie (1992), Goodwillie et al. (1997 in SWG and JODP, 1997) and the conservation objectives for habitats 4060 and 5130 in this volume

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