



# Environmental Impact Assessment Report

Proposed Broiler Poultry Development at Corlea, Ballybay, Co.  
Monaghan

**Report For:**

**Stephen Moffett**

**Prepared By:**

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**Date:**

**12<sup>th</sup> January 2021**

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(10.01.2021)

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## NON-TECHNICAL SUMMARY

### Introduction

Mr. Stephen Moffett is applying to Monaghan County Council for planning permission to construct a new broiler poultry house at a site in his ownership at Corlea, Ballybay, Co. Monaghan. It is anticipated that the newly proposed poultry unit will house c. 50,630 broiler chickens, once constructed. This in combination with the 39,890 birds currently farmed onsite (i.e., House 1) will increase the applicant's total flock to c. 90,520 birds. Consequently, an Environmental Impact Assessment Report (EIAR) for the development is obliged under the following regulations:

- S.I. No. 600/2001 – Planning and Development Regulations, 2001 – Schedule 5, Part 2 Section 1(e) *'Installations for intensive rearing of poultry not included in Part 1 of the Schedule which would have more than 40,000 places for poultry'*.

The site of the proposed development (ITM Coordinates: 671153, 825906) is situated within a rural setting, approximately 5km to the north west of Ballybay Town and 7.25km to the south east of Monaghan Town. The proposed development site is located adjacent to the applicant's existing poultry enterprise and encompasses a total area of 1.271ha. With the exception of the planning permission granted for the existing poultry unit, there are no records of any other previous planning permission applications at the proposed development site.

Like other broiler farms of this scale in the region, it is envisaged that farming activities will occur from 6.00am to 8.00pm, 7 days a week. It should be noted that as lighting, feeding and ventilation systems will run on a 24-hour basis, some emergency maintenance works outside of these hours may be required. All stock will be supplied to the farm as day old chicks and will remain onsite for approximately 6 weeks. It is envisaged that c.7 batches of chickens will be managed onsite per annum (i.e. allowing for 1-2 weeks for the cleaning of each house after each batch of chickens has been removed offsite). A Hazard Analysis Critical Control Point (HACCP) Plan will be produced and implemented for the facility in order to ensure that hygiene and biosecurity measures are maintained on site.

### Selection of Alternatives

A number of alternative locations for the development were considered by the applicant and the design team prior to the selection of the proposed site. The selected development site was

chosen primarily due to its proximity to the applicant's existing poultry enterprise. To ensure the site location is appropriate and in keeping with the Monaghan County Development Plan 2019 – 2025, the criteria pertaining to development location set out within Agricultural Policies AGP1 and AGP2 have been addressed.

The proposed development has been designed to integrate into the local landscape without being visually detrimental. For instance, the F.F.L of the new poultry unit has been specified to match that of the existing unit to the west. Additional landscaping has been proposed to offer further screening of the site from the east. Whilst dark green box profile corrugated cladding has been specified for the buildings to ensure the development is sympathetic to the surroundings. In addition, other sites under the control of the applicant were perceived to have a greater potential environmental impact (e.g. lands located within the Corlongford Fen).

### **Predicated Impacts & Mitigation Measures**

Guidance on Poultry-rearing installations are described under Project Type 13 of the *EPA – Advice Notes for Preparing Environmental Impact Statements, Draft, September 2015* with issues surrounding waste handling (i.e. slurry/manure) and odours / air quality identified as the principle causes for concern.

All soiled / wash waters generated during the cleaning phase of operations will be applied to suitable land banks under the ownership of the applicant's father and done in accordance with the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2017 S.I. No. 605 of 2017. All organic manure generated on-site will be removed off-site by George Coulson & Sons Ltd. (registered contractor with the Department of Agriculture, Food & Marine) for use on tillage lands located in Counties Meath, Wexford and Wicklow;

An assessment of the air emissions from the proposed development using the SCAIL (Simple Calculation of Atmospheric Impact Limits) – Agricultural model was completed. The tool has been designed to specifically deal with emissions from pig and poultry buildings and has been developed to evaluate the impact of NH<sub>3</sub> emissions on habitat sites and the impact of PM<sub>10</sub> emissions on human health. The SCAIL modelling assessment confirms that development will not cause a deterioration in air quality in respect of the Magheraveely Marl Loughs SAC and Slieve Beagh SPA / SAC or from a human health perspective.



It is not anticipated that the proposed development will when combined with other projects, result in a cumulative impact that is collectively significant. The do-nothing scenario in relation to the proposed development will not result in any change in the surrounding hydrogeology, hydrology, air quality, noise quality, climate conditions, landscape and cultural heritage. The main impact on the human environment if the proposed development does not proceed is the loss of direct and indirect employment opportunities. In addition, the production of poultry manure and application to tillage farmlands as an organic fertiliser represents a slight positive impact on soils which would be lost if the development did not proceed (i.e. valuable in terms of both nutrient & organic matter content). A new hedgerow >30m will be planted creating a slight positive impact on the local ecology. Failure of the proposed development to proceed would result in a loss of this ecological benefit.

### **Summary of Environmental Impacts**

No significant adverse residual effects are likely to occur through in-combination and/or cumulative impacts. Any effects identified can be mitigated through management of the construction and operation process by adherence to the mitigation measures set out in this E.I.A.R together with any conditions/restrictions in any approval/consent as may be granted.

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## 1.0 INTRODUCTION

### 1.1 Project Background & Context

It is the intention of Mr. Stephen Moffett to construct 1 x poultry/broiler house with a total capacity of circa 50,630 birds on a site under his ownership at Corlea, Ballybay, Co. Monaghan (see Plate 1 & Site Location Map included in Appendix 2). An Environmental Impact Assessment Report (EIAR) for the development is obliged under the following regulations:

- S.I. No. 600/2001 – Planning and Development Regulations, 2001 – Schedule 5, Part 2 Section 1(e) *‘Installations for intensive rearing of poultry not included in Part 1 of the Schedule which would have more than 40,000 places for poultry’.*



**Plate 1 Location of proposed poultry development site, Corlea, Ballybay, Co. Monaghan (site boundary outlined by red polyline).**

The following Environmental Impact Assessment Report (EIAR) has been prepared by Patrick McCabe, BAgrSc., MSc., based on an environmental impact assessment (EIA) of the

aforementioned development. This EIAR has been produced to accompany an application for planning permission for said poultry unit with ancillary structures and associated site works to Monaghan County Council for their review.

## 1.2 Site Description

The site of the proposed development (ITM Coordinates: 671153, 825906) is situated within a rural setting, approximately 5km to the north west of Ballybay Town and 7.25km to the south east of Monaghan Town. The proposed development site is located adjacent to the applicant's existing poultry enterprise and encompasses a total area of 1.271ha. With the exception of the planning permission granted for the existing poultry unit, there are no records of any other previous planning permission applications at the proposed development site.

The proposed development location is bordered by agricultural grassland to the north and east with the applicant's family's bovine farmyard complex situated directly to the west. A local road (L7310) runs adjacent to the site's southern boundary. The closest residences to the site are that of the applicants and applicant's family, with no other residential or commercial buildings located within a 100m radius of the development. A community hall is located approx. 110m to the east. The site will be accessed via an existing entrance and laneway that has been constructed and maintained in accordance with the planning conditions previously set out in Planning Permission Ref 18/187. The local road in which the site is accessed is linked to the R162 and R183 Regional Roads approx. 1.5m and 2.7km from the site respectively.

## 1.3 Description of Proposed Development

It is anticipated that the newly proposed poultry unit will house c. 50,630 broiler chickens, once constructed. This in combination with the 39,890 birds currently farmed onsite (i.e., House 1) will increase the applicant's total flock to c. 90,520 birds.

The dimensions of the proposed unit will be 117.215m in length, 22.545m in width and 5.92m in height, representing an internal net floor area of 2,469.87m<sup>2</sup> (see Site Layout Drawing included within the application). The finished floor level (F.F.L) of 137.46m AOD has been set to match that of the existing poultry house, thus ensuring that the new development is integrated within the existing landscape. Similarly, a detached storage shed (i.e. total floor area: 96.37m<sup>3</sup>) is planned as part of the development, with a similar F.F.L specified to that of the poultry units (i.e. 137.36m AOD).

The proposed broiler house will consist of a portal steel frame structure with an impermeable insulated concrete base. The floor will consist of a 125mm reinforced concrete slab, underlaid by 80mm Kingspan floor insulation, with a 1200-gauge dry proof membrane (DPM) between a 50mm blinding layer and floor. External walls will comprise of pre-cast wall panels, with automated vents fitted. The end spandrel panels, side walls and roof will consist of dark green Kingspan composite metal panels. The colour of these panels has been selected so that it is not intrusive on the surrounding landscape and ties in with the existing infrastructure onsite.

The poultry unit will be thermally insulated and equipped with computer-controlled ventilation and artificial lighting systems in line with best available technique (BAT) requirements. Similarly, automated feeding and drinking systems in accordance with BAT requirements will be installed. A new 40 tonne meal bins (i.e., 12m in height) will be located to the front of the house for feed storage. All soiled waters emanating from both the existing poultry unit and proposed unit during the wash down phase of operations will be captured by a sump / grated channels and piped directly to the existing 36.5m<sup>3</sup> wash water tank located to the front of the new poultry unit (see Plate 2). Additional, storm water drainage infrastructure will be installed onsite to collect and dispose of all roof rainwater via a soakaway system. Whilst all soiled yard water will pass through a Kingspan Klargestor Oil Water Interceptor, prior to discharge. A Monaghan Local Authorities Water Protection Plan Checklist has been completed as part of the planning application.



**Plate 2. Photo of grated channel to the front of the existing poultry unit onsite.**

#### 1.4 Description of Proposed Operations

The proposed poultry development will be operated by the applicant, Mr. Stephen Moffett. Like other broiler farms of this scale in the region, it is envisaged that farming activities will occur from 6.00am to 8.00pm, 7 days a week. It should be noted that as lighting, feeding and ventilation systems will run on a 24-hour basis, some emergency maintenance works outside of these hours may be required. All stock will be supplied to the farm as day old chicks and will remain onsite for approximately 6 weeks. It is envisaged that c.7 batches of chickens will be managed onsite per annum (i.e. allowing for 2-3 weeks for the cleaning of each house after each batch of chickens has been removed offsite).

Litter (i.e. wood shavings/chopped straw) will be spread across the entirety of the internal floor area. At the end of the 6-7-week growing period all birds will be removed from the farm by specialised bird handlers and delivered to Manor Farm for processing. At the end of each batch/growing cycle all manure will be removed offsite by an approved registered contractor (Please see letter from George Coulson & Sons Ltd included within this application). This will be done in accordance with the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2017 S.I. No. 605 of 2017 commonly referred to as the 'Nitrates Regulations'. As mentioned previously, an existing 36.5m<sup>3</sup> wastewater storage tank is positioned to the front of new poultry unit and will collect all soiled waters generated during the washing process. Similarly, the land application of these waters will be done in line with the requirements of the Nitrates Regulations. The details surrounding how this soiled water will be disposed of are included in Section 4.3 and Appendix 3. In addition, information pertaining to the application of soiled water onto the applicant's land is included on the Supplementary Planning Application Form for Agricultural Development included as part of the application.

During each batch it is anticipated that a small number of birds will die prematurely. All dead birds will be stored in sealed containers prior to disposal and removed offsite by College Proteins, Nobber, Co. Meath when required (see Acceptance Letter included as part of the application). To minimise the risk of infection on the farm, only personnel essential to its operation are permitted onsite (i.e. staff, veterinarians, servicemen etc.). In addition, all visitors are required to sign in and out of the visitors register and to follow the disinfectant protocols set out on the farm. To ensure compliance, the farm may be subject to various inspections from numerous bodies including Manor Farm, Bord Bia, the Department of Agriculture, Food and Marine, Monaghan County Council and the Environmental Protection Agency (EPA) throughout the year. Given the number of birds (i.e. c. 90,500) intended to be farmed on site, the applicant will be required to apply to the EPA for an Industrial Emissions Licence (IED) (>40,000 birds) should the development be granted planning permission.

## 2.0 SCOPING OF ENVIRONMENTAL IMPACT ASSESSMENT

### 2.1 Screening for E.I.A.R

As mentioned previously, it is anticipated that the proposed poultry development will contain c. 50,630 broiler chickens once constructed, bringing the total flock number of the facility to c. 90,500 birds. Consequently, the proposed development is above the threshold whereby an E.I.A.R is obliged under:

- *S.I. No. 600/2001 – Planning and Development Regulations, 2001 – Schedule 5, Part 2 Section 1(e) ‘Installations for intensive rearing of poultry not included in Part 1 of the Schedule which would have more than 40,000 places for poultry’.*

In order to ensure effective participation of the public in the decision-making process, the EIA Directive requires electronic notification to the public of applications for development consent that are subject to an Environmental Impact Assessment (EIA). In Ireland, the EIA portal is a public information facility meeting the requirements of Directive 2011/92/EU as amended by 2014/52/EU. Accordingly, prior to the submission of an E.I.A.R to a competent authority, notification must be given to the Department of Housing, Planning and Local Government about said application for its inclusion on the portal. Please see in Appendix 1, the EIA portal confirmation notice (Portal ID: 2021005) in respect to this application / EIAR.

### 2.2 Identification of Likely Significant Impacts

The scoping of this environmental impact assessment (E.I.A) was carried out by Patrick McCabe, BSc., MSc., of Hydrec Environmental Consulting in conjunction with the design architect, Mr. Stephen Moffett. A number of EIS / EIAR's on poultry developments in the locality have been subject to review by Monaghan County Council in the recent past and as such this EIAR has been scoped in keeping with previous submissions. Whilst these developments set a precedence for the scope required within this EIAR, an examination of any additional significant issues unique to the site or the site's operation have been considered.

This EIAR has been prepared in accordance with the *EPA – Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* issued in August 2017. It should be noted that the aforementioned guidelines are currently at the draft stage. In addition, the following previous EPA EIA guidance documentation have been consulted when carrying out this assessment:

- *EPA – Revised Guidelines on the Information to be Contained in Environmental Impact Statements, Draft, September 2015; and*
- *EPA – Advice Notes for Preparing Environmental Impact Statements, Draft, September 2015.*

When preparing the Soils & Geology and Hydrogeology, Hydrology and Ecology sections of this EIAR, the following additional guidance documents were also consulted:

- *IGI – Guidelines for the preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements, 2013;*
- *‘Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes’ by the National Roads Authority (NRA, 2009)*
- *Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009);*
- *Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater & Coastal (CIEEM, 2016).*

As part of the EIA scoping process it is necessary to identify, describe and assess the likely significant impacts of a project on the environment. The *EPA – Advice Notes for Preparing Environmental Impact Statements, Draft, September 2015* provides guidance on the topics which would commonly be addressed when preparing an E.I.S. (i.e. now E.I.A.R) for developments of a specific project class. Guidance on Poultry-rearing installations are described under Project Type 13 of the advice notes with issues surrounding waste handling (i.e. slurry/manure) and odours identified as the principle causes for concern. Other typical significant impacts likely to affect the receiving environment are also listed within. It should be noted that advice notes to accompany the draft guidelines issued in August 2017 have not been published as of yet.

## **2.3 Methodology**

### *2.3.1 Baseline Information*

Under Article 3(1) of the amended EIA Directive 2014/52/EU, an assessment of the direct and indirect significant effects of a project on the following factors are required:

- a) population and human health;
- b) biodiversity;
- c) land, soil, water, air and climate;
- d) material assets, cultural heritage and the landscape;
- e) the interaction between the factors referred to in points (a) to (d).

For reasons of clarity, the following table, Table 1 outlines the section/sections whereby the above-mentioned factors are addressed within this EIAR. Baseline information for these factors has been sourced from the following databases / organisations:

- Teagasc;
- Environmental Protection Agency (EPA);
- Ordnance Survey of Ireland (OSI);
- Preliminary Flood Risk Assessment Mapping, (OPW);
- Geological Survey of Ireland (GSI);
- National Biodiversity Centre;
- National Parks & Wildlife Services (NPWS);
- National Biodiversity Data Centre;
- National Monuments Service;
- National Inventory of Architectural Heritage;
- Met Eireann;
- Monaghan County Development Plan 2019 – 2025;
- Monaghan Wetland Map, 2010; and
- County Monaghan Landscape Character Assessment, August 2008.



**Table 1. Environmental Factors Assessed & Associated Section No.**

Required Environmental Factors	Corresponding EIAR Section No. & Heading
Population & Human Health	Section 11 – Population & Human Health
Biodiversity	Section 6 – Ecology
Land	Section 4 – Soils, Geology & Hydrogeology
Soil	Section 4 – Soils, Geology & Hydrogeology
Water	Section 4 – Soils, Geology & Hydrogeology Section 5 – Hydrology
Air & Climate	Section 8 – Air, Noise & Climate
Material Assets	Section 10 – Material Assets
Cultural Heritage & The Landscape	Section 7 – Archaeological & Cultural Heritage Section 9 – Landscape & Visual Impact
Interaction Between the Factors	Section 12 – Inter-relationships & Cumulative Effects

The processes and technologies associated with the construction and operation of the proposed development are well understood given the number of poultry enterprises currently operational within the county and as such no limitations or deficiencies in the data/information have been identified.

*2.3.2 Impact Assessment Methodology*

The criteria for evaluating impact and rating significance are outlined in Tables 2 & 3 below. This terminology for impact quality, significance, duration and type are in accordance with Table 3.3 of the EPA E.I.A.R guidelines, with the NRA guidelines used to justify the aforementioned terminology.

**Table 2. Impact Classification Terminology consistent with EPA Guidelines, 2015 / 17.**

Impact Characteristic	Term	Description
Quality	Positive	A change which improves the quality of the environment
	Neutral	A change which does not affect the environment
	Negative	A change which reduces the quality of the environment
Significance	Imperceptible	An impact capable of measurement but without noticeable consequences
	Slight	An impact which causes noticeable changes in the character of the environment without affecting its sensitivities
	Moderate	An impact that alters the character of the environment in a manner consistent with existing and emerging trends
	Significant	An impact, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment
Duration	Profound	An impact which obliterates sensitive characteristics
	Short-term	Impact lasting 1 to 7 years
	Medium-term	Impact lasting 7 to 15 years
	Long-term	Impact lasting 15 to 60 years
	Permanent	Impact lasting over 60 years
Type	Temporary	Impact lasting for 1 year or less
	Cumulative	The addition of many small impacts to create one larger more significant impact
	'Do Nothing'	The environment as it would be in the future should no development of any kind be carried out
	Indeterminable	When the full consequences of a change in the environment cannot be described
	Irreversible	When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost
	Residual	Degree of environmental change that will occur after the proposed mitigation measures have taken effect
	Synergistic	When the resultant impact is of greater significance than the sum of its constituents
	'Worst Case'	The impacts arising from a development in the case where the mitigation measures may substantially fail

**Table 3. Rating of Significant Environmental Impacts**

Importance of Attribute	Magnitude of Impact			
	Negligible	Small Adverse	Moderate Adverse	Large Adverse
Extremely High	Imperceptible	Significant	Profound	Profound
Very High	Imperceptible	Significant/Moderate	Profound/Significant	Profound
High	Imperceptible	Moderate/Slight	Significant/Moderate	Profound /Significant
Medium	Imperceptible	Slight	Moderate	Significant
Low	Imperceptible	Imperceptible	Slight	Significant /Moderate

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### 3.0 EXAMINATION OF ALTERNATIVES

#### 3.1 Alternative Site Location

A number of alternative locations for the development were considered by the applicant and the design team prior to the selection of the proposed site. The selected development site was chosen primarily due to its proximity to the applicant's/applicant's family existing poultry enterprise.

To ensure the site location is appropriate and in keeping with the Monaghan County Development Plan 2019 – 2025, the criteria pertaining to development location set out within Agricultural Policies AGP1 and AGP2 have been addressed. These criteria include: (policy criterion in italics with compliance described below in normal text):

**AGP 1** - To permit development on new and established agricultural or forestry holdings where it is demonstrated that:

- a) *The appearance, character and scale are appropriate to its location,*
- b) *The proposal visually integrates into the local landscape and additional landscaping is provided where necessary,*
- k) *Ensure that the proposal will not seriously impact on the visual amenity of the area of the natural surrounding environment and that the finishes and colours used blend into the surroundings.*

The proposed development has been designed to integrate into the local landscape without being visually detrimental. For instance, the F.F.L of the new poultry unit has been specified to match that of the existing unit to the west. Additional landscaping has been proposed to offer further screening of the site from the east. Whilst, dark green box profile corrugated cladding has been specified for the buildings to ensure the development is sympathetic to the surroundings.

- c) *The proposal will not have an adverse impact on the natural or built heritage*

The development will not have any impact on any natural or built heritage sites as the closest feature (i.e. Glebe House) is located approx. 430m to the northwest of the site. Additionally,

the development will not be visible from any scenic routes, areas of ecological designation or areas of secondary amenity value.

*d) The proposal will not result in a detrimental impact on the amenity of residential dwellings outside of the holding including potential for issues arising from noise, smell and pollution. Where a development is proposed within 100m of any residential property not located on the holding within the rural area (i.e. outside of a designated settlement) written consent, witnessed by a solicitor or a peace commissioner, from the adjoining property owner stating there is no objection to the proposal must be provided,*

No third-party dwellings (i.e. those outside of the applicant's family ownership) are located within 100m of the building footprint. The closest community hall is located 110m to the east. Chapter 8, details further how the impact of the development on air quality in relation to human health has been found to be negligible.

*g) The proposal will not result in a traffic hazard.*

The development will result in an additional c.7 vehicular movements to and from the site per week. Consequently, it is not predicated that this will cause an adverse impact on the local road infrastructure. Additionally, sufficient site visibility splays can be achieved and have been demonstrated as part of the previous planning permission approval (Ref 18/187).

*h) Outline why there is no suitable existing building on the holding that cannot be used.*

*j) The proposal is located within or adjacent to existing farm buildings, unless it has been clearly demonstrated that the building must be located elsewhere for essential operational or other reasons.*

*l) Where possible, the development is grouped with existing buildings in order to reduce their overall impact in the interests of amenity.*

Given the scale of the project (i.e. internal floor area: 2,469m<sup>2</sup>), there are no buildings under the applicant's ownership that can be retrofitted to facilitate the development. In addition, the development has been located adjacent to the applicant's existing poultry unit which is in compliance with Monaghan County Council's AGP1 (j) and AGP 1 (l).

**AGP 2** - In addition to the information required under AGP 1 the following additional information will be required for assessing applications for intensive poultry units or similar specialised agri-developments the Council:

*b) Details of the scale and intensity of existing operations in the vicinity of the site, including the cumulative impact of similar type developments within proximity of the site.*

A cumulative impact assessment for the development is described in Section 12.

*e) Proximity of development to aquifers and water courses and its impact on them.*

The risk assessment in relation to both the local aquifers and watercourses are assessed in Chapter 4 and Chapter 5 respectively.

*f) The potential impact of the proposal on the residential amenity of adjoining occupiers must be considered. A unit shall not be developed at a distance of less than 100 metres from a dwelling within the rural area (i.e. outside of a designated settlement) unless the third party has given written consent, witnessed by a solicitor or a peace commissioner.*

As stated above, there are no third party residential developments within 100m of the building footprint.

*i) A statement outlining why a location on the landholding was deemed more appropriate to alternative options. If the Planning Authority, consider a more appropriate location is available on the landholding the application may not receive favourable consideration.*

Principally a preference was given to the selected development site, given its location adjacent to the applicant's existing poultry unit. This satisfies Monaghan County Council's AGP1 (j) and AGP 1 (l), which recommends such an approach. In addition, other sites under the control of the applicant were perceived to have a greater potential environmental impact (e.g. lands located within the Corlongford Fen).

### 3.2 Alternative Size, Layout & Design

The design and layout of the proposed development is very similar to other broiler developments in the region. As stated in Section 1.3, the development has been designed in line with the BAT requirements described for the rearing of poultry. In addition, the unit has been designed in adherence to S.I. No. 311/2010 – European Communities (Welfare of Farmed Animals) Regulations 2010. Consequently, no other site layouts or designs were deemed to be more appropriate.

To ensure the site's size, layout and design is appropriate and in keeping with the Monaghan County Development Plan 2019 – 2025, the criteria pertaining to site design set out within Agricultural Policies AGP1 and AGP2 have been satisfied. These criteria include: (policy criterion in italics with compliance described below in normal text):

**AGP 1 - e)** *The proposal will not result in a pollution threat to sources of potable water, water courses, aquifers or ground water,*

All organic fertilisers produced on site will be managed in adherence to the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2017 S.I. No. 605 of 2017. In addition, all organic manure generated on-site will be removed off-site by George Coulson & Sons Ltd (registered contractor with the Department of Agriculture, Food & Marine) for use on tillage lands located in Counties Meath, Wexford and Wicklow

**AGP 1 - i)** *Design, scale and materials which are sympathetic to the locality and adjacent buildings.*

The design of the poultry house is very similar to other modern broiler houses in the area. There are no novel finishes proposed for the development with dark green box profile sheet cladding specified so that the building further integrates into its surroundings.

**AGP 2 - g)** *Details of associated activities such as cleaning, ventilation and heating.*

Emptying and cleaning of the house will occur at the end of each growing period (i.e. c. 7 times per annum). Automatic computer-controlled ventilation, heating, feeding and drinking systems in line with BAT will be installed to ensure the highest standards of production are achieved.

**AGP 2 - h) *A comprehensive landscaping plan.***

All landscaping details are included on Moffett Architectural Drawing No. 466 20 01

**AGP 2 - j) *Traffic management plans and traffic assessment associated with the proposed development may be required for large proposals.***

As stated previously, the development will result in additional c.7 vehicular movements to and from the site per week. Consequently, it is not predicated that this will cause an adverse impact on the local road infrastructure. Additionally, sufficient site splays can be achieved either side of the site's entrance.

### **3.3 Alternative Management of By-Products**

Given that the applicant will manage all poultry manure and soiled waters in compliance with the requirements of the Nitrates Directive, no alternatives were deemed to be more suitable.

To ensure the site's management of by-products is appropriate and in keeping with the Monaghan County Development Plan 2019 – 2025, the criteria pertaining to by-product management set out within Agricultural Policies AGP1 and AGP2 have been satisfied. These criteria include: (policy criterion in italics with compliance described below in normal text):

**AGP 1 - f) *Proper provision for disposal of liquid and solid waste is provided.***

**AGP 2 - c) *Methods for waste management including frequency and location of disposal relative to the proposed unit.***

**AGP 2 - d) *Details of air pollution arising from the units and effluent storage, transportation and spreading.***

All details pertaining to how the development will comply with S.I 605 of 2017 are described in Section 4.3. While the results of the SCAIL modelling assessment is included in Section 8.2.3.



## 4.0 SOILS, GEOLOGY & HYDROGEOLOGY

### 4.1 Environmental Setting

#### 4.1.1 Soils & Subsoils

According to the Teagasc and EPA soils map, AminSRPT - Shallow, rocky, peaty/non-peaty mineral complexes (Mainly acidic) exists within the entirety of the site. Further to the north and northeast of the site, Cut – cutover / cutaway peat is found.

In Ireland, the parent material underlying the majority of the country is comprised of quaternary sediments with the remainder composed of bedrock outcrop. These quaternary sediments have resulted from glacial movement, melting and deposition. The Teagasc and EPA subsoil maps identify that the entirety of the site is underlain with Rck – Bedrock at or close to the surface (see Figure 1). Where cutover peats soils are present to the north and north east, peaty subsoils are also found.

#### 4.1.2 Bedrock Geology

Based on the Geological survey of Ireland (GSI) 1:100k bedrock formation mapping, there are two bedrock formations found to exist within the site (see Figure 2). The majority of the site is underlain by the Red Island Formation which comprises of green to greenish-grey medium or coarse grained, locally conglomeratic greywacke. Grey to greyish black shales can also be found within the formation.

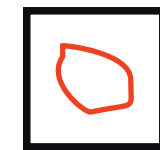
The Slieve Glah Formation which comprises of grey to dark grey slaty siltstone, mudstone and thin bedded, fine to coarse-grained or microconglomeratic greywacke is found in the south eastern corner of the site. The Orlock Bridge Fault is mapped to transect through the site and forms the boundaries of the aforementioned bedrock formations. Prior to the construction of the applicant's existing poultry unit, it is anticipated that some bedrock outcropping was present on site as is evident by outcropping present directly to the west of the site. No karst landforms are identified within or in the proximity of the site according to The National Karst Database.

#### 4.1.3 Geological Heritage

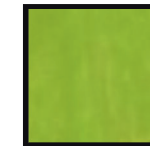
No geological heritage sites have been identified within the immediate vicinity of the site, with the closest found 4.3km to the south west. That site is the Rockcorry – Cootehill Ribbed Moraines (Site Code: MN015) which form part of the largest field of ribbed moraines found



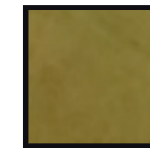
## **LEGEND**



Site Boundary



Sandstone & Shale Till



Cutover Peat



Bedrock at or near surface



Corlongford Fen



### **PROJECT:**

Environmental Impact Assessment Report -  
Stephen Moffett -  
Corlea, Ballybay, Co. Monaghan

### **TITLE:**

Teagasc Subsoil Map of Site  
& Surrounding Lands

### **SCALE:**

**1:4,000**

### **DRAWN BY:**

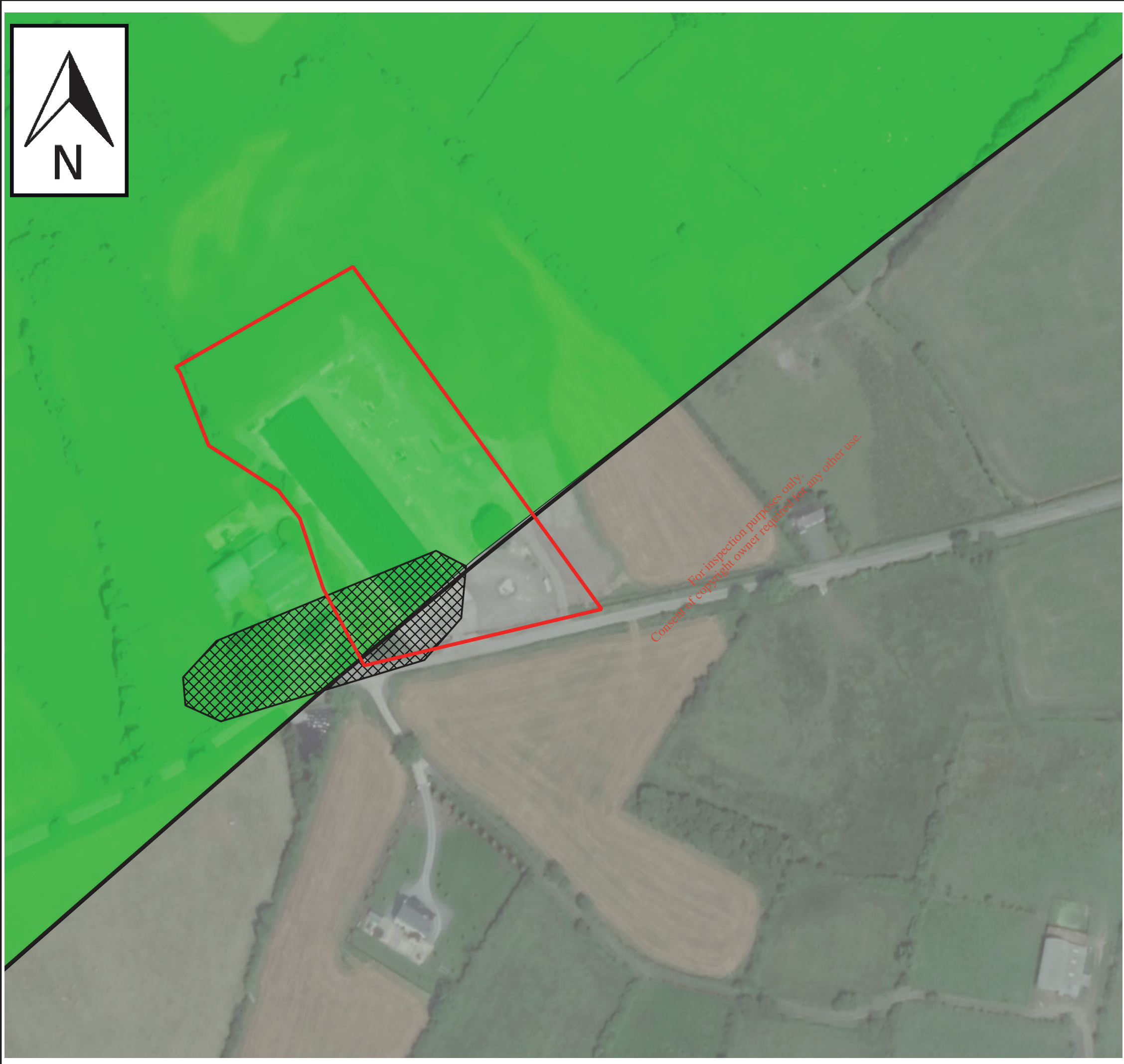
**PMcC**

### **DRAWING NO:**

**Figure 1**

### **REV.**

**A**



**LEGEND**

-  Site Boundary
-  Red Island Formation
-  Slieve Glah Formation
-  Orlock Bridge Fault
-  Bedrock Outcrop



**PROJECT:**  
 Environmental Impact Assessment Report -  
 Stephen Moffett -  
 Corlea, Ballybay, Co. Monaghan

**TITLE:**  
 GSI Bedrock Geology Map of Site  
 & Surrounding Lands

<b>SCALE:</b> 1:1,500	<b>DRAWN BY:</b> PMcC
<b>DRAWING NO:</b> Figure 2	<b>REV.</b> 0

anywhere in the world. No such geological features are found within the confines of the development site.

#### 4.1.4 Groundwater Aquifer Classification & Vulnerability

The Geological Survey of Ireland (GSI) have reviewed the 1,200 geological Formations and Members defined within the Republic of Ireland and reduced them into 27 'Rock Unit Groups' (RUGs) based on their hydrogeological properties and significance. Based on the GSI's generalised bedrock RUG mapping, one RUGs exist within the site, namely the *SMV – Silurian Metasediments and Volcanics* RUG. Correspondingly, the aquifer underlying the site is classified as a PI – poor aquifer comprising of bedrock which is generally unproductive except for local zones.

Groundwater Vulnerability is a term used to represent the intrinsic geological and hydro-geological characteristics that determine the ease with which groundwater may be contaminated by human activities. Groundwater vulnerability maps are based on the type and thicknesses of subsoils (sands, gravels, glacial tills (or boulder clays), peat, lake and alluvial silts and clays), and the presence of certain karst features. Groundwater is most at risk where the subsoils are absent or thin and, in areas of karstic limestone, where surface streams sink underground at swallow holes. Given the shallow nature / presence of bedrock at surface, the development site is classified as 'X - Extreme' vulnerability. The groundwater underneath the site is within the Keady Groundwater Body (GWB) and is classified as being of 'Good' status.

#### 4.1.5 Groundwater Wells & Flow Direction

No groundwater public supply or group water scheme Zone of Contribution (ZOC) areas impinge upon the site, with the closest outer protection area (SO) relating to the Monaghan public water supply (PWS) situated approx. 6.3km to the north west. According to the GSI's well database, the closest well to the site is identified, within the neighbouring townland of Terrygeely. This well is described as a dug well with a poor yield, estimated at 9.8m<sup>3</sup>d. Following inspection of the Ordnance Survey of Ireland (OSI) 25'' historical mapping and OSI Cassini 6'' mapping, no other springs or wells were identified within the vicinity of the site. Whilst it is estimated that groundwater will flow in a general eastern / north-eastern direction within the site (i.e. towards the Aghnaglogh Stream), it is not anticipated that this development with impact upon the 'Terrygeely' well, given the relatively short flow paths that are generally exhibited within poor groundwater aquifers.

## 4.2 Predicted Impacts

An analysis of the predicted effects of the proposed poultry development on the soils, geology and hydrogeology of the site and surrounding environment during both the construction and operation of the facility are presented below.

### 4.2.1 Construction Phase

Given the low quality/significance of the site (i.e. no effect on geological heritage or substantial loss of well drained / fertile soil, given the predominance of shallow bedrock levels), it is envisaged that the impact as a consequence of land take will be imperceptible. It is not envisaged that any excess soil will be generated during the 'Cut and Fill' phase of construction.

However, given that the groundwater vulnerability has been classified throughout as 'X - Extreme', the following could have an adverse impact on the site's soil quality and hydrogeological condition if left unmitigated:

- There is a potential for accidental spillage of diesel fuel and hydraulic oil from site machinery during the construction phase.
- Storage of fuels and hazardous materials (i.e. hydrocarbon products) needed during the construction of the development has the potential to impact on the site's soil quality and underlying aquifer if not stored correctly;
- It is anticipated that a small quantity of construction and demolition (C&D) waste will be produced onsite. Improper storage of C&D waste has the potential to cause soil and subsequent groundwater contamination (e.g. via sulphate and heavy metal leachate).

### 4.2.2 Operational Phase

Since there will be no discharge to ground, with the exception of rain / storm water it is not envisaged that the activities conducted during the operation of the facility will pose a significant risk to the underlying soils and groundwater. However, there is the potential the following could contribute to a small adverse impact if left unmitigated:

- Accidental spillage of diesel fuel and hydraulic oil from site machinery leading to soil contamination and downward vertical migration of pollutants and subsequent contamination of the underlying aquifer;

- Improper storage and disposal of hazardous materials onsite (i.e. fluorescent tubing containing mercury); and
- Over application of organic manure and soiled water to farming lands leading to downward vertical migration of nutrients and subsequent enrichment of the underlying aquifer.

### 4.3 Mitigation Measures

It has been determined that following the implementation of the proposed mitigation measures, all potential impacts associated with the development can be classed as Imperceptible. These measures will include:

- Spill kits to be maintained onsite to ensure that any spillages or leakages are dealt with immediately;
- Temporary bunds for oil/diesel storage tanks will be used onsite during the construction phase of the project;
- All waste generated during the construction and operation of the facility should be properly segregated and stored onsite prior to disposal;
- To prevent accidental releases, no hydrocarbons or toxic chemicals should be stored in close proximity to any drain or watercourse. Similarly, waste storage containers / areas should be located away from drains and watercourses.
- All rainwater / stormwater from the poultry unit shall be diverted to pass through a silt trap prior to discharge to ground. This will ensure that any storm water emanating from the site does not negatively impact on the underlying aquifer. In addition, this will minimise the generation of soiled / wastewater required for disposal;
- The over application of organic manure to agricultural lands will not occur as all organic manure generated on-site will be removed off-site by George Coulson and Sons Ltd. (registered contractor with the Department of Agriculture, Food & Marine) for use on tillage lands located in Counties Meath, Wexford and Wicklow. All manure will be stored within the confines of the poultry house until the house is emptied / cleaned at the end of the batch;
- All soiled / wash waters generated during the cleaning phase of operations will be applied to suitable land banks owned by the applicant's father and in accordance with the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2017 S.I. No. 605 of 2017. Based on information provided by the applicant (see Appendix 3), Mr. Moffett's father currently farms c. 29.83 hectares with a stocking rate of c. 68kg organic N/ha recorded for 2020. It is estimated that c. 144.9m<sup>3</sup> of soiled water will be generated per annum across the enterprise (i.e. accounting for both current

and proposed facilities). This was calculated on the basis that 0.23m<sup>3</sup> of wash water will be generated per 1,000 birds (i.e. 90,500 birds) and based on 7 batches per annum. Given a soiled water nitrogen (N) content of 1kg Organic N/m<sup>3</sup>, 144.9m<sup>3</sup> of soiled water applied to the available 25.83 ha, equates to an additional organic N loading of 5.6kg Organic N/ha. The application of all soiled waters on these lands will increase the applicant's family's stocking rate to c. 73.6 kg Organic N/ha, which is substantially lower than the limits allowed (i.e. <170kg Organic N/ha).

- At present, a soiled water tank of 36.5m<sup>3</sup> in volume is located onsite. Following the increase in flock size from 39,890 to 90,520 birds, a total soiled water volume of 20.8m<sup>3</sup> will be generated per batch. The Nitrates Regulations stipulate that for soiled water storage facilities constructed on or after 1st January 2015, enough storage to be able to store the equivalent of at least 15 days of soiled water at any time of the year should be provided for. Thus, the applicant's existing wash water infrastructure is sufficient, with a substantial freeboard allowed for.

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## 5.0 HYDROLOGY

### 5.1 Hydrological Setting

With the publication of Ireland's second River Basin Management Plan (RBMP), the RBMP 2018 – 2021 defines the entirety of the island of Ireland as a single River Basin District (RBD). This single RBD has been broken down into 46 catchment management units. These units are mainly based on the hydrometric areas in use by the local authorities. Each of the 46 catchment management units have been further broken down into 583 sub-catchments. The proposed development site is located within the Lough Neagh and Lower Bann Hydrometric Area (No.03) and WFD Catchment (No. 03). Additionally, the site is located within the Clontibret (Stream)\_SC\_010 WFD Sub-catchment.

The Aghnaclogh Stream (1<sup>st</sup> Order) which is located approx. 160m to the east, is the closest watercourse to the proposed development site. Another watercourse the Toniscoffey Stream, is located approx. 500m to the north of the site, however, it should be noted that this waterbody is located within a different catchment to the site (i.e. the Dromore\_SC\_010). Consequently, the proposed development site is situated outside of the Stranooden GWS / White Lough surface water catchment (see Figure 3).

### 5.2 Flood Risk

As a requirement of the EU Floods Directive (2007/60/EC), the Republic of Ireland completed a National Preliminary Flood Risk Assessment (PFRA) in 2011. The country was divided into 420 map tiles for the purposes of disseminating the output of the assessment. These maps indicate the extent of the predicted 0.5% annual exceedance probability (AEP) for coastal flooding, the 0.1% AEP for fluvial flooding and the 1.0% AEP for pluvial flooding. No fluvial or pluvial flooding is demarcated to occur within the confines of the site.

### 5.3 Predicted Impacts

An analysis of the predicted effects of the proposed poultry development on the surrounding hydrology during both the construction and operation of the facility are presented below.

#### 5.3.1 Construction Phase

Given that there is no loss of flood plain, alteration to a waterbody or loss of water dependant habitat associated with the construction of the development, it is envisaged that the impact on the surrounding hydrology will be Imperceptible.





## LEGEND



Site Boundary



Stream / River



Stranooden GWS / White Lough Catchment



### PROJECT:

Environmental Impact Assessment Report  
 - Stephen Moffett -  
 Corlea, Ballybay, Co. Monaghan

### TITLE:

Hydrological Features in the Vicinity of the  
 Development Site

### SCALE:

1:5,000

### DRAWN BY:

PMcC

### DRAWING NO:

Figure 3.

### REV.

0

However, given Ireland's obligation under the WFD, to restore all 'Poor' waters to 'Good' status by 2027, it is important that no activities associated with the development cause a further deterioration to the Clontibret Stream. With that being said, the development has the potential to have an adverse impact if left unmitigated:

- Accidental spillage of diesel fuel and hydraulic oil from site machinery during the construction phase has the potential to contaminate the underlying aquifer and subsequently the Aghnaglogh Stream via a base flow pathway;
- Improper storage of fuels and hazardous materials (i.e. hydrocarbon products) needed during the construction of the development has the potential to impact on the Aghnaglogh Stream / Clontribret Stream via the same pathway;

### 5.3.2 Operational Phase

Since there will be no discharge other than rainwater from the site, it is not envisaged that the activities conducted during the operation of the facility will pose a significant risk to the local hydrology. However, there is the potential that the following could contribute to an adverse impact if left unmitigated:

- Accidental spillage of diesel fuel and hydraulic oil from site machinery during the operational phase has the potential to contaminate the underlying aquifer and subsequently the Aghnaglogh Stream via a base flow pathway;
- Improper storage and disposal of hazardous materials onsite (i.e. fluorescent tubing containing mercury); and
- Over application of organic manure and soiled water to farming lands leading to runoff of nutrients and subsequent enrichment of surface water bodies in the proximity of receiving land banks.

## 5.4 Mitigation Measures

It has been determined that following the implementation of the proposed mitigation measures, all potential impacts associated with the development can be classed as Imperceptible. These measures will include:

- Spill kits to be maintained onsite to ensure that any spillages or leakages are dealt with immediately;

- Temporary bunds for oil/diesel storage tanks will be used onsite during the construction phase of the project;
- All waste generated during the construction and operation of the facility should be properly segregated and stored onsite prior to disposal;
- To prevent accidental releases, no hydrocarbons or toxic chemicals should be stored in close proximity to any drain or watercourse. Similarly, waste storage containers / areas should be located away from drains and watercourses;
- All rainwater / stormwater from the poultry unit shall be diverted to pass through a silt trap prior to discharge to ground. This will ensure that any storm water emanating from the site does not negatively impact on the underlying aquifer. In addition, this will minimise the generation of soiled / wastewater required for disposal;
- The over application of organic manure to agricultural lands will not occur as all organic manure generated on-site will be removed off-site by George Coulson and Sons Ltd. (registered contractor with the Department of Agriculture, Food & Marine);
- All soiled / wash waters generated during the cleaning phase of operations will be applied to suitable land banks owned by the applicant's father in accordance with the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2017 S.I. No. 605 of 2017. A nutrient management assessment is included in the mitigation section of the Soils, Geology and Hydrogeology chapter of this E.I.A.R;
- An assessment on the manure / soiled water storage capacity requirements post development is included in the mitigation section of the Soils, Geology and Hydrogeology chapter of this E.I.A.R.

## 6.0 ECOLOGY

### 6.1 Ecological Setting

#### 6.1.1 Terrestrial Ecology

A search of the National Parks and Wildlife Services (NPWS) and National Biodiversity Data Centre's (NBDC) online data records was undertaken to determine if any rare or protected flora or fauna species have been recorded within or in the proximity of the site. A 1km Zone of Influence was applied to the assessment. One species, namely the Eurasian Badger (*Meles meles*), was recorded within this zone. It is important to note however, that no observations of the species are noted within the curtilage of the development site. The Corlongford Fen is located to the south east of the site (see Figure 1). This inter drumlin wetland is comprised of species poor transition mire with marginal scrub woodland and marsh.

On the 06<sup>th</sup> of January 2021, Patrick McCabe of Hydrec Environmental Consulting conducted a walkover study of the site to assess its ecological condition. In accordance with the Fossitt Habitat classification system, it was determined that the majority of the site's habitat could be categorised as a 'Buildings and Artificial Surfaces BL3' with an 'Improved Agricultural Grassland GA1' habitat found directly to the north and east. There was no evidence of any active badger setts within the confines of the site, which was to be expected given the general developed / disturbed nature of the study area. In addition, no wetland habitat or floral species associated with such was observed. Consequently, based on the habitat types found within the site and absence of protected / rare species, the ecological value of the site was determined to be low.

#### 6.1.2 Aquatic Ecology

The Biotic Index of Water Quality (BIWQ), better known as the Q-value, was developed in Ireland by the EPA. Q-values and water quality classes are assigned using a combination of habitat characteristics and structure of the macroinvertebrate community within the water body. Individual macroinvertebrates are ranked for their sensitivity to organic pollution and the Q-value is assessed based, primarily on their relative abundance within a biological sample. The EPA's Q-value rating, water quality status class and corresponding WFD status classification is presented in Table 4.

**Table 4. EPA Q-Rating and Equivalent WFD Water Quality Status Classes**

Q-Rating	EPA Quality Status	Water Quality	WFD Status
Q5	Unpolluted	Good	High
Q4-5	Unpolluted	Fair - Good	High
Q4	Unpolluted	Fair	Good
Q3-4	Slightly Polluted	Doubtful – Fair	Moderate
Q3	Moderately Polluted	Doubtful	Poor
Q2-3	Moderately Polluted	Poor – Doubtful	Poor
Q2	Seriously Polluted	Poor	Bad
Q1-2	Seriously Polluted	Bad – Poor	Bad
Q1	Seriously Polluted	Bad	Bad

No macroinvertebrate sampling has been completed on the Aghnaglogh Stream or the Six Mile Stream (i.e. watercourse in which the Aghnaglogh Stream flows into). The closest active monitoring station on the river system is located on the Clontibret Stream at the bridge to the east of Killyneill Crossroads (Station No. RS03C011400). In 2017, a Q-value rating of Q3 was recorded at this monitoring point, representing a ‘Poor’ water quality status. This has been the score consistently recorded at this location since 1989, with the exception of a Q3-4 (i.e. Moderate status) recorded in 1993 and a Q4 (i.e. Good status) recorded in 1996.

*6.1.3 Identification of Designated Sites within the Zone of Influence of the Development*

The EU Habitats Directive contains a list of habitats (Annex I) and species (Annex II) for which SACs must be established by Member States. Similarly, the EU Birds Directive contains lists of important bird species (Annex I) and other migratory bird species for which SPAs must be established. Those that are known to occur at a site are referred to as ‘qualifying interests’ and are listed in the Natura 2000 forms which are lodged with the EU Commission by each Member State. A ‘qualifying interest’ is one of the factors (such as the species or habitat that is present) for which the site merits designation. The National Parks and Wildlife Service (NPWS) are responsible for the designation of SACs and SPAs in Ireland. In addition, a number of National Heritage Areas (NHAs) deemed to be of special interest due to the habitats present or due to the presence of particular species of flora and fauna which require protection are also identified across the country.

As part of this assessment, an Appropriate Assessment (AA) Screening Report was completed to determine whether the proposed development would negatively impact upon any designated site (see Appendix 4). Based on the findings of this AA screening exercise, it is concluded that

the proposed development on its own or in combination with other developments will not have a significant effect on the Natura 2000 network

## 6.2 Predicated Impacts

An analysis of the predicted effects of the proposed poultry development on the surrounding ecology during both the construction and operation of the facility are presented below.

### 6.2.1 Construction Phase

Given that the construction of the proposed development will not impact on the Natura 2000 or NHA network and that no direct loss of high-quality habitat (i.e. no rare or protected species identified) or habitat fragmentation will occur as a consequence of site works, it is envisaged that the impact on the surrounding ecology will be Imperceptible.

However, due to the moderate importance of the Corlongford Fen (i.e. 'D Rating' – Local Conservation Value) the development has the potential to have a small indirect adverse impact if left unmitigated:

- Accidental spillage of diesel fuel and hydraulic oil from site machinery during the construction phase has the potential to contaminate the underlying aquifer, thus impacting on the wetlands in the locality; and
- Similarly, improper storage of fuels and hazardous materials (i.e. hydrocarbon products) needed during the construction of the development has the potential to contaminate the underlying aquifer, thus impacting on the wetlands in the locality.

### 6.2.2 Operational Phase

Since there will be no discharge other than rainwater from the site, it is not envisaged that the activities conducted during the operation of the facility will not pose a significant risk to the aquatic ecology of the Aghnaglogh Stream / Clontibret Stream. However, there is the potential the following could contribute to an adverse ecological impact if left unmitigated:

- Introduction of rodents which can have a detrimental effect on animal welfare;
- Accidental spillage of diesel fuel and hydraulic oil from site machinery during the operational phase has the potential to contaminate the underlying aquifer and subsequently the Corlongford Fen or Aghnaglogh Stream via a base flow pathway;
- Improper storage and disposal of hazardous materials onsite (i.e. fluorescent tubing containing mercury); and
- Over application of organic manure and soiled water to farming lands leading to runoff of nutrients and subsequent enrichment of surface water bodies in the proximity of receiving land banks.

### 6.3 Mitigation Measures

It has been determined that following the implementation of the proposed mitigation measures, all potential impacts associated with the development can be classed as Imperceptible. These measures will include:

- The implementation of a rodent control programme;
- Good housekeeping including the regular cleaning of the feed storage areas and the removal of dead chickens off site by College Proteins Ltd;
- Spill kits to be maintained onsite to ensure that any spillages or leakages are dealt with immediately;
- Temporary bunds for oil/diesel storage tanks will be used onsite during the construction phase of the project;
- All waste generated during the construction and operation of the facility should be properly segregated and stored onsite prior to disposal;
- To prevent accidental releases, no hydrocarbons or toxic chemicals should be stored in close proximity to any drain or watercourse. Similarly, waste storage containers / areas should be located away from drains and watercourses;
- Storm water drainage infrastructure will be maintained onsite to collect and dispose of all roof rainwater. In turn this will minimise the generation of soiled / wastewater required for disposal;
- Daily visual inspection of stormwater discharge point, with water quality samples when required;
- A soiled water tank of sufficient capacity (i.e. 36.5m<sup>3</sup>) will be maintained onsite to provide adequate storage of wash waters;

- The over application of organic manure to agricultural lands will not occur as all organic manure generated on-site will be removed off-site by George Coulson and Sons Ltd. (registered contractor with the Department of Agriculture, Food & Marine);
- All soiled / wash waters generated during the cleaning phase of operations will be applied to suitable land banks owned by the applicant's father in accordance with the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2017 S.I. No. 605 of 2017. A nutrient management assessment is included in the mitigation section of the Soils, Geology and Hydrogeology chapter of this E.I.A.R: and
- A new boundary hedgerow consisting of 30m of Whitetorn (*Crataegus monogyna*) and Beech (*Fagus*) will be planted to the east of the new concrete yard. This will have a positive impact on the local ecology and will in the long term, compensate for the loss of the singular Sycamore tree (*Aceraceae*) scheduled for removal.

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## 7.0 ARCHAEOLOGICAL & CULTURAL HERITAGE

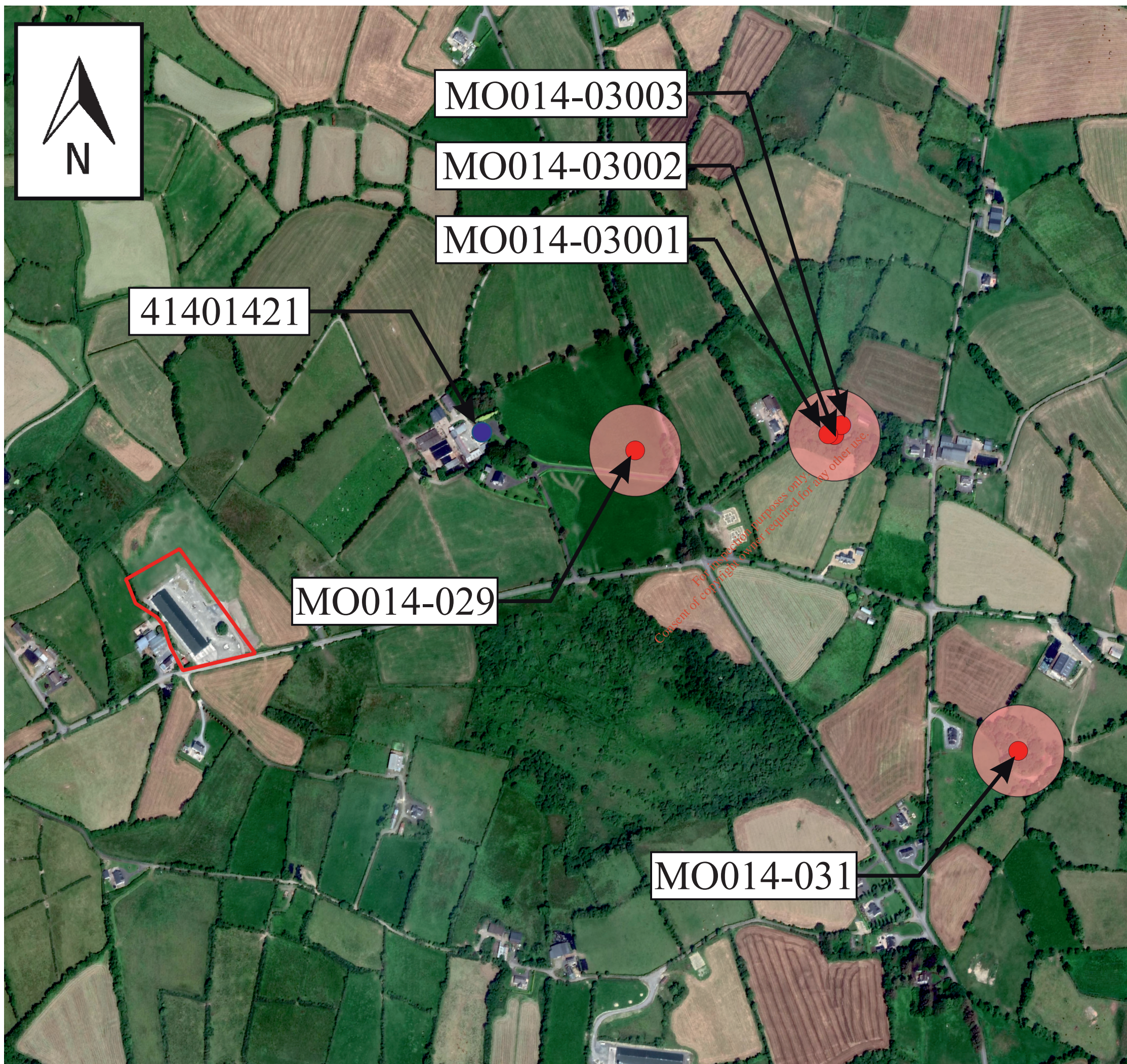
### 7.1 Environmental Setting

Both the National Monuments Service and the National Inventory of Architectural Heritage’s records were reviewed to assess whether the development will have an archaeological or cultural impact. A number of architectural heritage and cultural heritage sites were recorded within a 1km radius of the site (see Table 5 & Figure 4).

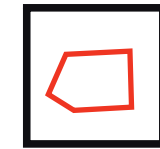
As can be seen from Figure 4, Glebe House (Ref. No 41401421) is the closest architectural heritage site to the proposed development location. This building constructed in the 1770’s and originally used as a rectory / vicarage is categorised as being of regional importance. The closest archaeological / monument feature to the site is a ringfort – Rath (Ref. No MO014-029) located in the townland of Terrygeely. A second ringfort – Rath (Ref. No MO014-031) is located approx. 1km to the southeast, within the townland of Eisquigney. A cluster of three further recorded sites are found approx. 830m – 860m from the site, including the ruins of St. Patrick’s Church of Ireland and a graveyard associated with the medieval parish church of Tullycorbet.

**Table 5. Archaeological & cultural sites within a 1km radius of the proposed development**

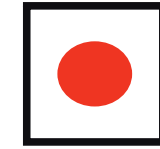
Archaeological / Cultural Feature	Reference No.	Distance of Zone of Contribution Boundary from Building Footprint
Glebe House	41401421	430m
Architectural Fragment	MO014-030003	830m
Graveyard	MO014-030002	850m
Church	MO014-030001	860m
Ringfort - Rath	MO014-029	590m
Ringfort - Rath	MO014-031	1.0km



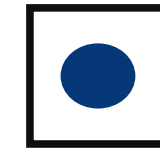
## LEGEND



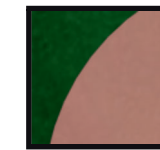
Site Boundary



National Monuments Site



Architectural Heritage Site



Zone of Notification



### PROJECT:

Environmental Impact Assessment Report -  
Stephen Moffett -  
Corlea, Ballybay, Co. Monaghan

### TITLE:

Location of National Monuments Sites and  
Architectural Heritage Sites within proximity  
of the site.

### SCALE:

1:5,000

### DRAWN BY:

PMcC

### DRAWING NO:

Figure 4.

### REV.

0

## 7.2 Predicated Impacts

As no development will occur outside of the site's boundary, it is not envisaged that the archaeological or cultural heritage sites located outside of the confines of the site will be impacted upon. No structural development will occur within or in close proximity to any protected feature or their corresponding buffer zones / zones of notification. Therefore, it can be concluded that the impact of the proposed development on the cultural heritage of the area will be imperceptible. It is understood that Glebe House, is currently utilised as a private dwelling, thus it is important that any environmental health impacts are also considered for this receptor. An assessment of such is included in Section 8.

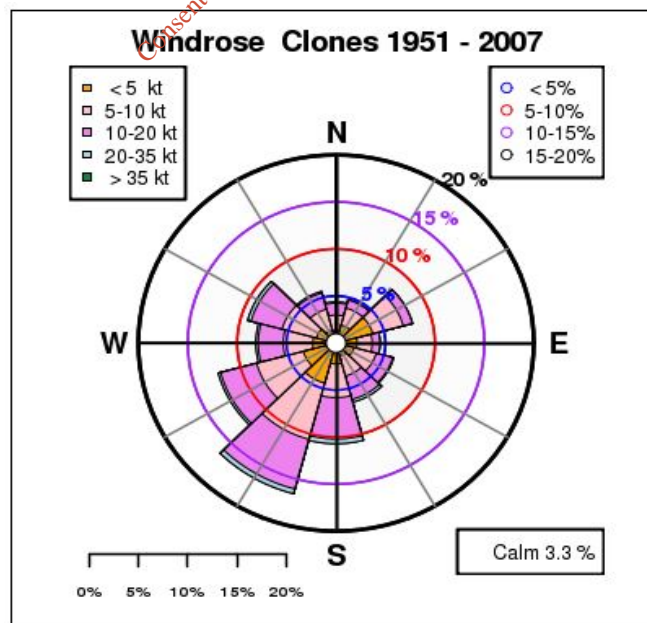
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## 8.0 AIR, CLIMATE & NOISE

### 8.1 Environmental Setting

#### 8.1.1 Climate

According to the Koppen Climate Classification System, Ireland’s climate is defined as a temperate oceanic climate (Cfb), which can be described as being mild, moist and changeable with abundant rainfall and a lack of temperature extremes. Climatic parameters such as wind and rain can have a serious effect on the magnitude of environmental impact arising from agricultural developments. The nearest operational Met Eireann synoptic weather station to the area is located in Ballyhaise, Co. Cavan, 30km from the site. However, from 1957 - 2008, a meteorological weather station was operational in Clones, Co. Monaghan, 21km from the site. The World Meteorological Organization (WMO) recommends that climate averages are computed over a 30-year period of consecutive records to ensure that annual variations are smoothed out. Given a lack of 30 years of recorded data at the Ballyhaise weather station, the climatic data from Clones has been reviewed. As can be seen from the wind rose chart produced from the data obtained at the Clones weather station (1957 – 2007), the prevailing wind direction for the area is south-westerly (see Plate 3). In addition to the 25 synoptic weather stations in Ireland, a rainfall observational network containing just under 500 rain gauges across the country are monitored by Met Eireann. The closest of these gauges is located in Castleshane, approx. 6km from the site. The total annual precipitation recorded for 2019 at the station was determined to be 1,060mm (see Appendix 5).



**Plate 3. Windrose for Clones meteorological station**

### 8.1.2 Air Quality

Under the Clean Air for Europe Directive, EU member states must designate ‘Zones’ for the purpose of managing air quality. For Ireland, four zones were defined in the Air Quality Standards Regulations (2011) and amended on the 1<sup>st</sup> of January 2013. The proposed development site is located in ‘Zone D: Rural Ireland’. The closest EPA air quality monitoring station is located approx. 11.5km from the site at Kilkitt Water Works, Ballybay, Co. Monaghan. Parameters including PM<sub>10</sub>, sulphur dioxide, oxides of nitrogen and ozone are monitored in real-time, with the data obtained used to update the Air Quality Index for Health (AQIH) on an hourly basis. At the time of writing, the current air quality at Kilkitt was deemed to be ‘Good’ (see SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, PM<sub>10</sub>, heavy metals and Benzo(a)pyrene results included in Appendix 6).

### 8.1.3 Noise

Environmental noise means unwanted or harmful outdoor sound created by human activities, The Environmental Noise Directive (END), EC 2002/49/EC, was transposed into Irish Law as Statutory Instrument, S.I. 1401 of 2006, Environmental Noise Regulation 2006. The Directive requires Member States to prepare and publish, every 5 years, noise maps and noise management action plans. In accordance with the requirements of the Noise Directive the EPA has made available the strategic noise mapping of major agglomeration airports, major roads and major rail networks, in the form of noise contours for the Lden (day, evening, night) and Lnight (night) periods. The closest noise maps to the site have been developed for the N2 national road. As the proposed development site is located well outside the noise mapping extents for the N2, it is not envisaged that noise generated from the N2 is impacting on the site.

## 8.2 Predicated Impacts

### 8.2.1 Construction Phase (Air & Climate)

- Emissions with the potential to cause climate change include carbon dioxide CO<sub>2</sub>, which will arise from vehicles delivering construction materials to the site.

### 8.2.2 Construction Phase (Noise)

It is estimated that the construction of the development will take approx. 3 - 4 months to complete. Principle sources of noise generated during the construction stage, will arise from vehicular movements and the operation of power equipment. However, it is not envisaged that these sources will cause a nuisance or exceed legal limits outside the site boundary.

### 8.2.3 Operational Phase (Air & Climate)

In general, agricultural atmospheric emissions are dominated by methane (CH<sub>4</sub>). The amount of CH<sub>4</sub> emitted by livestock is a considerably higher for ruminants such as cattle and sheep versus non-ruminants such as poultry.

An assessment of the air emissions from the proposed development using the SCAIL (Simple Calculation of Atmospheric Impact Limits) – Agricultural model was completed. The tool has been designed to specifically deal with emissions from pig and poultry buildings and has been developed to evaluate the impact of NH<sub>3</sub> emissions on habitat sites and the impact of PM<sub>10</sub> emissions on human health.

A SCAIL model was run by Hydrec Environmental Consulting in order to predict the atmospheric emissions of ammonia / nitrogen and potential impact on the Slieve Beagh SAC / SPA and Magheraveely Marl Loughs SAC from the proposed facility. The results of the SCAIL model are included in Tables 3 & 4 on the AA Screening Report found in Appendix 4. As can be seen from Table 3 and Table 4, the % critical level / loads from the proposed development for ammonia and nitrogen ranges from 0.3% - 0.8% at the respective Natura 2000 sites. Thus, given the % critical level is at or below 0.8% (i.e. worst-case scenario based on conservative meteorological conditions), the contribution of ammonia from the proposed development is deemed to be negligible (Institute of Air Quality Management - A guide to the assessment of air quality impacts on designated nature conservation sites, May 2020).

The closest human health receptor to the site (i.e. those outside the ownership of the applicant's family), is a community hall located approx. 110m to the east of the development. Glebe House located 430m to the north east has also been designated as a potential receptor. Following the application of the SCAIL modelling software, it was determined that the process contribution (PC) of PM<sub>10</sub> at the edge of both receptors as a result of the proposed development equated to 3.13 PM<sub>10</sub> µg/m<sup>3</sup> and 0.78 PM<sub>10</sub> µg/m<sup>3</sup> respectively. Background concentrations at each receptor was determined to be 4.18 PM<sub>10</sub> µg/m<sup>3</sup>, therefore the total PM<sub>10</sub> concentration at each receptor was calculated at 7.31 PM<sub>10</sub> µg/m<sup>3</sup> (i.e. community hall) and 4.96 PM<sub>10</sub> µg/m<sup>3</sup> (i.e. Glebe House), post development. This value is substantially lower than the 40 µg/m<sup>3</sup> annual mean limit stipulated in the Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011).

Odour emissions from the site are not perceived to cause a nuisance outside of the site boundary with the possible exception of a brief small adverse effect during times of manure disposal (i.e. 7 occasions per annum). Furthermore, the closest third-party human receptor (i.e. community

hall) to the existing poultry house is located 110m to the east, while the prevailing wind direction is south westerly (see Plate 3). However, potential operational impacts associated with the proposed development if left unmitigated include:

- Emissions with the potential to cause climate change include carbon dioxide CO<sup>2</sup>, which will arise from vehicles delivering birds, feed and litter to the site or removing manure from the site.
- Odour emissions during times of manure removal; and
- Odour emissions arising from poor farm management (i.e. poor housekeeping (e.g. odour generated from damp feed supplies) and build-up of dead chickens onsite.

#### *8.2.4 Operational Phase (Noise)*

Poultry farming is a traditional agricultural type enterprise operated in rural County Monaghan. Noise pollution is not a complaint commonly reported as a consequence of this type of enterprise. During the construction stage, the principal sources of noise will arise from vehicular movements and the operation of power equipment. However, it is not envisaged that these sources will cause a nuisance or exceed legal limits outside the site boundary.

### **8.3 Mitigation Measures**

It has been determined that following the implementation of the proposed mitigation measures, all potential impacts associated with the development can be classed as imperceptible. These measures will include:

- All machinery or delivery/collection vehicles to be turned off when not in use (e.g. no idling of delivery lorries when being unloaded);
- All manure to be immediately removed offsite once loaded into trailers. In addition, all trailers assigned to this task will be properly designed and covered;
- A check for deceased chickens within the stock will occur twice daily. All dead chickens to be stored in 240 litre sealed wheelie bins and removed offsite by College Proteins Ltd.;
- Regular cleaning of feed storage areas and concrete aprons to front and sides of houses; and
- Each house to be properly insulated to reduce energy consumption.

## 9.0 LANDSCAPE & VISUAL ASSESSMENT

### 9.1 Environmental Setting

County Monaghan contains a variety of landscapes. At local authority level, landscape character areas (LCAs) are the individual areas where more detailed landscape character types occur. Based on the Landscape Character Assessment prepared by Monaghan County Council in 2008, 9 LCAs have been defined within the county. The proposed development site is located within the *LCA 5: Monaghan Drumlin Uplands*. This character area extends across almost the entire width of the county. It is an upland landscape comprising upland drumlins and drumlin foothills. The key characteristics of this LCA are:

- Elevated landscape featuring drumlin hills and small to medium sized loughs;
- Occasional rock outcrops on the eastern side near the townland of Annyalla;
- Occasional loughs and areas of marshland located between drumlin hills
- Hedgerows featuring native species define the field boundaries, some of these are cut and some are not cut or managed. Hedge trees are fairly frequent; and
- Long ranging views to the south and the north can be gained at particular points along the highest elevations of this ridgeline.

The LCA deems that the summit or highest point along the ridgeline in the landscape is likely to be highly sensitive to development because it is visually exposed for many kilometres. Specific sites that carry landscape and ecological designations in the area include:

#### *Areas of Secondary Amenity value*

- **SA 5:** Rossmore Forrest Park and Environs
- **SA 6:** Ulster Canal and Environs

#### *Views from scenic routes*

- **SV 9:** View of St Macartans Cathedral Monaghan from Berry Brae (Route R162)



### *Ecological Designations – Proposed NHAs*

- Wrights Wood (NPWS site code 001612)
- Lisarilly Bog (NPWS site code 001781)
- Rafinny Lough (NPWS site code 001606)
- Cordoo Lough (NPWS site code 001268)
- Drumcor Lough (NPWS site code 001841)

### **9.2 Predicted Impacts**

Given that it has been determined that the *Monaghan Drumlin Uplands* would be sensitive to certain development (i.e. top of hills), it is important that all future developments are appropriately integrated and sympathetic with the surrounding landscape. It is not envisaged that the proposed development will be intrusive on the landscape, given its lower setting (i.e. inter drumlin) and positioning adjacent to existing agricultural buildings. Additionally, the development will not be visible from any scenic routes, areas of ecological designation or areas of secondary amenity value. Therefore, it can be concluded that the impact of the proposed development on the surrounding landscape will be imperceptible.

### **9.3 Mitigation Measures**

The following additional measures are proposed to enhance the development's integration into the existing landscape:

- A new boundary hedgerow consisting of 30m of Whitetorn (*Crataegus monogyna*) and Beech (*Fagus*) will be planted to the east of the new concrete yard;
- The finished floor level (F.F.L) of 137.46m AOD has been set to match that of the existing poultry house, thus ensuring that the new development is integrated within the existing landscape; and
- Dark green box profile corrugated cladding has been specified for the new buildings to ensure that the development is sympathetic to the surroundings.

## 10.0 MATERIAL ASSETS

### 10.1 Introduction

This chapter considers and assesses the potential impacts on the material assets of the surrounding area during the construction and operational phases of the proposed project. Subsequent to Directive 2014/52/EU, the material assets factor can now be taken to mean built services and infrastructure. Traffic is included because in effect traffic consumes roads infrastructure. Therefore, the material assets that are considered include:

- Built services & Utilities;
- Natural resources;
- Roads & traffic;
- Waste Management;
- Surrounding properties; and
- Surrounding agricultural holdings

Potential impacts relating to land take are detailed in the Soils & Geology chapter (Section 4).

### 10.2 Predicted Impacts

An analysis of the predicted effects of the proposed poultry development on the surrounding material assets during construction and operation is presented below.

#### 10.2.1 Construction Phase

It is anticipated that the construction of the proposed development will take approx. 3 – 4 months to complete. A limited quantity of natural resources (e.g. quarried materials, timber etc.) will be required to complete the construction of the project, however given the scale of the development, it is not envisaged that this will result in a negative impact. Given the scale of the development and duration of the proposed construction activities, it is not predicated that there will be an adverse impact on the local road infrastructure as the site is well serviced by the local road network. As the construction of the proposed development will be contained within the confines of the site boundary and will not interact with the surrounding lands/properties, it is not envisaged that there will be an impact on third party residences, commercial, residential, or agricultural land holdings. As mentioned previously, odour emissions from the site are not perceived to cause a nuisance outside of the site boundary with

the possible exception of a brief small adverse effect during times of manure disposal (deemed to be low risk, given that manure removal occurs 7 times per annum and most local sensitive receptor is not directly downwind of the prevailing winds). Nevertheless, the following impacts could have an effect on the surrounding material assets if left unmitigated during the construction phase:

- Odour issues as described in Section 9.2;
- Issues surrounding the mismanagement of construction and demolition (C&D) waste generated during the construction process. This may lead to surface water, groundwater and soil contamination which subsequently may have an ecological or human health impact. Improper disposal may also impinge upon the landscape causing a visual impact; and
- Inappropriate sourcing of construction materials.

#### *10.2.2 Operational Phase*

As the operation of the proposed development will be contained within the confines of the site boundary and will not negatively interact with the surrounding lands/properties, it is not envisaged that there will be an adverse impact on third party residences, commercial, residential, or agricultural land holdings. The use of the poultry manure generated onsite as an organic fertiliser by the tillage farming community has the potential for a positive impact on third party agricultural lands.

Once operational, an increase of traffic frequenting the site (i.e. currently greenfield) will increase. This will include feed deliveries, gas supply, manure transport, bird deliveries/collections and collection of mortalities. A conservative estimation of the volume of traffic associated with the enterprise includes:

- Circa 6 meal deliveries per 6-week batch (i.e. calculated based on an animal consumption of approx. 25 tonnes of meal per week and a lorry capacity of 28 tonnes);
- Circa 6 manure removal runs per 6-week batch (i.e. calculated based on a total annual manure production of 2,024m<sup>3</sup> or 1,014 tonnes (bulk density of 500kg/m<sup>3</sup>) and a lorry capacity of 30 tonnes);
- Circa 25 lorry runs per 6-week batch relating to bird deliveries/collections, gas and wood shaving deliveries; and

- Circa 3 mortality collections per 6-week batch (i.e. calculated based on a fortnightly collection).

Based on the above information, it is calculated that a total of c. 280 additional truck movements per annum to and from the site will occur once operational. This equates to an average total of c.7 vehicular movements per week. Consequently, it is not predicated that this will cause an adverse impact on the local road infrastructure.

It is not envisaged that the organic waste (i.e. poultry manure and soiled water) produced onsite will cause an environmental impact as it is proposed to be handled in accordance with the Nitrates Directive (S.I 605 of 2017). Discarded spent fluorescent lighting tubes are the only potential source of hazardous waste onsite and as such will need to be disposed of in accordance with the WEEE Directive 2012/19/EU.

Electrical services are located in close proximity to the proposed development site and given the scale of the development it is not envisaged that any pressures will be exerted on these utilities as a consequence. Heating within the poultry house will be also be required at certain intervals, however the facility has been designed in accordance with BAT and will be sufficiently insulated thus reducing energy consumption. In addition, all poultry onsite will consume a meal-based diet which is deemed as a renewable natural resource. Therefore, the proposed development during the operational stages is not determined to cause a negative effect on natural resources.

### 10.3 Mitigation Measures

It has been determined that following the implementation of the proposed mitigation measures, all potential impacts associated with the development can be classed as imperceptible. These measures will include:

- Odour mitigation as described in Section 8.3;
- All C&D waste to properly segregated onsite during the construction phase and disposed of in accordance with the Waste Management Act 1996 (S.I. 10 of 1996);
- The removal of manure offsite by a registered contractor and the application of soiled waters onto the applicants lands according to S.I 605 of 2017 as described in Section 5.4

- Spent fluorescent light tubes will be stored in a bunded container prior to disposal in accordance with the WEEE Directive 2012/19/EU;
- Traffic to and from the site will be minimised by optimising load sizes;
- The poultry unit will be sufficiently insulated so as to reduce electric consumption; and
- The poultry house will be designed and built in accordance with BAT, including the installation of a nipple drinking system to minimise water wastage.

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## 11.0 POPULATION & HUMAN HEALTH

### 11.1 Introduction

The recitals to the 1985 and 2011 E.I.A Directives refer to human health and include ‘Human Beings’ as the corresponding environmental factor. The 2014 E.I.A Directive changes the title of this factor to Population and Human Health’. The 2017 E.I.A.R Draft Guidelines outline typical headings under which environmental factors such as ‘Population & Human Health’ could be addressed. These include employment, human health and amenity. It should be noted that effects on amenity is discussed in the Landscape and Visual Impact chapter (Section 9).

### 11.2 Predicted Impacts

Upon completion of the development, secure full-time employment will be afforded to the applicant, as well as occasional part time work for members of the community. In addition, this enterprise will enhance job security to those offering services and working as suppliers/contractors to the farm (e.g. employees of Manor Farm, George Coulson & Son Ltd, College Proteins Ltd etc.). This represents a positive impact on human health and population. A number of potential impacts on human health and population have been identified in previous sections if left unmitigated. These include;

- Impact on drinking water supplies from contaminated groundwater arising from the construction and operational phases of the development; and
- Nuisance caused by odour emissions during the operational phase.

### 11.3 Mitigation Measures

It has been determined that following the implementation of the proposed mitigation measures, all potential impacts associated with the development can be classed as imperceptible. These measures have been described previously and will include:

- Mitigation measures designed to prevent hydrogeological contamination (see Section 4.3);
- Mitigation measures designed to prevent hydrogeological contamination via improper disposal of C&D wastes (see Section 9.3); and
- Mitigation measures designed to prevent odour migration issues offsite (see Section 8.3).

## 12.0 INTER-RELATIONSHIPS & CUMULATIVE EFFECTS

### 12.1 Inter-Relationships

The European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1999 stipulates the interaction between impacts on different environmental factors should be assessed. Table 6 includes a matrix to show where interactions between effects on different factors have been identified.

#### Soils & Geology

Should soil contamination occur during the construction or operational phase of the development, it has the potential to cause an adverse impact on the surrounding *hydrogeology*, *hydrology* and *ecology*. Pursuant to the proposed mitigation measures being implemented the aforementioned inter-relationships will have a neutral impact on the environment.

#### Hydrogeology

Should the underlying aquifer get contaminated and enriched during the construction or operational phase of the development, it has the potential to cause an adverse impact on the surrounding *hydrology* via baseflow and subsequent indirect alteration to *aquatic ecology* (*Aghnaglogh Stream*) and *Terrestrial Ecology* (*Corlongford Fen*). In addition, contamination in the groundwater has the potential to impact upon *human health*, should future borehole installations in the vicinity of the site become contaminated. Pursuant to the proposed mitigation measures being implemented the aforementioned inter-relationships will have a neutral impact.

#### Hydrology

Should contamination or nutrient enrichment occur during the construction or operational phase of the development, it has the potential to cause an adverse impact on the *aquatic ecology* of the Clontibret Stream system. Consequently, algal blooms caused due to eutrophication, has the potential to adversely impact on the landscape. Pursuant to the proposed mitigation measures being implemented the aforementioned inter-relationships will have a neutral impact on the environment.

### Ecology

The inter-relationships between ecology and the other environmental factors have been described under the previous headings.

### Archaeological & Cultural Heritage

Should the recorded sites within the vicinity of the site be affected, it has the potential to have an adverse impact on the *Landscape*. Pursuant to the proposed mitigation measures being implemented the aforementioned inter-relationships will have a neutral impact.

### Air, Noise & Climate

Should odour emissions occur during the operational phase of the development, it has the potential to cause an adverse impact on the surrounding *population and human health (i.e. community hall) and Archaeological & Cultural Heritage (i.e. Glebe House)*. Pursuant to the proposed mitigation measures being implemented the aforementioned inter-relationships will have a neutral impact on the environment.

### Landscape & Visual Impact

The inter-relationships between the landscape and *hydrology/ecology* have been described under the previous headings. In addition, improper waste disposal (i.e. *material assets*) can impact on the surrounding landscape. Pursuant to the proposed mitigation measures being implemented the aforementioned inter-relationships will have a neutral impact on the environment.

### Material Assets

Should the improper disposal of C&D waste occur during the construction phase or the should organic wastes be mishandled during the operational phase of the development, this has the potential to cause a direct adverse impact on the surrounding *soils, hydrogeology, hydrology, landscape and air quality* with subsequent indirect impacts on *ecology and human health*.

### Population & Human Health

The inter-relationships between population and human health and the other environmental factors have been described under the previous headings (i.e. contaminated groundwater/drinking water and impact on air quality).



## 12.2 Cumulative Effects

It is not anticipated that the proposed development will when combined with other projects, result in a cumulative impact that is collectively significant. The SCAIL modelling assessment confirms that development will not cause a deterioration in air quality in respect of the Magheraveely Marl Loughs SAC, Slieve Beagh SPA / SAC or from a human health perspective. It has been demonstrated that the facility can sustainably dispose of all soiled waters in compliance with S.I. 605 of 2017 and therefore it is not likely that any deterioration in surface water quality will result from the operation of the development.

## 12.3 Do-Nothing Scenario

The do-nothing scenario in relation to the proposed development will not result in any change in the surrounding hydrogeology, hydrology, air quality, noise quality, climate conditions, landscape and cultural heritage. The main impact on the human environment if the proposed development does not proceed is the loss of direct and indirect employment opportunities. In addition, the production of poultry manure and application to tillage farmlands as an organic fertiliser represents a slight positive impact on soils which would be lost if the development did not proceed (i.e. valuable in terms of both nutrient & organic matter content). A new hedgerow >30m will be planted creating a slight positive impact on the local ecology. Failure of the proposed development to proceed would result in a loss of this ecological benefit.

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### 13.0 SUMMARY OF ENVIRONMENTAL IMPACTS

No significant adverse residual effects are likely to occur through in-combination and/or cumulative impacts (see Table 7). Any effects identified can be mitigated through management of the construction and operation process by adherence to the mitigation measures set out in this E.I.A.R together with any conditions/restrictions in any approval/consent as may be granted.

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## Table 6. Matrix Indicating Inter-Relationships Between EIA Factors

Interaction	Soils & Geology		Hydrogeology		Hydrology		Ecology		Archaeological & Cultural Heritage		Air, Climate & Noise		Landscape & Visual Impact		Material Assets		Population & Human Health	
	Cons.	Op.	Cons.	Op.	Cons.	Op.	Cons.	Op.	Cons.	Op.	Cons.	Op.	Cons.	Op.	Cons.	Op.	Cons.	Op.
Soils & Geology			✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✓	✓	✗	✗
Hydrogeology					✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓
Hydrology							✓	✓	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓
Ecology									✗	✗	✗	✗	✓	✗	✓	✓	✗	✗
Archaeological & Cultural Heritage											✓	✓	✗	✗	✗	✗	✗	✗
Air, Climate & Noise													✗	✗	✓	✓	✓	✓
Landscape & Visual Impact															✓	✓	✓	✓
Material Assets																	✓	✓
Population & Human Health																		

Cons.	Construction Phase
Op.	Operational Phase
✗	No Interaction
✓	Interaction Identified



# Table 7. Summary of Effects Pre Mitigation and Post Mitigation

Feature			Effect Assessment				
Environmental Factor	Name	Importance	Magnitude of Effect	Criteria for Effect Assessment	Significance of Effect	Duration of Effects	Residual Effects After Mitigation
Soils & Geology	Agricultural Pasture Land	Low	Small Adverse	Land take	Imperceptible	Long-Term	Imperceptible
	Inert Soil, Subsoil & Bedrock Strata	Low	Small Adverse	Potential for contamination of soil from accidental spillage of fuel etc.	Imperceptible	Short-Term	Imperceptible
Hydrogeology	Keady Groundwater Body	High (i.e. 'Good' Status)	Small Adverse	Potential for contamination of groundwater from accidental spillage of fuel & over application of nutrients	Moderate/Slight	Short-Term	Imperceptible
	Private Groundwater Boreholes	Low	Small Adverse	Potential for contamination of groundwater from accidental spillage of fuel & over application of nutrients	Imperceptible	Short-Term	Imperceptible
Hydrology	Aghnaglogh Stream	High (WFD requires all surface water bodies to achieve 'good' status)	Small Adverse	Potential for contamination of groundwater from accidental spillage of fuel & over application of nutrients	Moderate/Slight	Short-Term	Imperceptible
Ecology	Corlongford Fen	Medium	Small Adverse	Potential for contamination of groundwater from accidental spillage of fuel & over application of nutrients and subsequent deterioration of habitat	Slight	Short-Term	Imperceptible
	Magheraveely Marl Loughs SAC & Slieve Beagh SPA / SAC	Very High	Negligible	Not determined to cause an impact by Appropriate Assessment Screening Report (see Appendix 4)	Imperceptible	-	Imperceptible
Archaeological & Cultural Heritage	Glebe House (Ref No. 41401421)	High	Negligible	Not determined to cause an impact due distance from footprint of the development. (As determined by SCAIL Model)	Imperceptible	-	Imperceptible
Air, Climate & Noise	Community Hall & Surrounding Residence	High	Negligible	Not determined to cause an impact due to distance from proposed development and direction of prevailing winds. (As determined by SCAIL Model)	Imperceptible	-	Imperceptible
Landscape & Visual Impact	Monaghan Drumlin Uplands	High	Negligible	Not determined to cause an impact due to position within the landscape and positioning adjacent to existing poultry unit	Imperceptible	-	Imperceptible
Material Assets	Road Infrastructure	Low	Negligible	Additional lorry movements of c. 7 per week not deemed to cause a significant impact	Imperceptible	-	Imperceptible
Population & Human Health	Community Hall & Surrounding Residence	High	Negligible	Not determined to cause an impact due distance from proposed development	Imperceptible	-	Imperceptible

## APPENDIX 1

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Patrick McCabe &lt;info@hydrec.ie&gt;

---

**EIA Portal Confirmation Notice Portal ID 2021005**

1 message

---

**Housing Eiaportal** <EIAportal@housing.gov.ie>  
To: Patrick McCabe <info@hydrec.ie>

Thu, Jan 7, 2021 at 2:46 PM

A Chara,

An EIA Portal notification was received on 07/01/2021 in respect of this proposed application. The information provided has been uploaded to the EIA Portal on 07/01/2021 under EIA Portal ID number **2021005** and is available to view at <http://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=d7d5a3d48f104ecbb206e7e5f84b71f1>.

**Portal ID:** 2021005**Competent Authority:** Monaghan County Council**Applicant Name:** Stephen Moffett**Location:** Corlea (DED Tullycorbet), Ballybay, Co. Monaghan

**Description:** Stephen Moffett intends to apply for Planning Permission to construct 1 no. broiler type poultry house together with detached storage shed, meal bin, concrete apron and ancillary services and associated site works.

**Linear Development:** No**Date Uploaded to Portal:** 07/01/2021

Regards

Nicole Coughlan

\_\_\_\_\_  
EIA Portal team

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**An Roinn Tithíochta, Pleanála agus Rialtais Áitiúil**

Department of Housing, Planning and Local Government

**Teach an Chustaim, Baile Átha Cliath 1, D01 W6X0**

Custom House, Dublin 1, D01 W6X0

—  
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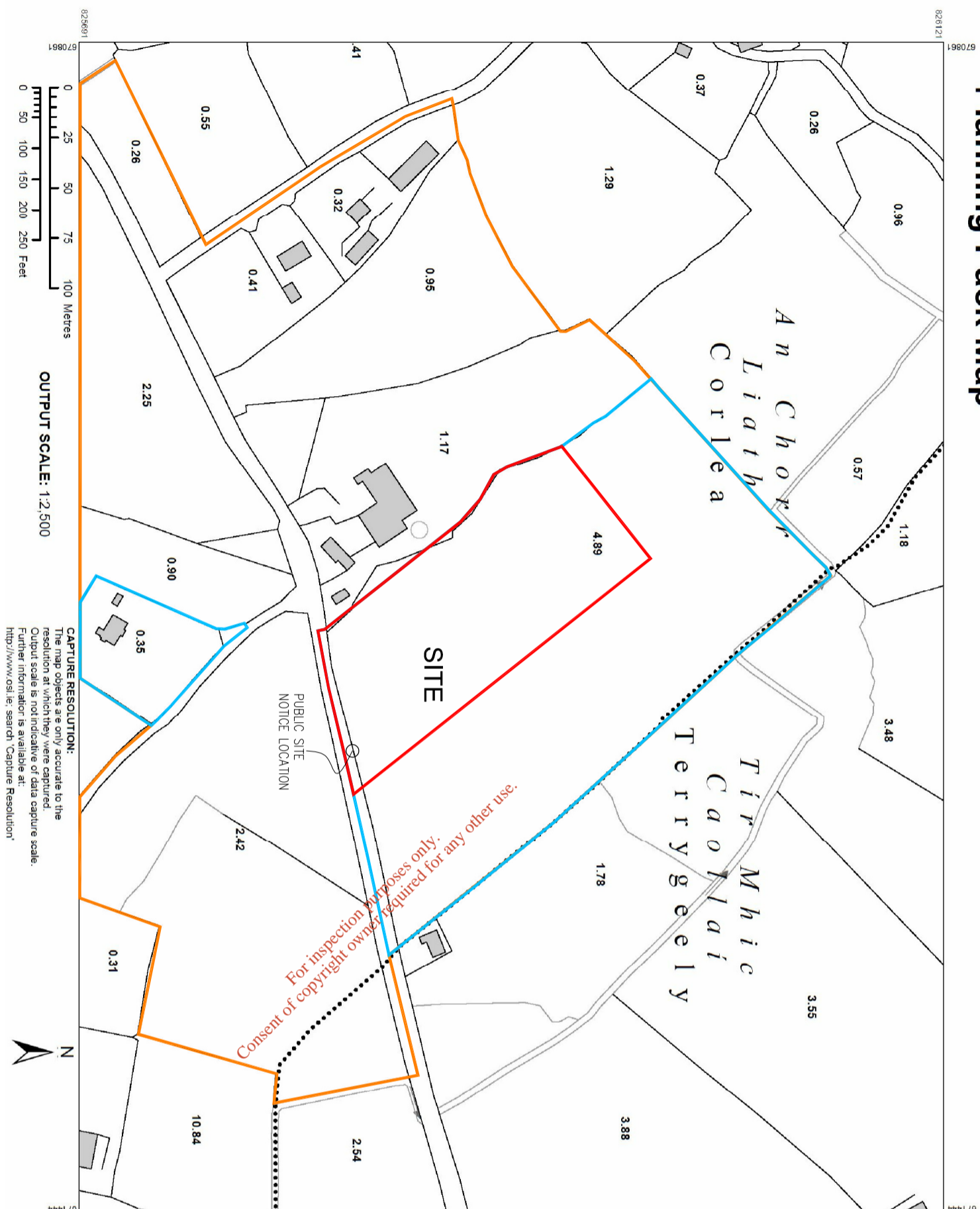
## APPENDIX 2

### ORDNANCE SURVEY OF IRELAND SITE LOCATION MAP

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# Planning Pack Map



**Osí Survey Ireland**  
National Mapping Agency

**CENTRE COORDINATES:**  
ITM 671153,825906

**PUBLISHED:** 20/03/2018 **ORDER NO.:** 50001050\_1

**MAP SERIES:** 1:5,000 **MAP SHEETS:** 1218

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**LEGEND:**  
<http://www.osi.ie/search/LargeScaleLegend>

## SITE LOCATION MAP

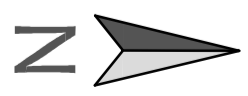
SCALE 1:2500

SITE BOUNDARIES OUTLINED IN RED  
LAND IN OWNERSHIP IN BLUE  
LAND IN APPLICANT FAMILY OWNERSHIP

SITE AREA =  
12,710 sq.m.  
Or 3.14 Acres  
Or 1.271 Ha

# TENDER DRAWING

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**Project:**  
POULTRY HSE. & STORAGE SHED

**Client:**  
Stephen Moffett  
Corleola, Ballybay, Co. Monaghan

**Location:**  
Corleola, Ballybay, Co. Monaghan

**Drawing Title:**  
SITE LOCATION MAP

**Drawing No:**  
466 20 07

**Scale:**  
1:2500 @ A3

**Issued:**  
1st Jan. '21

**CIAT**  
Registered Practice



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## APPENDIX 3

- EXTENT & LOCATION OF LANDS AVAILABLE FOR SOILED WATER APPLICATION

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For Basic Payment Scheme, Areas of Natural Constraint  
Scheme and other Area-Based Schemes Purposes only  
Year: 2020 Scale: 1:3000

Name: ALEX MOFFETT  
Address: CORLEA  
BALLYBAY  
CO MONAGHAN

Townland Code: R16311  
Townland Name: CORLEA

Parcel	Digitised	MEA*	Claimed
R1631100002	1.06	1.06	1.06

Ortho Used: COL\_ORTHO\_FULL\_COV

All areas displayed above are in hectares  
\* MEA calculation available online via agfood.ie

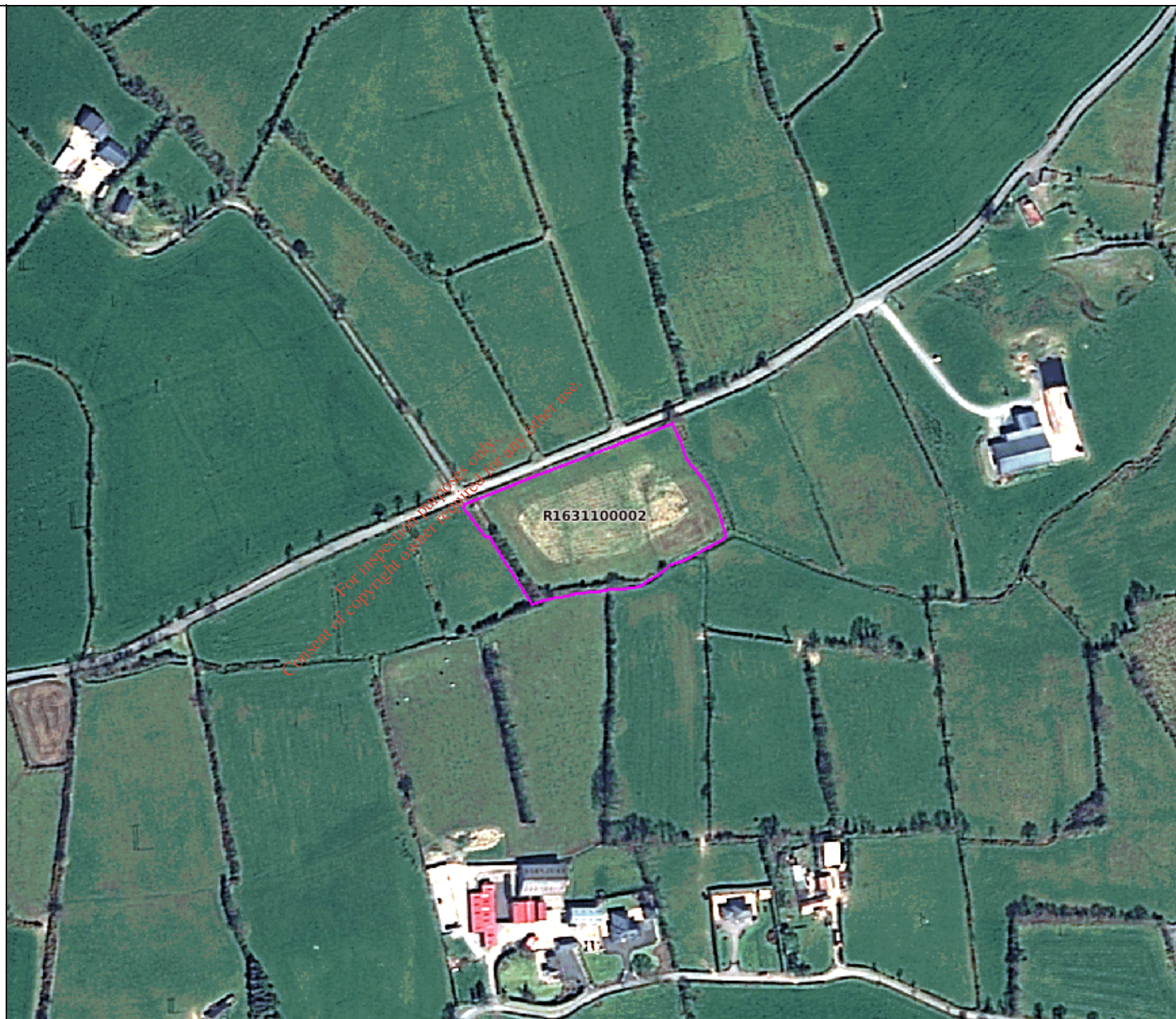
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R1631571

Page 1 of 4 Wed Jan 01 07:02:03 2020





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Scheme and other Area-Based Schemes Purposes only  
Year: 2020 Scale: 1:5000

Name: ALEX MOFFETT  
Address: CORLEA  
BALLYBAY  
CO MONAGHAN

Townland Code: R16311  
Townland Name: CORLEA

Parcel	Digitised	MEA*	Claimed
R1631100011	0.15	0	0
R1631100012	0.05	0	0
R1631100019	0.27	0.27	0.26
R1631100024	2.27	2.23	2.23
R1631100025	3.16	3.16	3.16
R1631100054	4.62	4.58	4.58
R1631100055	0.37	0	0
R1631100056	0.38	0	0
R1631100057	1.08	0	0

Exclusions					
Parcel	Excl	Area	Red%	Elig	Type
R1631100024	0005	0.04	100	0	Hardcore
R1631100054	0023	0.04	100	0	Stream

Ortho Used: COL\_ORTHO\_FULL\_COV

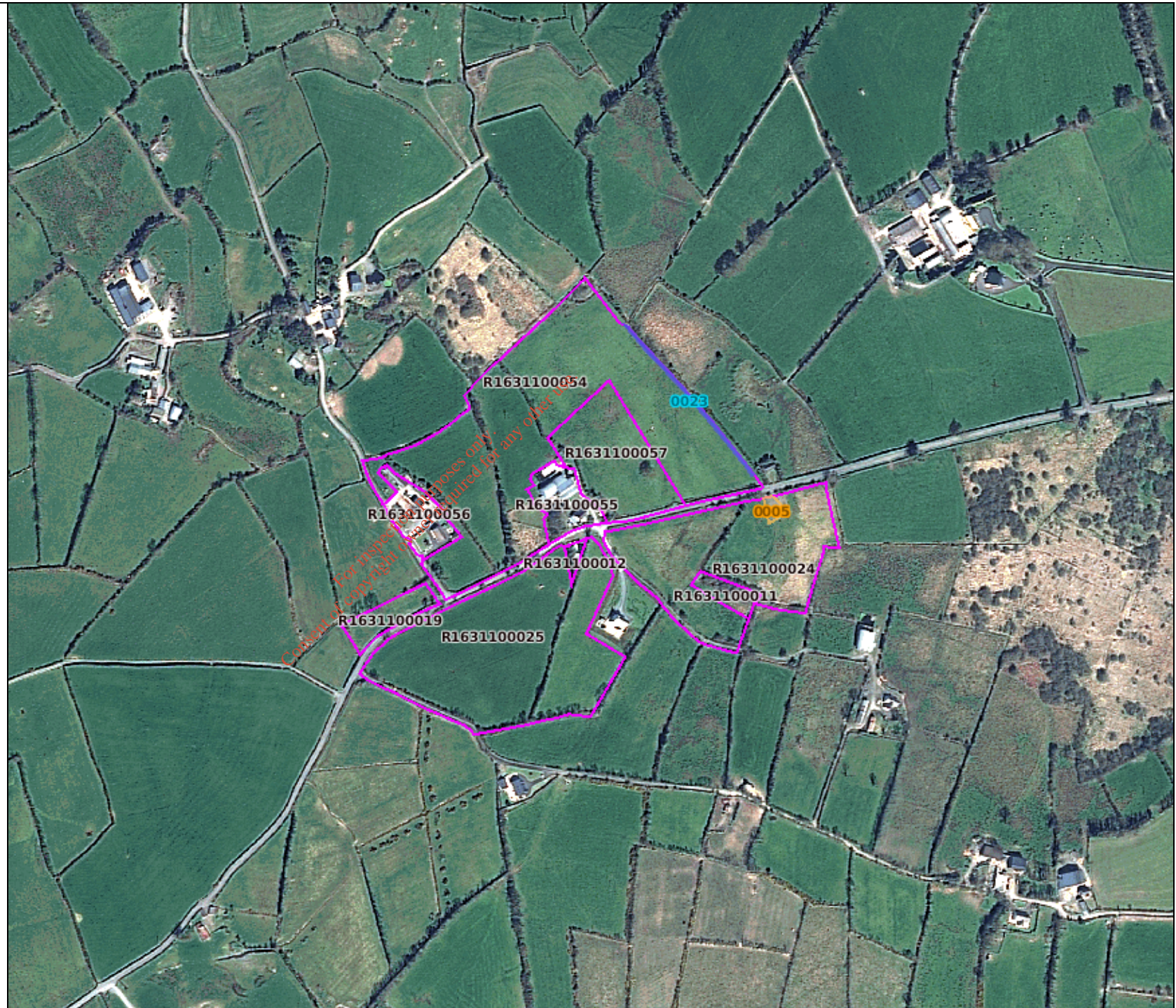
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Scheme and other Area-Based Schemes Purposes only  
Year: 2020 Scale: 1:5000

Name: ALEX MOFFETT  
Address: CORLEA  
BALLYBAY  
CO MONAGHAN

Townland Code: R16311  
Townland Name: CORLEA

Parcel	Digitised	MEA*	Claimed
R1631100009	0.26	0	0
R1631100010	0.11	0	0
R1631100030	12.82	12.74	12.74

Exclusions					
Parcel	Excl	Area	Red%	Elig	Type
R1631100030	0008	0.06	100	0	Scrub
R1631100030	0009	0.02	100	0	Farm Road

Ortho Used: COL\_ORTHO\_FULL\_COV

All areas displayed above are in hectares  
\* MEA calculation available online via agfood.ie

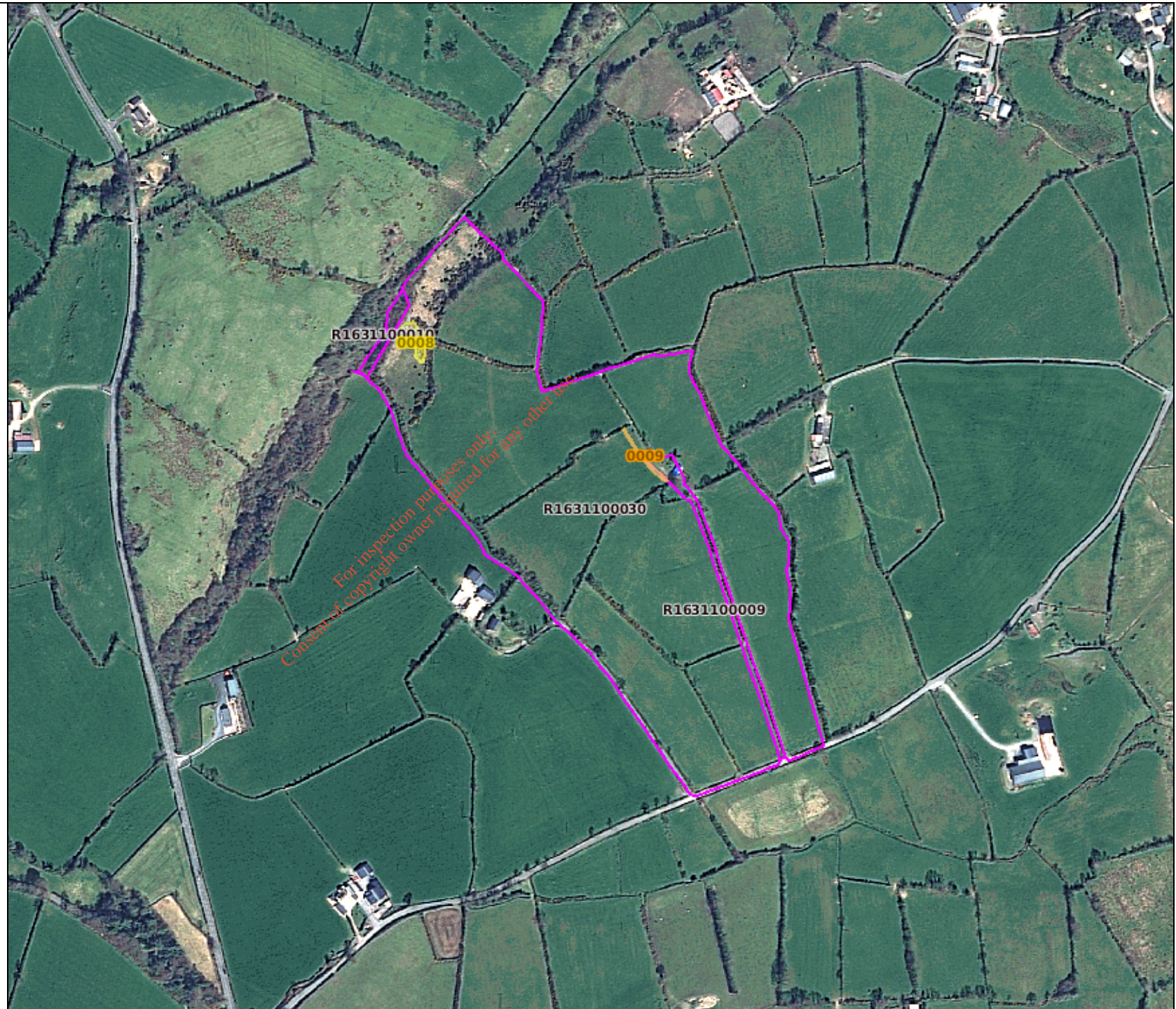
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Scheme and other Area-Based Schemes Purposes only  
Year: 2020 Scale: 1:4000

Name: ALEX MOFFETT  
Address: CORLEA  
BALLYBAY  
CO MONAGHAN

Townland Code: R16334  
Townland Name: SHANMULLAGH

Parcel	Digitised	MEA*	Claimed
R1633400002	1.1	1.1	1.1
R1633400003	0.49	0	0
R1633400006	0.19	0	0
R1633400012	2.98	2.98	2.98
R1633400018	1.76	1.71	1.61

Exclusions	Parcel	Excl	Area	Red%	Elig	Type
R1633400018	0002	0.05	100	0	Farm Road	

Ortho Used: COL\_ORTHO\_FULL\_COV

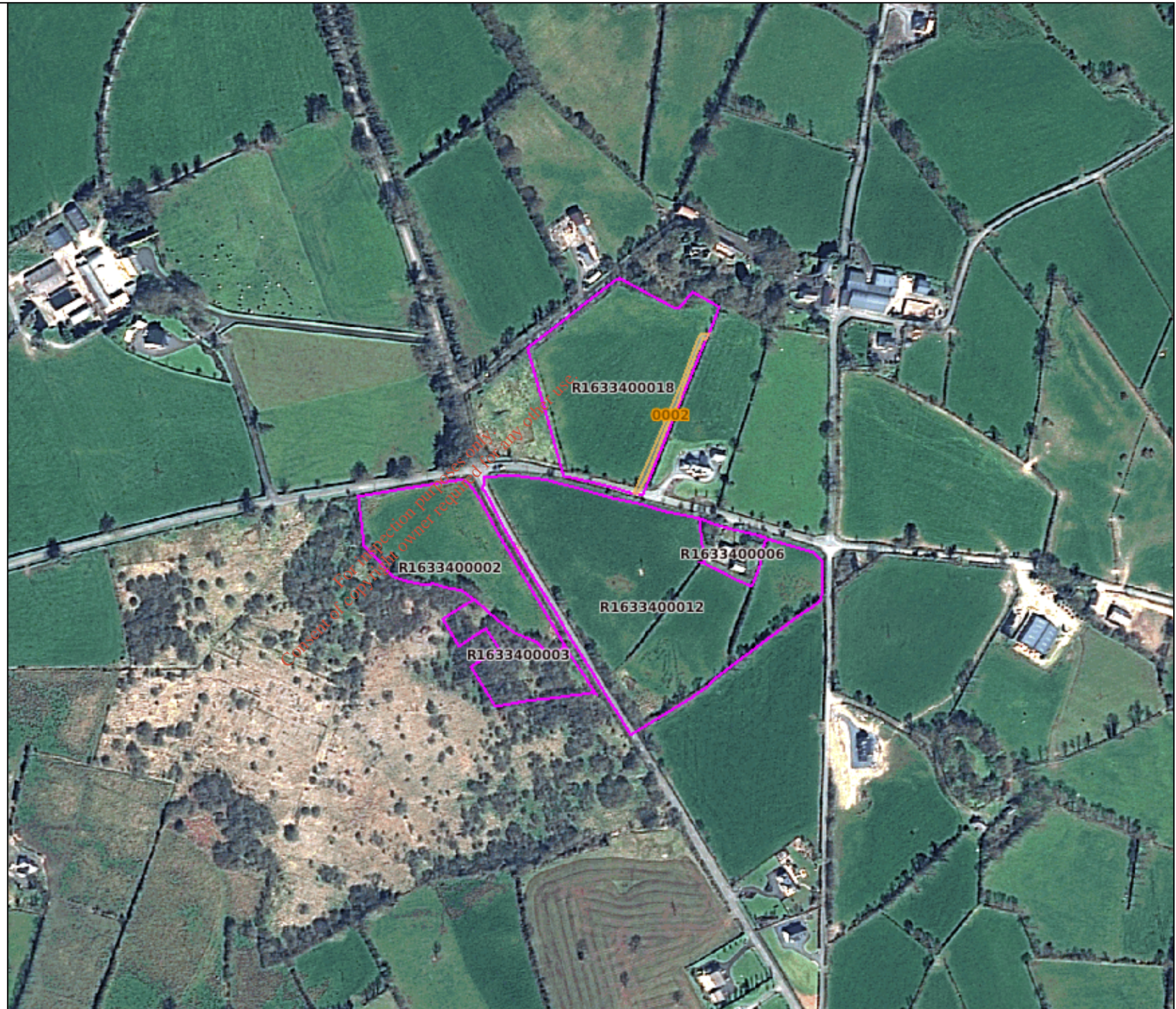
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## Legend

-  Drain
-  Farm Structure
-  Forestry Plots
-  Hedge
-  Land Feature
-  Margin
-  Published Parcels
-  Utility
-  Water

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## Nitrates Information

Statement of organic nitrogen and phosphorus produced by cattle only.

Nitrates							
Nitrogen [kg]	Phosphorus [Kg]	Year	Land [Ha]	Nph [N kg/Ha]	Period From	Period To	
2029	294	2020	29.83	68	01/01/2020	30/11/2020	
1857	269	2020	29.83	62	01/01/2020	31/10/2020	
1683	244	2020	29.83	56	01/01/2020	30/09/2020	
1506	218	2020	29.83	50	01/01/2020	31/08/2020	
1138	164	2020	29.83	38	01/01/2020	30/06/2020	
813	117	2020	29.83	27	01/01/2020	30/04/2020	
2116	307	2019	29.89	71	01/01/2019	31/12/2019	
1897	276	2019	29.89	63	01/01/2019	30/11/2019	
1724	251	2019	29.89	58	01/01/2019	31/10/2019	
1554	226	2019	29.89	52	01/01/2019	30/09/2019	
1391	203	2019	29.89	47	01/01/2019	31/08/2019	
1228	179	2019	29.89	41	01/01/2019	31/07/2019	
1075	157	2019	29.89	36	01/01/2019	30/06/2019	
928	136	2019	29.89	31	01/01/2019	31/05/2019	
2347	345	2018	31	76	01/01/2018	31/12/2018	
2144	315	2018	31	69	01/01/2018	30/11/2018	
1947	287	2018	31	63	01/01/2018	31/10/2018	
1738	256	2018	31	56	01/01/2018	30/09/2018	
1537	226	2018	31	50	01/01/2018	31/08/2018	
1329	196	2018	31	43	01/01/2018	31/07/2018	
1127	166	2018	31	36	01/01/2018	30/06/2018	
743	109	2018	31	24	01/01/2018	30/04/2018	
2467	364	2017	31	80	01/01/2017	31/12/2017	
2268	335	2017	31	73	01/01/2017	30/11/2017	
2072	306	2017	31	67	01/01/2017	31/10/2017	
1865	276	2017	31	60	01/01/2017	30/09/2017	
1659	245	2017	31	54	01/01/2017	31/08/2017	
1233	182	2017	31	40	01/01/2017	30/06/2017	
2486	365	2016	31	80	01/01/2016	31/12/2016	
2280	335	2016	31	74	01/01/2016	30/11/2016	
2087	306	2016	31	67	01/01/2016	31/10/2016	
1695	249	2016	31	55	01/01/2016	31/08/2016	
1274	187	2016	31	41	01/01/2016	30/06/2016	
2400	351	2015	31	77	01/01/2015	31/12/2015	
2019	296	2015	31	65	01/01/2015	31/10/2015	
1635	239	2015	31	53	01/01/2015	31/08/2015	

Nitrogen [kg]	Phosphorus [Kg]	Year	Land [Ha]	Nph [N kg/Ha]	Period From	Period To
1227	179	2015	31	40	01/01/2015	30/06/2015
2375	347	2014	31	77	01/01/2014	31/12/2014
1786	260	2014	31	58	01/01/2014	30/09/2014
1195	174	2014	31	39	01/01/2014	30/06/2014
2699	393	2013	31	87	01/01/2013	31/12/2013
2030	296	2013	31.23	65	01/01/2013	30/09/2013
1337	196	2013	31.23	43	01/01/2013	30/06/2013
2834	418	2012	31.13	91	01/01/2012	31/12/2012
2169	320	2012	31.13	70	01/01/2012	30/09/2012
1701	251	2012	31.17	55	01/01/2012	31/07/2012
3029	440	2011	31.33	97	01/01/2011	31/12/2011
1756	255	2011	31.33	56	01/01/2011	31/07/2011
2856	417	2010	31.33	91	01/01/2010	31/12/2010
1808	264	2010	31.33	58	01/01/2010	31/08/2010
3061	446	2009	30.62	100	01/01/2009	31/12/2009
2079	303	2009	30.62	68	01/01/2009	31/08/2009
3303	484	2008	31.28	106	01/01/2008	31/12/2008
2132	312	2008	31.28	68	01/01/2008	31/08/2008
2914	427	2007	31.85	91	01/01/2007	31/12/2007
1984	292	2007	31.85	62	01/01/2007	31/08/2007
4044	601	2006	31.96	127	01/01/2006	31/12/2006

**Please note:**

This statement shows the nitrogen and phosphorus produced by cattle only, so if there are other livestock on the farm (such as sheep, pigs, poultry, horses etc.) you will need to work out the nitrogen and phosphorus that they produced and add this to the figure for cattle to get the total figure. The figures shown for nitrogen, phosphorus, area and N kg/ha are calculated using CMMS and Single Payment Scheme data.

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## APPENDIX 4

### APPROPRIATE ASSESSMENT SCREENING REPORT

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# Appropriate Assessment Screening Report

Proposed Broiler Poultry Development at Corlea, Ballybay, Co.  
Monaghan

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**Report For:**

**Stephen Moffett**

**Prepared By:**

**Patrick McCabe B.Sc., M.Sc.**

**Date:**

**12<sup>th</sup> January 2021**

**Project No. 15148**

**Report No. 15148-02 REV.A**

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CONSERVATION OBJECTIVES FOR SLIEVE BEAGH SPA  
SLIEVE BEAGH SPA – STANDARD DATA FORM
- Appendix 3:** CONSERVATION OBJECTIVES FOR SLIEVE BEAGH SAC
- Appendix 4:** SCAIL MODEL INPUTS & OUTPUTS

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## 1.0 INTRODUCTION

### 1.1 Project Background

It is understood that Mr. Stephen Moffett intends to apply to Monaghan County Council for planning permission to construct a broiler poultry development at a site in his ownership at Corlea, Ballybay, Co. Monaghan. In accordance with S.I. No. 600/2001 – Planning and Development Regulations, 2001, an Environmental Impact Assessment Report (E.I.A.R) is warranted for the development. While assessing the ecological impact of the project, it was deemed prudent that an Appropriate Assessment (AA) Screening Report should be produced to accompany the said E.I.A.R. Consequently, Hydrec Environmental Consulting were engaged to prepare an Appropriate Assessment Screening Report to determine the appropriateness of the proposed development in the context of the conservation objectives set out in any nearby Natura 2000 sites.

### 1.2 Legislative Context

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as the “Habitats Directive”, provides legal protection for habitats and species of European importance.

Articles 3 to 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000. These are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special

Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/ECC) as codified by Directive 2009/147/EC. It is the responsibility of each member state to designate SPAs and SACs, both of which will form part of Natura 2000, a network of protected sites throughout the European Community. The Habitats Directive has been transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011) and the Planning and Development (Amendment) Act, 2010 as amended.

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment (AA):

*Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.*

Article 6(4) states:

*If, in spite of a negative assessment of the implications for the [Natura 2000] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*

*Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to: human health or public safety; beneficial consequences of primary importance for the environment; or, further to an opinion from the Commission, other imperative reasons of overriding public interest.*

These articles mean that where the implementation of the proposed development has potential to have a significant effect on a Natura 2000 site, the relevant Competent Authority must ensure that an appropriate assessment is carried out in view of that site's conservation objectives

### **1.3 Stages of Appropriate Assessment**

There are up to 4 stages in the Appropriate Assessment process as outlined in the European Commission Guidance document (EC, 2001). The following is a summary of these stages (each of which is dependent on the outcome of the previous):

- Stage 1 - Screening: This stage examines the likely effects of a project either alone or in combination with other projects upon a Natura 2000 Site and considers whether it can be objectively concluded that these effects will not be significant.

- Stage 2 - Appropriate Assessment: In this stage, the impact of the project on the integrity of a Natura 2000 site is considered with respect to the conservation objectives of the site and to its structure and function.
- Stage 3 - Assessment of Alternative Solutions: Should the Appropriate Assessment determine that adverse impacts are likely upon a Natura 2000 site, this stage examines alternative ways of implementing the project that, where possible, avoid these adverse impacts.
- Stage 4 - Assessment where no alternative solutions exist and where adverse impacts remain: Where imperative reasons of overriding public interest (IROPI) exist, an assessment to consider whether compensatory measures will or will not effectively offset the damage to the Natura 2000 site will be necessary.

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## 2.0 STAGE 1 – SCREENING

Both EU and national guidance exists in relation to Member States fulfilling their requirements under the EU Habitats Directive, with particular reference to Article 6(3) and 6(4) of that Directive. The methodology followed in relation to this AA screening has had regard to the following guidance:

- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Department of Environment, Heritage and Local Government;
- Managing Natura 2000 Sites: the provisions of Article 6 of the Habitats Directive 92/43/EEC, referred to as MN2000, European Commission 2000;
- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, referred to as the “EC Article 6 Guidance Document (EC2000); and
- 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.

In complying with the obligations under Article 6(3) and following the EC2000 and MN2000 Guidelines, this AA has been structured in a stage by stage approach as follows:

- Description of the project;
- Identification of Natura 2000 sites potentially affected;
- Identification and description of individual and cumulative impacts likely to result;
- Assessment of the significance of the impacts identified in relation to site integrity;
- Exclusion of sites where it can be objectively concluded that there will be no significant effects; and
- Screening conclusion.



## 2.1 Description of Project

### 2.1.1 Site Location & Description of Proposed Works

It is proposed to construct a single broiler poultry house (total floor area – 2,469m<sup>2</sup> per unit) with detached storage shed and ancillary site works at a site in Corlea, Ballybay, Co. Monaghan. The proposed development site is located adjacent to the applicant's existing poultry enterprise and encompasses a total area of 1.271ha. It is anticipated that the newly proposed poultry unit will house c. 50,630 broiler chickens, once constructed. This in combination with the 39,890 birds currently farmed onsite (i.e., House 1) will increase the applicant's total flock to c. 90,520 birds.

The proposed development location is bordered by agricultural grassland to the north and east with the applicant's family's bovine farmyard complex situated directly to the west. A local road (L7310) runs adjacent to the site's southern boundary. The closest residence to the site is that of the applicants and applicant's family, with no other residential or commercial buildings located within a 100m radius of the development. A community hall is located approx. 110m to the east of the proposed building footprint. The site will be accessed via an existing entrance and laneway that has been constructed and maintained in accordance with the planning conditions previously set out in Planning Permission Ref 18/187. The local road in which the site is accessed is linked to the R162 and R183 Regional Roads approx. 1.5m and 2.7km from the site respectively.

### 2.1.2 Hydrology

With the publication of Ireland's second River Basin Management Plan (RBMP), the RBMP 2018 – 2021 defines the entirety of the island of Ireland as a single River Basin District (RBD). This single RBD has been broken down into 46 catchment management units. These units are mainly based on the hydrometric areas in use by the local authorities. Each of the 46 catchment management units have been further broken down into 583 sub-catchments. The proposed development site is located within the Lough Neagh and Lower Bann Hydrometric Area (No.03) and WFD Catchment (No. 03). Additionally, the site is located within the Clontibret (Stream)\_SC\_010 WFD Sub-catchment.

The Aghnaclogh Stream (1<sup>st</sup> Order) which is located approx. 160m to the east, is the closest watercourse to the proposed development site. A separate watercourse the Toniscoffey Stream, is located approx. 500m to the north of the site, however it should be noted that this waterbody is located within a different catchment to that of the site (i.e. the Dromore\_SC\_010). Consequently, the proposed development site is situated outside of the Stranooden GWS's / White Lough's surface water catchment.

### 2.1.3 Soils

According to the Teagasc and EPA soils map, AminSRPT - Shallow, rocky, peaty/non-peaty mineral complexes (Mainly acidic) exists within the entirety of the site. Further to the north and northeast, Cut – cutover / cutaway peat is found. In Ireland, the parent material underlying the majority of the country is comprised of quaternary sediments with the remainder composed of bedrock outcrop. These quaternary sediments have resulted from glacial movement, melting and deposition. The Teagasc and EPA subsoil maps identify that the entirety of the site is underlain with Rck – Bedrock at or close to the surface. Where cutover peats soils are present to the north and north east, peaty subsoils are also found.

### 2.1.4 Geology & Hydrogeology

Based on the Geological survey of Ireland (GSI) 1:100k bedrock formation mapping, there are two bedrock formations found to exist within the site. The majority of the site is underlain by the Red Island Formation which comprises of green to greenish-grey medium or coarse grained, locally conglomeratic, greywacke. Grey to greyish black shales can also be found within the formation. The Slieve Glah Formation which comprises of grey to dark grey slaty siltstone, mudstone and thin bedded, fine to coarse-grained or microconglomeratic greywacke is found in the south eastern corner of the site. The Orlock Bridge Fault is mapped to transect through the site and forms the boundaries of the aforementioned bedrock formations. Prior to the construction of the applicant's existing poultry unit, it is anticipated that some bedrock outcropping was present on site as is evident by outcropping present directly to the west. No karst landforms are identified within or in the proximity of the site according to The National Karst Database.

The Geological Survey of Ireland (GSI) have reviewed the 1,200 geological Formations and Members defined within the Republic of Ireland and reduced them into 27 'Rock Unit Groups' (RUGs) based on their hydrogeological properties and significance. Based on the GSI's generalised bedrock RUG mapping, one RUGs exist within the site, namely the *SMV – Silurian Metasediments and Volcanics* RUG. Correspondingly, the aquifer underlying the site is classified as a PI – poor aquifer comprising of bedrock which is generally unproductive except for local zones.

Groundwater Vulnerability is a term used to represent the intrinsic geological and hydro-geological characteristics that determine the ease with which groundwater may be contaminated by human activities. Groundwater vulnerability maps are based on the type and

thicknesses of subsoils (sands, gravels, glacial tills (or boulder clays), peat, lake and alluvial silts and clays), and the presence of certain karst features. Groundwater is most at risk where the subsoils are absent or thin and, in areas of karstic limestone, where surface streams sink underground at swallow holes. Given the shallow nature / presence of bedrock at surface, the development site is classified as 'X - Extreme' vulnerability. The groundwater underneath the site is within the Keady Groundwater Body (GWB) and is classified as being of 'Good' status.

#### 2.1.5 Onsite Terrestrial Ecology

A search of the National Parks and Wildlife Services (NPWS) and National Biodiversity Data Centre's (NBDC) online data records was undertaken to determine if any rare or protected flora or fauna species have been recorded within or in the proximity of the site. A 1km Zone of Influence was applied to the assessment. One species, namely the Eurasian Badger (*Meles meles*), was recorded within this zone. It is important to note however, that no observations of this species are noted within the curtilage of the development site. The Corlongford Fen is located to the south east of the site. This inter drumlin wetland is comprised of a species poor transition mire with marginal scrub woodland and marsh habitats.

On the 06<sup>th</sup> of January 2021, Patrick McCabe of Hydrec Environmental Consulting conducted a walkover study of the site to assess its ecological condition. In accordance with the Fossitt Habitat classification system, it was determined that the majority of the site's habitat could be categorised as a 'Buildings and Artificial Surfaces BL3' with an 'Improved Agricultural Grassland GA1' habitat found directly to the north and east. There was no evidence of any active badger setts within the confines of the site, which was to be expected given the general developed / disturbed nature of the study area. In addition, no wetland habitat or floral species associated with such was observed. Consequently, based on the habitat types found within the site and absence of protected / rare species, the ecological value of the site was determined to be low.

#### 2.1.6 Aquatic Ecology

No macroinvertebrate sampling has been completed on the Aghnaglogh Stream or the Six Mile Stream (i.e. watercourse in which the Aghnaglogh Stream flows into) to date. The closest active monitoring station on the river system is located on the Clontibret Stream at the bridge to the east of Killyneill Crossroads (Station No. RS03C011400). In 2017, a Q-value rating of Q3 was recorded at this monitoring point, representing a 'Poor' water quality status. This has been the score consistently recorded at this location since 1989, with the exception of a Q3-4 (i.e. Moderate status) recorded in 1993 and a Q4 (i.e. Good status) recorded in 1996.

## 2.2 Identification of Natura 2000 Sites within Potential Zones of Influence

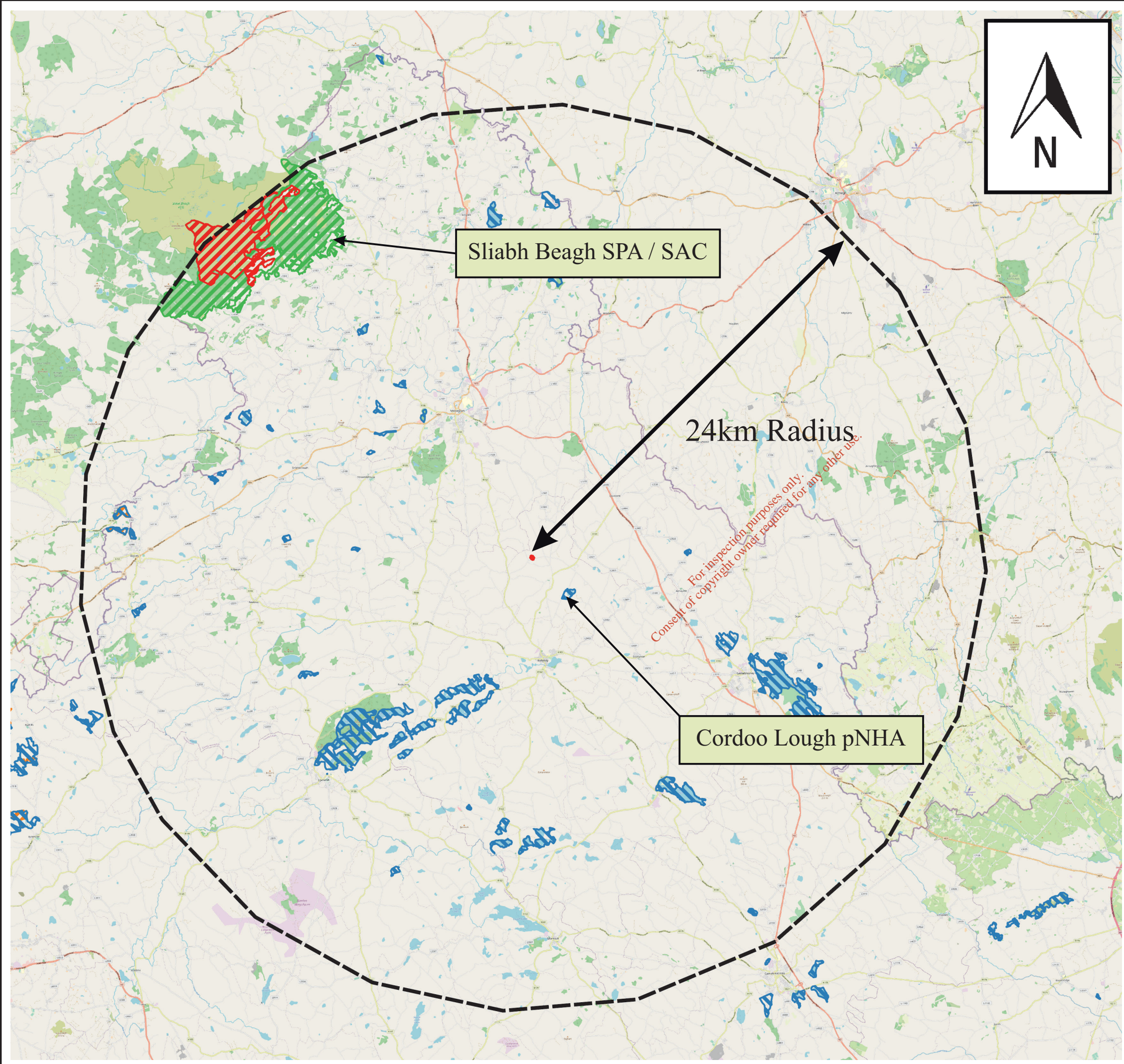
The EU Habitats Directive contains a list of habitats (Annex I) and species (Annex II) for which SACs must be established by Member States. Similarly, the EU Birds Directive contains lists of important bird species (Annex I) and other migratory bird species for which SPAs must be established. Those that are known to occur at a site are referred to as ‘qualifying interests’ and are listed in the Natura 2000 forms which are lodged with the EU Commission by each Member State. A ‘qualifying interest’ is one of the factors (such as the species or habitat that is present) for which the site merits designation. The National Parks and Wildlife Service (NPWS) are responsible for the designation of SACs and SPAs in Ireland.

Figure 1. illustrates, the location of Natura 2000 sites in respect to the proposed development. Typically, screening is completed on sites within a 15km radius from the development, which is in line with current best practice and guidance (DEHLG, 2010). However, where there is a concern that impacts maybe further reaching and where there is potential for linkages outside of this zone, this radius maybe expanded. As can be seen from Figure 1. the Slieve Beagh SAC is located 19.2km from the site, whilst the Slieve Beagh SPA is located 23.7km from the development (see Table 1). Both sites have been included in this AA screening process, in order to risk assess the ammonia emissions from the proposed development in respect to these Natura 2000 sites. Given that the Magheraveely Marl Loughs SAC is located within this extended Zone of Influence, it has been included in the assessment also.




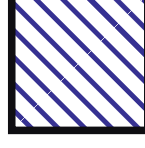
**Table 1. Distance of Natura 2000 Sites from the Proposed Development**

Natura 2000 Sites	Distance
Magheraveely Marl Lough SAC	17.6km
Slieve Beagh SPA	19.2km
Slieve Beagh SAC	23.7km

While Natural Heritage Areas (NHA) and proposed Natural Heritage Areas (pNHA) do not form part of the Natura 2000 network, they can provide an important supporting function, particularly to fauna species that are not confined within the boundaries of an attributed SPA / SAC (e.g. certain bird species). Therefore, in order to protect the European network, it may also be a requirement to protect a designated NHA / p NHA. In addition, Article 10 of the Habitat’s Directive places a high level of importance on such sites that connect the Natura 2000 network. Table 2 below identifies the closest NHA / pNHA’s to the proposed development site.



**LEGEND**

-  Special Area of Conservation
-  Special Protection Area
-  National Heritage Area
-  proposed National Heritage Area



**PROJECT:**  
 Appropriate Assessment Screening Report  
 - Stephen Moffett -  
 Corlea, Ballybay, Co. Monaghan

**TITLE:**  
 Identification of Natura 2000 Sites within  
 a 24km Radius of the Proposed Development

<b>SCALE:</b> 1:200,000	<b>DRAWN BY:</b> PMcC
<b>DRAWING NO:</b> Figure 1.	<b>REV.</b> 0

**Table 2. Distance of NHA & pNHA Sites within a 5km radius from the Proposed Development**

Natural Heritage Areas	Distance
Cordoo Lough (pNHA – 001268)	2.3km

## 2.3 Brief Description of Natura 2000 Sites

### 2.3.1 Magheraveely Marl Loughs SAC (Site Code: UK0016621)

Magheraveely Marl Loughs SAC is comprised of six low-lying lakes in the River Finn catchment (Co. Monaghan and Co. Fermanagh). This includes Annachullion Lough, Drumacritten Lough, Knockballymore Lough, Burdautien Lough, Kilroosky Lough and Summerhill Lough with the latter three also designated under the Kilroosky Lough Complex SAC. The habitats and/or species for which this area has been designated as a SAC are listed below:

- [3140] Hard Water Lakes
- [7210] Cladium Fens\*
- [7230] Alkaline Fens
- [1092] White-clawed Crayfish (*Austropotamobius pallipes*)

In comparison with other lakes in the region, this site is important because the water has not been influenced by nutrient enrichment and remains clear, with a high lime content and low plant nutrient conditions. Stoneworts are the dominant submerged vegetation and include several rare and local species, including *Chara aspera*, *C. curta*, *C. hispida* and *C. pedunculata*.

The lakes are surrounded by an inundation zone containing significant stands of alkaline fen vegetation. This is generally composed of a sward that is very rich in sedges and herbs. Characteristic species include the sedges lesser tussock-sedge *Carex diandra*, long-stalked yellow sedge *C. viridula ssp. brachyrrhyncha* and glaucous sedge *C. flacca*. Other frequent rare species include marsh arrowgrass *Triglochin palustre*, quaking-grass *Briza media* and more notably, marsh helleborine *Epipactis palustris*, grass-of-Parnassus *Parnassia palustris*, knotted pearlwort *Sagina nodosa* and fen bedstraw *Galium uliginosum*. A copy of the SAC's Site Synopsis and Conservation Objectives are included in Appendix 1.

### 2.3.2 Slieve Beagh SPA (Site Code: 004167) / Slieve Beagh – Mullaghfad – Lisnaskea (Site Code: UK9020302)

The Slieve Beagh SPA comprises much of the eastern and south-eastern sectors of the Slieve Beagh upland area that extends from County Monaghan into the counties of Fermanagh and Tyrone in Northern Ireland. The site is designated as the Slieve Beagh – Mullaghfad – Lisnaskea SPA in Northern Ireland. The site is one of the strongholds for Hen Harrier in the country. A survey in 2005 recorded four pairs, representing over 1.9% of the all-Ireland total. However, when the Northern Ireland sector of Slieve Beagh is considered, there was a total of 10 breeding pairs in 2005. The mix of forestry and open areas provides optimum habitat conditions for this rare bird, which is listed on Annex I of the E.U. Birds Directive. The early stages of new and second-rotation conifer plantations are the most frequently used nesting sites, though some pairs may still nest in tall heather of unplanted bogs and heath. Hen Harriers will forage up to c. 5 km from the nest site, utilising open bog and moorland, young conifer plantations and hill farmland that is not too rank. Birds will often forage in openings and gaps within forests. In Ireland, small birds and small mammals appear to be the most frequently taken prey.

In 2017 and 2018, extensive monitoring of the breeding Hen Harrier was carried out across all SPAs in Ireland, including the Slieve Beagh SPA by the Golden Eagle Trust. The 2018 monitoring results recorded 3 pairs in the south and 4 pairs in the north, which totals 7 breeding pairs across the entirety of this cross-border SPA. All nesting sites were located within the confines of the SPA itself. The 2019 results again recorded 3 confirmed pairs within the Slieve Beagh SPA, with 2 breeding pairs successfully fledging four young.

Irish Hen Harrier populations have been found to predominately breed within pre-thicket forest habitats. Additionally, they have been found in Ireland to breed / nest within post closure plantations, mature plantations with dense growth of heather or scrub and heath / bog habitats. The foraging habitat preferences of Hen Harriers are generally biased towards moorland/grassland mosaic and pre-thicket habitats which support larger numbers of their preferred prey species.

The site also supports breeding Merlin, with two pairs recorded in 2002-03. Further survey is required to determine the exact status of this small falcon. Red Grouse is found in unplanted areas of bog and heath – this is a species that has declined in Ireland and is now Red-listed. Peregrine nest in the Northern Ireland sector of Slieve Beagh and can be seen over the site at times. Slieve Beagh SPA is of ornithological importance because it provides excellent nesting and foraging habitat for breeding Hen Harrier and is one of the top sites in the country for the

species. The presence of three species, Hen Harrier, Merlin and Peregrine, which are listed on Annex I of the E.U. Birds Directive is of note. A copy of the Slieve Beagh SPA Site Synopsis and Conservation Objectives and the Slieve Beagh – Mullaghfad – Lisnaskea SPA Conservation Objectives are included in Appendix 2.

### 2.3.3 Slieve Beagh SAC (Site Code: UK0016622)

Slieve Beagh has also been designated as a SAC as it contains habitat types which are rare or threatened within a European context. The habitats and species for which this area has been designated as a SAC are described below:

#### **Blanket Bogs:**

The Slieve Beagh SAC includes a total blanket bog area of 1112ha and is considered to be one of the best areas in the United Kingdom for this habitat type. The flora communities found in the SAC include *Scirpus cespitosus*, *Eriophorum vaginatum*, *Sphagnum papillosum*, *Calluna vulgaris* and *Eriophorum vaginatum*.

#### **European Dry Heath:**

The Slieve Beagh SAC includes a total dry heath area of 80ha. The plant communities found include *Calluna vulgaris*, *Erica cinerea*, *Calluna vulgaris* and *Vaccinium myrtillus*.

#### **Natural Dystrophic Lakes and Ponds:**

Dystrophic lakes and ponds are highly acidic and characteristically stained brown from contact with surrounding peat. In total 9 dystrophic lakes covering a total area of 15.3ha is found within the Slieve Beagh SAC. This concentration is considered one of the highest in the United Kingdom.

## 2.4 Ammonia & Nitrogen Impact Assessment

Ammonia / nitrogen emissions and subsequent deposition of these pollutants can result in eutrophication of waterbodies and the acidification of soils within sensitive ecosystems. The SCAIL – Agriculture model, first developed by the Centre for Ecology and Hydrology (CEH) is a common screening tool utilised in Ireland and the U.K to assess the impacts from agricultural developments on sensitive habitats. Where such impacts are found, more detailed dispersion and deposition modelling is required.



2.4.1 Application of SCAIL Model

A SCAIL model was run by Hydrec Environmental Consulting in order to predict the atmospheric emissions of ammonia / nitrogen and potential impact on the Slieve Beagh SAC / SPA and Magheraveely Marl Loughs SAC from the proposed facility. A number of user defined factors are required in the application of the software, such as fan ventilation inputs (see details included in Appendix 4). The results of the SCAIL model are included in Tables 3 & 4 and Appendix 4. The background concentration refers to the existing ammonia / nitrogen conditions at the Natura 2000 sites pre-development<sup>1</sup>, the process contribution (PC) estimates the additional concentration load post-development, while the predicated environmental concentration (PEC) combines the background and PC concentrations. Critical Levels and Critical Loads are a benchmark for assessing the risk of air pollution impacts to ecosystems.

**Table 3. Ammonia loadings estimated from the proposed development on the identified Natura 2000 sites**

<b>Magheraveely Marl Loughs SAC</b>				
Background NH <sub>3</sub>	Process Contribution	Predicated Environmental Concentration	Critical Level	% of Critical Load
1.66 µg/m <sup>3</sup>	0.008 µg/m <sup>3</sup>	1.67 µg/m <sup>3</sup>	1 – 3 µg/m <sup>3</sup>	0.3% - 0.8%
<b>Slieve Beagh SPA</b>				
Background NH <sub>3</sub>	Process Contribution	Predicated Environmental Concentration	Critical Level	% of Critical Load
1.79 µg/m <sup>3</sup>	0.007 µg/m <sup>3</sup>	1.80 µg/m <sup>3</sup>	1 µg/m <sup>3</sup>	0.7%
<b>Slieve Beagh SAC</b>				
Background NH <sub>3</sub>	Process Contribution	Predicated Environmental Concentration	Critical Level	% of Critical Load
1.59 µg/m <sup>3</sup>	0.005 µg/m <sup>3</sup>	1.6 µg/m <sup>3</sup>	1 µg/m <sup>3</sup>	0.5%

<sup>1</sup> Background data used in the SCAIL model for the Republic of Ireland is from 2013 for ammonia and from 2019 for nitrogen deposition.

**Table 4. Nitrogen loadings estimated from the proposed development on the identified Natura 2000 sites**

<b>Magheraveely Marl Loughs SAC</b>				
Background N	Process Contribution	Predicated Environmental Concentration	Critical Load	% of Critical Load
19.24 kg N/ha/yr	0.04 kg N/ha/yr	19.43 kg N/ha/yr	10 kg N/ha/yr	0.4%
<b>Slieve Beagh SPA</b>				
Background N	Process Contribution	Predicated Environmental Concentration	Critical Load	% of Critical Load
18.39 kg N/ha/yr	0.04 kg N/ha/yr	18.43 kg N/ha/yr	5 kg N/ha/yr	0.8%
<b>Slieve Beagh SAC</b>				
Background N	Process Contribution	Predicated Environmental Concentration	Critical Load	% of Critical Load
18.78 kg N/ha/yr	0.03 kg N/ha/yr	18.81 kg N/ha/yr	5 kg N/ha/yr	0.6%

#### 2.4.2 Explanation of SCAIL Model Results

##### Ammonia

Two ammonia critical levels are set within the SCAIL model for habitats, that being  $1 \mu\text{g}/\text{m}^3$  for lichens and bryophytes and  $3 \mu\text{g}/\text{m}^3$  for other vegetation. It should be noted that if lichens and bryophytes (mosses) make up a key part of the designation then the more stringent critical level ( $1 \mu\text{g}/\text{m}^3$ ) should be used. Given the presence of moss species within the Slieve Beagh SAC, the lower threshold applies for this Natura 2000 site.

As can be seen from Table 3, the % critical level from the proposed development for ammonia ranges from 0.3% - 0.7% at the respective Natura 2000 sites<sup>2</sup>. It should also be noted that the SCAIL assessment is modelled using conservative meteorological data. Annual windrose data from Ballyhaise weather observation station, would signify that the prevailing wind direction

<sup>2</sup> The  $1 \mu\text{g}/\text{m}^3$  critical level for the Magheraveely Marl Loughs SAC has been included for comparative purposes.

in the region is south westerly. Therefore, given the position of the Natura 2000 sites in respect to the proposed site and prevailing winds, air emissions from the SCAIL assessment are likely to be overestimated. Thus, given the % critical level is at or below 0.7%, the contribution of ammonia from the proposed development is deemed to be negligible. (Institute of Air Quality Management - A guide to the assessment of air quality impacts on designated nature conservation sites, May 2020).

### Nitrogen

Critical Loads for nutrient nitrogen are derived from the Convention on Long-Range Transboundary Air Pollution (CLRTAP) and are attributed to habitats as opposed to species. They are based on empirical evidence, mainly observations from experiments and gradient studies. Critical Loads are given as ranges (e.g. 10-20 kg-N/ha/y); these ranges reflect variation in ecosystem response across Europe. Given the diversity of habitats located within the Slieve Beagh SAC / SPA, the critical load of 5 kg N/ha/yr associated with raised and blanket bogs was selected for conservative screening purposes. At present, no critical load for nitrogen has been defined for hard water oligotrophic lakes (e.g. Magheraveely Marl Loughs). Thus, a conservative critical load of 10 kg N/ha/yr was attributed to the Magheraveely Marl Loughs SAC.

As can be seen from Table 4, the % critical level from the proposed development for nitrogen ranges from 0.4% - 0.8% at the respective Natura 2000 sites. Thus, given the % critical level is at or below 0.8% (i.e. worst-case scenario based on conservative meteorological conditions), the contribution of ammonia from the proposed development is deemed to be negligible (Institute of Air Quality Management - A guide to the assessment of air quality impacts on designated nature conservation sites, May 2020).

## **2.5 Assessment of Direct, Indirect & Secondary Impacts**

Given the distance from the proposed development site to the Slieve Beagh SAC / SPA and the limits in which the Hen Harrier has been known to forage, it is not anticipated that any link between the development site and said Natura 2000 sites exist. Additionally, the closest water dependant pNHA Cordoo Lough, is located within a separate surface water catchment (i.e. Dromore\_SC\_010) and groundwater body (i.e. Cavan GWB) to the development site. Therefore, no Source-Pathway-Receptor linkage exists between the site and Cordoo Lough. Similarly, no hydrological connection exists between the development site and the Magheraveely Marl Loughs SAC. A summary of any likely direct, indirect or secondary impacts of the proposed facility on the Natura 2000 Network is presented in Table 5.

**Table 5. Potential Significant Impacts on Natura 2000 Sites from the Proposed Development**

Assessment of Likely Impacts	
Size and Scale	The proposed development footprint is approximately 2,469 m <sup>3</sup> . Consequently, there will be no impact on any Natura 2000 sites as a result of the project's size or scale.
Land-take	Given that there are no works proposed within any Natura 2000 site, there will be no land-take as a result of the project.
Distance from Natura 200 Site	As can be seen from Table 1. the proposed development site is a considerable distance from the Slieve Beagh SAC / SPA.  The proposed development site is located in the proximity to Cordoo Lough pNHA. However, there is no hydrological linkage between the site and Cordoo Lough. Thus, the Source – Pathway – Receptor continuum is broken. Similarly, no hydrological connection exists between the development site and the Magheraveely Marl Loughs SAC.
Resource Requirement	No materials for construction will be sourced from within any Natura 2000 site (e.g. no water abstraction).
Emissions	There will be no emissions of soiled water from the site. All soiled water will be disposed of in accordance with the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2017 S.I. No. 605 of 2017. Ammonia / nitrogen emissions were assessed using the SCAIL Model and were not predicted to impact upon the Slieve Beagh SPA / SAC or Magheraveely Marl Loughs SAC (See Section 2.4)
Excavation Requirements	No excavations will take place within any Natura 2000 site.
Transportation Requirements	Site has existing access via local road. No access to any areas within a SAC or SPA will be required.
Duration of Construction	The duration of construction is not envisaged to have effect on any Natura 2000 site as noise is not anticipated to be a nuisance outside of the site's boundary.

## 2.6 Cumulative Effects

It is a requirement of the Appropriate Assessment process that the combined effects of the proposed development together with other plans or projects be assessed. The SCAIL modelling assessment completed confirms that the development will not cause a deterioration in air quality in respect of the Slieve Beagh SAC / SPA or Magheraveely Marl Loughs SAC. It has been demonstrated that the process contributions for ammonia and nitrogen from the facility are substantially <1.0% of their respective critical level / load. Where process contributions, considered in isolation, are low in respect of the designated site Critical Level or Load, an in-combination assessment is not warranted. It was therefore concluded that cumulative impacts are negligible and inconsequential.

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### 2.7 Likely Changes to Natura 2000 Sites & Significant Impacts

The likely changes that will arise from the proposed development have been examined in the context of a number of factors that could potentially affect the integrity of the identified Natura 2000 sites (see Table 6).

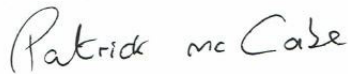
**Table 6. Likely Effects on Natura 2000 sites**

Assessment of Likely Impacts	
Reduction of Habitat Area	No works will take place within the boundary of any Natura 2000 site and therefore no loss of habitat will occur.
Disturbance of Key Species	All works associated with the proposed development will take place outside the boundaries of any Natura 2000 site. Given the low ecological condition of the existing site and absence of qualifying interests / supporting habitats of key species, no significant impacts are considered likely.
Habitat or Species Fragmentation	There will be no works within any SAC / SPA or land take as a result of the development. Consequently, habitat fragmentation will not occur.
Reduction in Species Density	No reduction in species density within any Natura 2000 site is considered likely as a result of the project.
Changes in Key Indicators of Conservation Value	Given the distance of the proposed development site from the Slieve Beagh SPA (19.2km), it is not anticipated that hen harrier foraging will occur in the vicinity of the site. Hen harrier foraging activities are typically limited to within c.5km of their habitat.  Similarly, no degradation of blanket bog, dry heath or dystrophic lake habitat will occur.
Climate Change	No damage to any Natura 2000 site as a result of climate change is predicated to occur as a consequence of the development.

### 3.0 CONCLUSION

The likely impacts that will arise from the proposed poultry development at Corlea, Ballybay, Co. Monaghan have been examined in the context of a number of factors that could potentially affect the integrity of the Natura 2000 network. On the basis of the findings of this Appropriate Assessment screening exercise, it is concluded that the proposed development on its own or in combination with other developments will not have a significant effect on the Natura 2000 network and a Stage 2 Appropriate Assessment is not required.

Signed:



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Patrick McCabe B.Sc., M.Sc.

(P.I insurance details available on request)

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## APPENDIX 1

- MAGHERAVEELY MARL LOUGHS SAC SITE SYNOPSIS
  
- CONSERVATION OBJECTIVES FOR MAGHERAVEELY MARL LOUGHS SAC
  
- MAGHERAVEELY MARL LOUGHS SAC – STANDARD DATA FORM

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MAGHERAVEELY MARL LOUGHS SAC  
UK0016621

# CONSERVATION OBJECTIVES

## Document Details

Title	Magheraveely Marl Loughs SAC Conservation Objectives
Prepared By	R. McKeown
Approved By	P. Corbett
Date Effective From	01/04/2015
Version Number	V2
Next Review Date	Nov 2020
Contact	<a href="mailto:cdp@doeni.gov.uk">cdp@doeni.gov.uk</a>

## Revision History:

Version	Date	Summary of Changes	Initials
V1	June 2013	Internal working document	PC
V2	January 2015	Complete review	RMK

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## 1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives<sup>1</sup> to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

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<sup>1</sup> 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

## 2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition
- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.
- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

## 3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas it covers within that range are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and;
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and;
- there is, and will probably continue to be, a sufficiently large habitat to maintain its population on a long term basis.

### 3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as “the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site”.

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

### 4. SITE INFORMATION

COUNTY: FERMANAGH

#### SUB-SITES

Kilroosky Lough

Burdautien Lough

Knockballymore Lough

Drumacrittin Lough

Annachullion Lough

Summerhill Lough

#### GRID REFERENCE

IH 495274

IH 495282

IH 478269

IH 549327

IH 519302

IH 491280

AREA: 58.8 ha

### 5. SUMMARY SITE DESCRIPTION

Magheraveely Marl Loughs SAC is comprised of six lakes low-lying in the catchment of the River Finn. They are individually designated as ASSIs and were selected from a cluster of lakes situated here because of the combination of hard water and low nutrient status, resulting in lakes that approach the classic marl lake condition. In addition, they are surrounded by wetlands whose interest is also promoted by high calcium concentration.

Further details of the site are contained in the ASSI Citation and Views About Management statement, which are available on the NIEA website ([www.doeni.gov.uk/niea](http://www.doeni.gov.uk/niea)).

#### 5.1 BOUNDARY RATIONALE

It was not attempted to include the surface water catchments for the basins. Boundaries were drawn to include the open water and swamp areas within

Northern Ireland, and any related adjacent semi-natural habitat, but habitats of lesser interest were not incorporated into a ‘buffer zone’.

It is an objective that where a section of a lake and its adjacent wetland has been designated on one side of the border between Northern Ireland and the Republic of Ireland, there should be a corresponding designation on the other side. This has nearly been achieved, with the corresponding Kilroosky Lough cluster (SAC 001786) designated in the Republic of Ireland, although this includes Dummy’s Lough which remains undesignated in Northern Ireland, and does not include any wetland around the Drumacrittin/Black Lough sub-site designated in Northern Ireland. Both areas are currently under consideration by the respective agencies.

## 6. SAC SELECTION FEATURES

Feature type	Feature	Global Status	Size/ extent/ pop~
Habitat	Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> formations	B	6 sub-sites 10.5 ha*
Species	White-clawed Crayfish <i>Austropotamobius pallipes</i>	B	5 sub-sites
Habitat	Alkaline fens	B	6.8 ha
Habitat	Calcareous fens with <i>Cladium mariscus</i> and species of the Caricion <i>davallianae</i>	C	3 sub-sites 0.8 ha

Table 1. List of SAC selection features. Those with global status A-C will be referred to in ANNEX I.

Note that there is some overlap between the *Cladium* fens and the alkaline fens as, following JNCCs lead, the former are included here where zones of closed, species-poor *Cladium* have at their margins, transitions to species-rich short-sedge mire vegetation. As these are calcium-rich sites the small sedge component often comprises the calcicoles *Carex diandra* and *C. viridula* ssp. *brachyrrhyncha* in vegetation separately included as alkaline fen.

The global status is an expert judgement of the overall value of the site for the conservation of the relevant Annex I habitat. Sites have been graded A, B or C - in the UK these gradings have been interpreted as follows:

A - Sites holding outstanding examples of the habitat in a European context.

**B** - Sites holding excellent stands of the habitat, significantly above the threshold for SSSI/ASSI notification but of somewhat lower value than grade A sites.

**C** - Examples of the habitat which are of at least national interest (i.e. usually above the threshold for SSSI/ASSI notification on terrestrial sites) but not significantly above this. These habitats are not the primary reason for SACs being selected.

**D** - Habitat present but not of sufficient extent or quality to merit listing as SAC feature.

There is therefore a distinction between the principal features for which sites have been selected (those graded A or B) and those which are only of secondary interest (those graded C). This is a useful distinction but it is important to note that all three grades are qualifying SAC interest features.

Click [here](#) to go to the Natura 2000 Standard Data Form for Magheraveely Marl Loughs SAC.

## 6.1 ASSI SELECTION FEATURES

### Magheraveely Marl Loughs ASSI

Feature Type	Feature	Size/Extent/Population
Habitat	Marl Lakes	10.5 ha
Habitat	Fens	7.6 ha
Species	White-clawed Crayfish	
Species	Invertebrate Assemblage	

Table 2. List of ASSI features.

## 7. CONSERVATION OBJECTIVES

The *Conservation Objective* for this site is:

*To maintain (or restore where appropriate) the*

- Hard oligo-mesotrophic waters with benthic vegetation of *Chara* formations
- White-clawed Crayfish *Austropotamobius pallipes*
- Alkaline fens
- Calcareous fens with *Cladium mariscus* and species of the Caricion davallianae



to favourable condition.

For each SAC feature, there are a number of component objectives which are outlined in the table below. These include a series of attributes, measures and targets which form the basis of *Condition Assessment*. The results of this will determine whether the feature is in favourable condition or not. The feature attributes and measures are found in the attached annex.

## 8. SAC SELECTION FEATURE OBJECTIVE REQUIREMENTS

Feature	Global Status	Component Objective
Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> formations	B	No change in the lake hydrology outside normal seasonal fluctuations.
		Maintain the characteristic low nutrient status and high calcium concentration of the lake waters
		Maintenance of an assemblage of aquatic plants characteristic of Northern Ireland marl lakes.
		The extent of the fringing swamp zone to remain stable (not expanding into the lake, or contracting).
		There should be swamp gaps, or zones within the fringing swamps where the vegetation is sparse enough to allow charophyte growth.
		Minimal negative impact from artificial structures
		Minimal negative impact from recreation
White-clawed Crayfish <i>Austropotamobius pallipes</i>	B	Population size to be maintained or expanded at all sub-sites. No significant drop in trapped animals per unit standard trap effort.
		Recruitment of young animals into the population should be maintained.
		No stocking of the fish predators of Crayfish
Alkaline Fens	B	Maintain and expand the extent of existing alkaline fens.
		Maintain and enhance fen species and community diversity including the presence of notable species

		Maintain and enhance alkaline fen structure and hydrology
		Maintain the diversity and quality of habitats associated with the alkaline fens, e.g. reedbed and transitions to them
<b>Calcareous fens with <i>Cladium mariscus</i> and species of the Caricion davallianae</b>	<b>C</b>	Maintain or expand the area/shoreline length of vegetation with >50% <i>Cladium mariscus</i> cover.
		Areas of alkaline fen adjacent to <i>Cladium mariscus</i> dominated zones should remain in favourable condition.
		Frequency of tree / scrub spp. incl. saplings no more than rare.

## 9. ASSI FEATURE OBJECTIVE REQUIREMENTS

Feature	Component Objective
Marl Lakes	See SAC Selection Feature Objective Requirements table.
Fens	See SAC Selection Feature Objective Requirements table.
White-clawed Crayfish	See SAC Selection Feature Objective Requirements table.
Invertebrate Assemblage	To be finalised.

## 10. MANAGEMENT CONSIDERATIONS

### Ownership

All of the lakes are in individual private ownership, and with the exception of Knockballymore Lough, in multiple ownership.

Three of the lakes straddle the border with the Republic of Ireland, and a further lake abuts the border.

Summerhill Lough	Border runs through lake basin
Kilroosky Lough	Border runs through lake basin
Burdautien Lough	Border runs through lake basin
Drumacrittin Lough	Site boundary runs to border
Knockballymore Lough	Wholly within Northern Ireland
Annachullion Lough	Wholly within Northern Ireland

## 11. MAIN THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Both on-site and off-site activities can potentially affect SAC/ASSI features. The list below is not exhaustive, but deals with the most likely factors that are either affecting Magheraveely Marl Loughs, or could affect it in the future.

Although **Hard oligo-mesotrophic waters with benthic vegetation of *Chara* formations, White-clawed Crayfish *Austropotamobius pallipes*, Alkaline fens and Calcareous fens with *Cladium mariscus* and species of the Caricion *davallianae*** are the qualifying SAC features, factors affecting ASSI features are also considered.

**NOTE - Carrying out any of the Notifiable Operations listed in the ASSI schedule could affect the site.**

### ***Application of fertiliser***

Application of fertiliser, either in inorganic form or as manure/slurry to the catchment could have great repercussions for the water quality. Marl lake water bodies are characterised by very clear water and low nutrient status. They are chemically buffered from phosphorus (P) enrichment to a degree, as P is immobilised by marl formation, but P is still stored and may be released if the buffering mechanism is disrupted and the lake 'switches' to a eutrophic state. This increases the vulnerability of these lakes as the early stages of P accumulation are disguised.

The effect upon adjacent wetlands is also noticeable as the vegetation type shifts to one adapted to more fertile wetlands and the influence of Calcium becomes a secondary variable. Changes in surrounding land use, for example Conifer plantation on a small scale, has been noted around Kilroosky Lough, and this may be accompanied by fertiliser application.

**ACTION: Prevent nutrient enrichment from fertiliser drift and runoff by encouraging landowners to leave adequate buffer strips between fertiliser spray areas and sensitive interest features such as alkaline fens and nutrient poor loughs.**

### ***Drainage***

On wetlands, a reduction in the frequency or duration of saturation or inundation has obvious direct effects on wetland organisms. For lakes, the effect can be profound even if the lake itself is not threatened, as the lake edge contracts the photic zone will move with it, and the lake bed substrate and depth profile will not necessarily be similar at the new location.

Major capital schemes for arterial drainage have in the past been very damaging to lakes and wetlands in Northern Ireland, but now seem to be out of political favour. But piecemeal land drainage has also been a feature of agricultural

intensification in Ireland. Kilroosky Lough provides an example, where the outflow was deepened to lower the water level. A temporary sluice funded by Dúchas has recently been damaged by by-passing.

Underdrained grassland is more likely to lose nitrogen than undrained soil, as the sub-surface drains carry nutrient-rich water away from the area

**ACTION: Installation of a staff gauge in these lakes with the owners permission. This is also important when depth measurements are implicated by monitoring.**

### ***Sedimentation***

The natural process of siltation and terrestriation, sometimes hastened by management, may threaten the existence of an open water area in shallow lakes, in most cases this would be regarded as an unwelcome loss of site diversity.

**ACTION: Reduce the rate of catchment sedimentation by encouraging landowners to leave adequate vegetation buffer strips between ploughed fields and adjacent drains and streams that may drain into the alkaline fens and nutrient poor loughs.**

### ***Invasion by exotics***

In the UK, introduced crayfish species are aggressively out-competing the white-clawed crayfish and crayfish plague, introduced with them, is spreading through the country, wiping out the white-clawed crayfish populations. In Northern Ireland, no crayfish farms have been established and as of 2001, we do not have this problem, but the possibility of exotic crayfish species and of crayfish plague spreading here cannot be ruled out.

**ACTION: Site integrity monitoring.**

### ***Grazing intensity***

Marshes and swamps are affected by grazing and hence are vulnerable to poor grazing management - this could be the heavy grazing of all marsh and swamp areas, suppressing the development of tall vegetation and causing excessive poaching, or equally, could be the exclusion of grazers from all wetland areas, suppressing the development of open freshwater marsh swards in favour of species-poor swamp stands.

**ACTION: Through liaison with landowners and monitoring, ensure sustainable grazing levels for the conservation interest features.**

### ***Nitrogen Deposition***

Excess nitrogen deposition can favour the growth of competitive plants and lead to changes in ecosystem structure or function and to a reduction in biodiversity. National scale studies show the potential adverse effects of excess nitrogen on natural and semi-natural habitats to be widespread across the UK. Lower and upper critical loads have been calculated for Magheraveely Marl Loughs SAC.

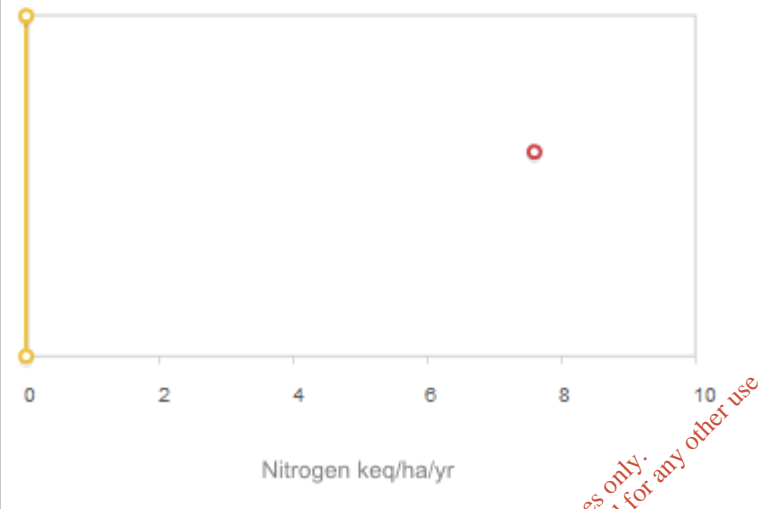
**Feature:** Hard oligo-mesotrophic waters with benthic vegetation of Chara spp

**Critical Load Class:** No comparable habitat with established critical load estimate available

**Critical Loads (kg N/ha/yr):** no critical loads available for this feature

**Nitrogen Deposition (kg N/ha/yr):**

Maximum: 7.6 Minimum: 6 Average: 6.7



	Minimum CL
	Maximum CL
	Total Max Deposition

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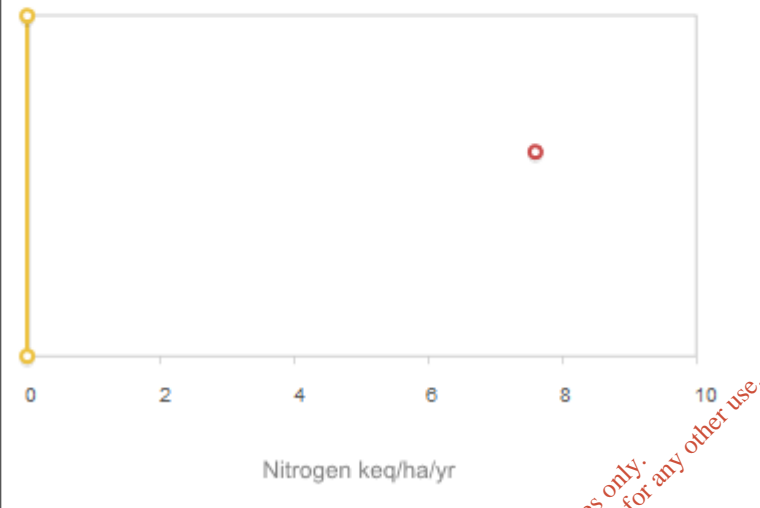
**Feature:** Austroptamobius pallipes - White-clawed (or Atlantic stream) crayfish



**Critical Load Class:** No comparable habitat with established critical load estimate available

**Critical Loads (kg N/ha/yr):** no critical loads available for this feature

**Nitrogen Deposition (kg N/ha/yr):**

Maximum: 7.6 Minimum: 6 Average: 6.7



	Minimum CL
	Maximum CL
	Total Max Deposition

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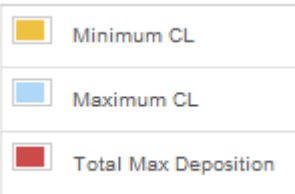
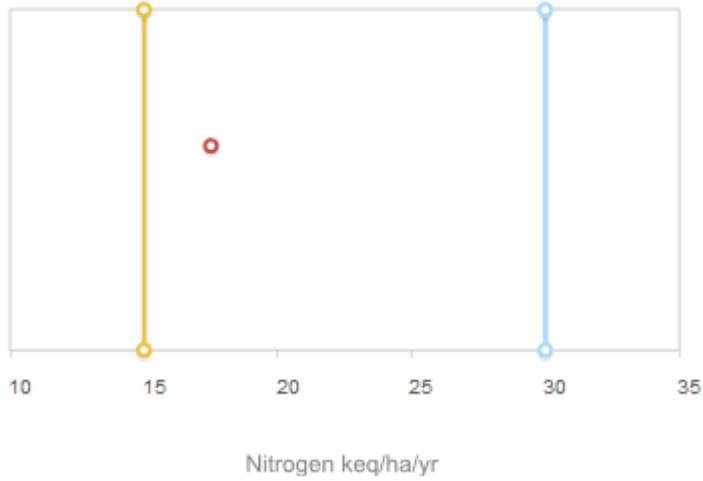
**Feature:** Alkaline fens

**Critical Load Class:** Rich fens

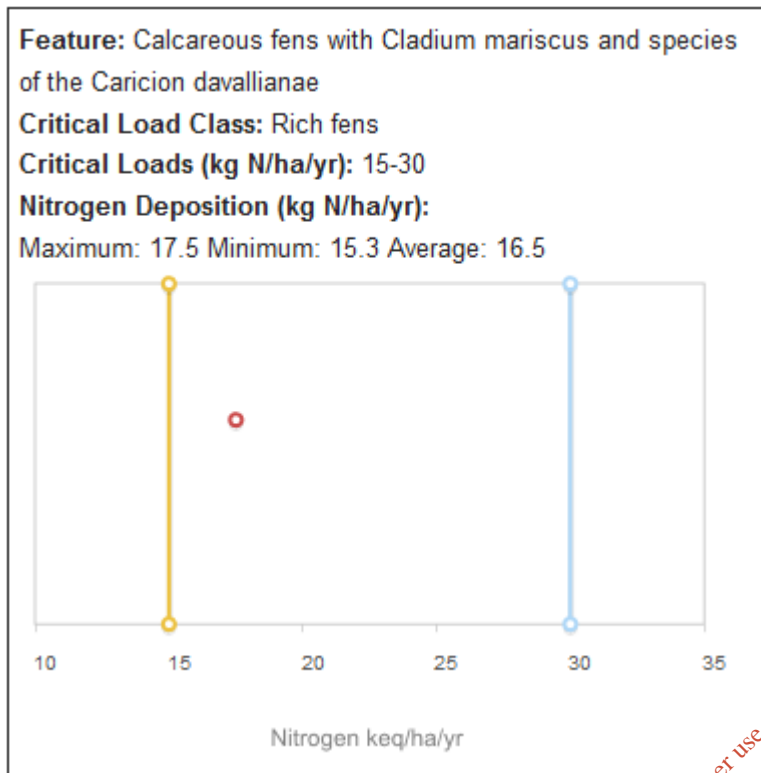
**Critical Loads (kg N/ha/yr):** 15-30

**Nitrogen Deposition (kg N/ha/yr):**

Maximum: 17.5 Minimum: 15.3 Average: 16.5



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(Source: Air Pollution Information System (APIS) website- [www.apis.ac.uk](http://www.apis.ac.uk))

**ACTION:** Seek to maintain or where necessary, restore concentrations and deposition of air pollutants to at or below the site-relevant critical load.

#### ***Changes to surrounding land use***

Any changes in local land-use e.g. agricultural intensification, drainage works and development) may be detrimental to the SAC.

**Action:** Reduce the risk of surrounding agricultural intensification by encouraging the adjacent owner/occupiers to enter into agri-environment schemes. Use Habitats Regulations Assessments (HRAs), through the planning process, to minimise any development risks adjacent to the SAC.

#### ***Climate Change***

Northern Ireland faces changes to its climate over the next century. Indications are that we will face hotter, drier summers, warmer winters and more frequent extreme weather events.

**ACTION:** When developing SAC management plans, the likely future impacts of climate change should be considered and appropriate changes made.



## 12. MONITORING

Monitoring of SACs takes place using two monitoring techniques.

**Site Integrity Monitoring (SIM)** is carried out to ensure compliance with the ASSI/ SAC Schedule. The most likely processes of change will either be picked up by SIM (e.g. dumping, burning, turf cutting, grazing etc.) or will be comparatively slow (e.g. gradual degradation of the habitat).

These longer-term changes will be picked up by monitoring of the feature via **Site Condition Assessment** - this is carried out on a rolling basis to pick up subtle changes in the condition of the feature.

The method for Site Condition Assessment was agreed by the relevant JNCC-led Lead Co-ordination Network although the methodology has been modified to reflect individual site attributes in Northern Ireland.

### 12.1 MONITORING SUMMARY

#### **1. Monitor the integrity of the site (SIM or Compliance Monitoring)**

Check for obvious signs of damage e.g. check on the lakes' water levels, signs of drainage in the designated area and signs of over-stocking causing damage to habitats adjacent to the lakes. This SIM should be carried out once a year.

#### **2. Monitor the condition of the site (Condition Assessment)**

Monitor the key attributes for each of the SAC selection features. This will detect if the features are in favourable condition or not. See Annex I.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any Habitats Regulations Assessment (HRA) that may be needed. It should be noted that completion of a HRA is a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

### 13. REFERENCES

Cooper, A., McCann, T. and Rogers, D. (2009). Northern Ireland Countryside Survey 2007: Broad Habitat Change 1998-2007. Northern Ireland Environment Agency Research and Development Series No.09/06

Department of the Environment for Northern Ireland (2005). Northern Ireland Habitat Action Plan – Marl Lakes.

Department of the Environment for Northern Ireland (2005). Northern Ireland Habitat Action Plan – Fens.

European Commission (2000). Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

European Commission (2001). Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

European Commission (2014). Establishing conservation measures for Natura 2000 Sites.

Joint Nature Conservation Committee (JNCC) (2013). 3<sup>rd</sup> UK Habitats Directive Report.

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ANNEX I

Feature 1 (SAC) – Hard oligo-mesotrophic waters with benthic vegetation of *Chara* formations (Status B)

(\* = primary attribute. One failure among primary attribute = unfavourable condition)

Attribute	Measure	Targets	Comments
*Nutrient status	Summer total phosphorus µg/l <sup>-1</sup>	No more than 25 µg/l <sup>-1</sup> in any lake, and no more than 25% higher than the NI Lakes Survey value.	Part of SIM.  Collection methods still to be established
	Abundance weighted Trophic Ranking score	Within 0.2 of the NI Lakes Survey generated value	
	Abundance weighted Trophic Ranking Score	Less than 7.6 in all lakes	
*Water clarity	Subjective assessment	Clear	
	Secchi disc depth if lake is deep enough (cm)	Still visible at 300 cm	

*Charophyte extent	Plant Importance Value for total charophyte presence	No decline since the N I Lake Survey or  PIV at least 3 (Frequent) in all lakes.	
	% of the phototrophic zone occupied.	> 50% occupied	Generic guidelines have varied in the target (lower LAC) cover of Chara in the photic – from 5% to 50%
*Filamentous algae (blanketweed)	Plant Importance Value	PIV <2 (occasional)	
Selected aquatic species	Plant Importance Values for any of: <i>Potamogeton coloratus</i> <i>Hippurus vulgaris</i> <i>Utricularia vulgaris</i> agg. <i>Chara hispida</i> var. <i>rudis</i> (=C. <i>rudis</i> )	No decline by a value more than 1 since the N I Lake Survey.	
*Sedimentation	Maximum depth c.f. staff gauge reference.	< 6cm reduction in a 6 year reporting cycle	

*Accretion	Width of swamp zone from a fixed point.	Less than 1m increase from the fixed point to the edge of the dense reeds. in any 6 year period.	
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**Feature 2 (SAC) – White-clawed Crayfish *Austropotamobius pallipes* (Status B)**

(\* = primary attribute. One failure among primary attribute = unfavourable condition)

Attribute	Measure	Targets	Comments
* Population size	Catch per unit effort (CPU). Based on 40 liver-baited Trappy traps © with 10 mm mesh in clusters of 10 at four locations overnight	At least five lakes with populations.  At least one lake with a CPU > 1	All lakes to be sampled
* Recruitment	Size distribution of crayfish within the sample	Smallest cohort for the trap mesh size > 5% of the sample.	
Population health	Crayfish plague symptoms	None	
	Thelohianiasis symptoms	< 10% of the sample where the sample numbers >20 individuals	

Feature 3 (SAC) – Alkaline fens (Status B)

(\* = primary attribute. One failure among primary attribute = unfavourable condition)

Attribute	Measure	Targets	Comments
* Extent	% of lakeshore backed by alkaline fen	No decline since the Northern Ireland Lakes Survey	= communities identifiable as Northern Ireland Lakes Survey Shore type 29 with > 50% small sedge cover  Define fixed transects
	Width of alkaline fen zones (m)	No decrease in baseline reference value at any transect.	identifiable as type 29 with > 50% small sedge cover
*Community diversity	Number of recognisable alkaline fen sociations	No loss of recognisable sociations	Regardless of ease of NVC classification

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<p>*Sward composition in alkaline fen areas</p>	<p>Frequency of positive indicators (DAFOR scale)</p> <p><i>Carex diandra</i>  <i>Carex elata</i>  <i>Carex paniculata</i>  <i>Carex pseudocyperus</i>  <i>Carex viridula ssp brachyrrhyncha</i>  <i>Cladium mariscus</i>  <i>Epipactis palustris</i>  <i>Galium uliginosum</i>  <i>Lysimachia vulgaris</i>  <i>Parnassia palustris</i>  <i>Rorippa palustris</i>  <i>Sagina nodosa</i>  <i>Scutellaria galericulata</i>  <i>Veronica anagallis-aquatica</i>  <i>Veronica scutellata</i></p>	<p>No loss of more than one species since the baseline survey.</p>	<p>From anywhere in the fen/wetland.</p> <p>Note DAFOR status and position of the plants for use by future surveyors.</p>
<p>*Sward composition in alkaline fen areas</p>	<p>Frequency of negative indicators (DAFOR scale) as listed in 'monitoring species lists.doc'</p>	<p>Determine on a site by site basis</p>	<p>Use to identify a drift towards a grassy state – <i>Agrostis stolonifera</i>, <i>Holcus lanatus</i>, <i>Juncus effusus</i>, <i>Ranunculus repens...</i> etc.</p> <p>or to a more nutrient-rich state – <i>Epilobium hirsutum</i>, <i>Urtica dioica</i>, <i>Calystegia sepium....</i> etc.</p>

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	Species-richness	No single species overwhelmingly dominant	although <i>Carex diandra</i> is often very abundant
* Sward structure in the fen areas	Cover of tall grasses	No more than 25%.	
	Cover of small sedges	No less than 50%	
	Frequency of tree/scrub spp.	Frequency of tree / scrub spp. incl. saplings no more than Rare (Occasional??) (DAFOR scale)	Alder ( <i>Alnus glutinosa</i> ) is the most likely coloniser – check carefully for establishment.
	Extent of bare mud or peat visible without disturbing the vegetation	No more than 10%	
	Average vegetative sward height	No less than 10 cm	
	Frequency of litter/thatch accumulation in the alkaline fen areas	No more than occasional	Hard to measure or estimate.

	Hoof prints	No more than occasional over the whole fen	
* Hydrology	Normal summer level of the 'water table' relative to the ground surface.	In the range 0 to - 12 cm	Dig a small hole, replace 'divot' afterwards
	Ellenberg mean F in the fen area	No more than 10% decline from baseline	Based on the fixed transects
	Drains	No new drains	

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**Feature 4 (SAC) – Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* (Status C)**

(\* = primary attribute. One failure among primary attribute = unfavourable condition)

Attribute	Measure	Targets	Comments
*Extent	% of shoreline occupied by vegetation with <i>Cladium mariscus</i> cover > 50%  Area of vegetation with <i>Cladium mariscus</i> cover > 50%	For both measures:  Maintenance or expansion in Kilroosky Burdautien and Summerhill Loughs  (Re)establishment in suitable areas in the other sub-sites	Expansion into, but not dominance in any adjacent small sedge zones is desirable.
*Adjacent small sedge mires	Extent of calcium enriched small sedge mire adjacent to the <i>Cladium mariscus</i> bed.	Maintenance of the baseline extent	

## Reasons for designation as a Special Area of Conservation

Area name:	<b>Magheraveely Marl Loughs</b>
Administrative area:	<b>Fermanagh</b>
Component ASSI:	<b>Annachullion Lough Burdautien Lough Drumacrittin Lough Kilroosky Lough Knockballymore Lough Summerhill Lough</b>

This area has been designated as a Special Area of Conservation (SAC) because it contains habitat types and/or species which are rare or threatened within a European context. The ASSI citation describes the special interests for which the site was notified in the Northern Ireland context. The interests for which the site was selected as ASSI may differ from the interests selected in a European context.

The habitats and/or species for which this area has been designated as a SAC are listed below. The reasons for their selection are listed, together with a brief description of the habitats and species as they typically occur across the UK. This area contains the interests described although it may not contain all the typical features.

### European priority interest(s):

#### 1. Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*

- which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares.
- for which the area is considered to support a significant presence.

Calcium-rich fen dominated by great fen sedge (saw sedge). These base-rich fens are characterised by the presence of great fen sedge *Cladium mariscus* which may form virtually pure stands where it has colonised open water. In other, usually very wet situations, a wealth of herbs, such as yellow loosestrife *Lysimachia vulgaris* and purple-loosestrife *Lythrum salicaria*, and sedges, such as bottle sedge *Carex rostrata*, may occur with it. Many of these species are uncommon or rare in the UK.

### European interest(s):

#### 2. *Austropotamobius pallipes*

- for which this is considered to be one of the best areas in the United Kingdom.

White-clawed (or Atlantic stream) crayfish. This crayfish is a large freshwater crustacean, preferring lime-rich waters, which lives in lakes and rivers in England,

Wales and Northern Ireland. It has disappeared from many rivers as a result of declines in water quality and the introduction of crayfish plague, a disease carried by signal crayfish *Pacifastacus leniusculus* imported from North America for farming.

**3. Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.**

- **for which this is considered to be one of the best areas in the United Kingdom.**

Calcium-rich nutrient-poor lakes, lochs and pools. Lakes, lochs or pools rich in calcium or other bases, but often poor in nutrients, with submerged beds of stoneworts *Chara* species. Several species of pondweed, such as long-stalked pondweed *Potamogeton praelongus*, may also occur in these lakes. This is a rare and unusual freshwater habitat type because most calcareous substrates are free-draining. Unpolluted examples are particularly scarce.

**4. Alkaline fens**

- **for which this is considered to be one of the best areas in the United Kingdom.**

Calcium-rich springwater-fed fens. These are wetland areas that are supplied with base-rich ground water. The water level is permanently high. The vegetation of these fens varies but is usually composed of low-growing sedges, rushes, herbs and mosses, which may include black bog-rush *Schoenus nigricans*, dioecious sedge *Carex dioica* and common butterwort *Pinguicula vulgaris*. Many plants that are rare or scarce in the UK occur in base-rich fens.

<b>The Register of European Sites in Northern Ireland</b>	
Register reference number:	UK0016621
Date of Registration	30 March 2006
Signed by: G R Seymour	
on behalf of the Department of the Environment	

# NATURA 2000 – STANDARD DATA FORM

## Special Areas of Conservation under the EC Habitats Directive (includes candidate SACs, Sites of Community Importance and designated SACs).

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the [Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011](#) (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here  
[http://bd.eionet.europa.eu/activities/Natura\\_2000/reference\\_portal](http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal)

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:  
[http://jncc.defra.gov.uk/pdf/Natura2000\\_StandardDataForm\\_UKApproach\\_Dec2015.pdf](http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf)

More general information on Special Areas of Conservation (SACs) in the United Kingdom is available from the [SAC home page on the JNCC website](#). This webpage also provides links to Standard Data Forms for all SACs in the UK.

Date form generated by the Joint Nature Conservation Committee  
25 January 2016.

<http://jncc.defra.gov.uk/>



# NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),  
Proposed Sites for Community Importance (pSCI),  
Sites of Community Importance (SCI) and  
for Special Areas of Conservation (SAC)

SITE UK0016621  
SITENAME Magheraveely Marl Loughs

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- [1. SITE IDENTIFICATION](#)
- [2. SITE LOCATION](#)
- [3. ECOLOGICAL INFORMATION](#)
- [4. SITE DESCRIPTION](#)
- [5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES](#)
- [6. SITE MANAGEMENT](#)

## 1. SITE IDENTIFICATION

<b>1.1 Type</b> B	<b>1.2 Site code</b> UK0016621	<a href="#">Back to top</a>
----------------------	-----------------------------------	-----------------------------

### 1.3 Site name

Magheraveely Marl Loughs
--------------------------

<b>1.4 First Compilation date</b> 1995-06	<b>1.5 Update date</b> 2015-12
--	-----------------------------------

### 1.6 Respondent:

<b>Name/Organisation:</b> Joint Nature Conservation Committee
<b>Address:</b> Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
<b>Email:</b>

<b>Date site proposed as SCI:</b>	1995-06
<b>Date site confirmed as SCI:</b>	2004-12
<b>Date site designated as SAC:</b>	2005-05
<b>National legal reference of SAC designation:</b>	Regulations 6-7 and 10-12 of The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 ( <a href="http://www.legislation.gov.uk/nisr/1995/380/contents/made">http://www.legislation.gov.uk/nisr/1995/380/contents/made</a> ) as amended by The Conservation (Natural Habitats, etc.) (Amendment) Regulations (Northern Ireland) 2004 ( <a href="http://www.legislation.gov.uk/nisr/2004/435/contents/made">http://www.legislation.gov.uk/nisr/2004/435/contents/made</a> ).

## 2. SITE LOCATION

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### 2.1 Site-centre location [decimal degrees]:

**Longitude**

-7.266666667

**Latitude**

54.18916667

### 2.2 Area [ha]:

58.89

### 2.3 Marine area [%]

0.0

### 2.4 Sitelength [km]:

0.0

### 2.5 Administrative region code and name

**NUTS level 2 code**

**Region Name**

UKNO

Northern Ireland

### 2.6 Biogeographical Region(s)

Atlantic (100.0  
%)

## 3. ECOLOGICAL INFORMATION

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### 3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment		
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A B C D	A B C	
						Representativity	Relative Surface	Conservati
3140			6.21		G	A	C	A
7210	X		0.8		G	C	C	C
7230			6.8100000000000005		G	B	C	B

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

### 3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive



92/43/EEC and site evaluation for them

Species			Population in the site							Site assessment				
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A B C D		A B C	
						Min	Max				Pop.	Con.	Iso.	Gl
I	1092	<a href="#">Austroptamobius pallipes</a>			p				P	DD	C	A	C	B

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see [reference portal](#))
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

## 4. SITE DESCRIPTION

### 4.1 General site character

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Habitat class	% Cover
N23	0.3
N21	1.5
N14	1.0
N08	3.5
N06	24.0
N07	19.5
N10	31.0
N09	1.5
N16	17.7
<b>Total Habitat Cover</b>	<b>100</b>

### Other Site Characteristics

1 Terrestrial: Soil & Geology: basic,limestone,nutrient-poor,peat,clay 2 Terrestrial: Geomorphology and landscape: lowland

### 4.2 Quality and importance

Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. for which this is considered to be one of the best areas in the United Kingdom. Calcareous fens with Cladium mariscus and species of the Caricion davallianae for which the area is considered to support a significant presence. which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares. Alkaline fens for which this is considered to be one of the best areas in the United Kingdom. Austroptamobius pallipes for which this is considered to be one of the best areas in the United Kingdom.

### 4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i o b]
L	G01		I
M	I01		I
H	K02		I
H	H01		O
H	J02		I
L	H04	N	I
H	H02		O
M	XO		I
H	A04		I

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i o b]
H	J02		I
H	A04		I
H	B03		I
L	G01		I

Rank: H = high, M = medium, L = low

Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,

T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions

i = inside, o = outside, b = both

### 4.5 Documentation

Conservation Objectives - the DOENI link below provides access to the Conservation Objectives for this site. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): <https://www.doeni.gov.uk/sites/default/files/publications/doe/land-information-magheraveely-mar-loughs-conservation-objectives.pdf>  
[http://jncc.defra.gov.uk/pdf/Natura2000\\_StandardDataForm\\_UKApproach\\_Dec2015.pdf](http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf)

## 5. SITE PROTECTION STATUS (optional)

### 5.1 Designation types at national and regional level:

[Back to top](#)

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

## 6. SITE MANAGEMENT

### 6.1 Body(ies) responsible for the site management:

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Organisation:	Northern Ireland Environment Agency
Address:	
Email:	

### 6.2 Management Plan(s):

An actual management plan does exist:

<input type="checkbox"/> Yes
<input type="checkbox"/> No, but in preparation
<input type="checkbox"/> No

### 6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

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## EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the [official European Union guidelines for the Standard Data Form](#). The relevant page is shown in the table below.

### 1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
B	SAC (includes candidates Special Areas of Conservation, Sites of Community Importance and designated SAC)	53
C	SAC area the same as SPA. Note in the UK Natura 2000 submission this is only used for Gibraltar	53

### 3.1 Habitat representativity

CODE	DESCRIPTION	PAGE NO
A	Excellent	57
B	Good	57
C	Significant	57
D	Non-significant presence	57

### 3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippophila rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

### 3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	15%-100%	58
B	2%-15%	58
C	< 2%	58

### 3.1 Conservation status habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

### 3.1 Global grade habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

### 3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	15%-100%	62
B	2%-15%	62
C	< 2%	62
D	Non-significant population	62

### 3.2 Conservation status species (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

### 3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

### 3.2 Global Grade (abbreviated to 'Glo.' Or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

### 3.3 Assemblages types

CODE	DESCRIPTION	PAGE NO
WATR	Non breeding waterfowl assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code
BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

#### 4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Scree, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

#### 4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic resources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc.), trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

### 5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67



## APPENDIX 2

- SLIEVE BEAGH SPA SITE SYNOPSIS
  
- CONSERVATION OBJECTIVES FOR SLIEVE BEAGH SPA
  
- CONSERVATION OBJECTIVES FOR SLIEVE BEAGH – MULLAGHFAD - LISNASKEA SPA
  
- SLIEVE BEAGH SPA STANDARD DATA FORM

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## Conservation objectives for Slieve Beagh SPA [004167]

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

Bird Code	Common Name	Scientific Name
A082	Hen Harrier	<i>Circus cyaneus</i>



**Citation:** NPWS (2018) Conservation objectives for Slieve Beagh SPA [004167]. Generic Version 6.0.  
Department of Culture, Heritage and the Gaeltacht.

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# NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),  
Proposed Sites for Community Importance (pSCI),  
Sites of Community Importance (SCI) and  
for Special Areas of Conservation (SAC)

SITE IE0004167  
SITENAME Slieve Beagh SPA

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- [6. SITE MANAGEMENT](#)
- [7. MAP OF THE SITE](#)

## 1. SITE IDENTIFICATION

<b>1.1 Type</b> A	<b>1.2 Site code</b> IE0004167	<a href="#">Back to top</a>
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### 1.3 Site name

Slieve Beagh SPA
------------------

<b>1.4 First Compilation date</b> 2010-04	<b>1.5 Update date</b> 2017-09
--	-----------------------------------

### 1.6 Respondent:

<b>Name/Organisation:</b> National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht
<b>Address:</b> 7 Ely Place, Dublin 2, Ireland
<b>Email:</b> datadelivery@ahg.gov.ie

### 1.7 Site indication and designation / classification dates

<b>Date site classified as SPA:</b>	2007-03
<b>National legal reference of SPA designation</b>	No data

## 2. SITE LOCATION

### 2.1 Site-centre location [decimal degrees]:

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Longitude

Latitude

-7.130922564

54.32701951

**2.2 Area [ha]:**

3455.347001

**2.3 Marine area [%]**

0.0

**2.4 Sitelength [km]:**

0.0

**2.5 Administrative region code and name**

**NUTS level 2 code**

**Region Name**

IE01	Border, Midland and Western
------	-----------------------------

**2.6 Biogeographical Region(s)**

Atlantic (%)

**3. ECOLOGICAL INFORMATION**

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**3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them**

Species			Population in the site							Site assessment				
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A B C D	A B C		
						Min	Max				Pop.	Con.	Iso.	Glo.
B	A082	<a href="#">Circus cyaneus</a>			p	4	4	p		G	C	A	C	B
B	A098	<a href="#">Falco columbarius</a>			r	2	2	p		G	C	B	C	C

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see [reference portal](#))
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

**3.3 Other important species of flora and fauna (optional)**

Species	Population in the site	Motivation

Group	CODE	Scientific Name	S	NP	Size		Unit	Cat.	Species Annex		Other categories				
					Min	Max			C R V P	IV	V	A	B	C	D
B		<a href="#">Lagopus lagopus</a>									X				

- **Group:** A = Amphibians, B = Birds, F = Fish, Fu = Fungi, I = Invertebrates, L = Lichens, M = Mammals, P = Plants, R = Reptiles
- **CODE:** for Birds, Annex IV and V species the code as provided in the reference portal should be used in addition to the scientific name
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Unit:** i = individuals, p = pairs or other units according to the standard list of population units and codes in accordance with Article 12 and 17 reporting, (see [reference portal](#))
- **Cat.:** Abundance categories: C = common, R = rare, V = very rare, P = present
- **Motivation categories:** **IV, V:** Annex Species (Habitats Directive), **A:** National Red List data; **B:** Endemics; **C:** International Conventions; **D:** other reasons

## 4. SITE DESCRIPTION

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### 4.1 General site character

Habitat class	% Cover
N20	44.0
N09	8.0
N08	19.0
N06	2.0
N07	18.0
N22	1.0
N10	8.0
<b>Total Habitat Cover</b>	<b>100</b>

### Other Site Characteristics

The Slieve Beagh SPA comprises much of the eastern and south-eastern sectors of the Slieve Beagh upland area that extends from County Monaghan into Northern Ireland. The site consists of mountain blanket bog, which is well developed at the higher altitudes and especially at Eshbrack (peak of 365m). In places the bog is cutover and there are also wet and dry heaths present. The mid-slopes are afforested, with plantations of various ages. The remainder of the site is rough or marginal grassland. Some of the old fields system support species-rich wet grassland vegetation dominated by soft rush. Several small dystrophic lakes are present within the site.

### 4.2 Quality and importance

The SPA is one of the strongholds for Hem Harrier in the country, representing over 1% of the all-Ireland total. However, when the Northern Ireland sector of Slieve Beagh is considered, there were a total of 10 breeding pairs in 2005. The mix of forestry and open areas provides optimum habitat conditions for this rare bird. The early stage of new and second-rotation conifer plantation are the most frequently used nesting sites, though some pairs may still nest in tall heather of unplanted bog and heath. Merlin have also been recorded within the site.

### 4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i o b]
M	C01.03		i
L	D01.02		i
L	D01.01		i

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i o b]
L	D01.01		i
L	D01.02		i

Rank: H = high, M = medium, L = low

Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,

T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions

i = inside, o = outside, b = both

#### 4.5 Documentation

Barton, C., Pollock, C., Norriss, D.W., Nagle, T., Oliver, G.A. and Newton, S. (2006). The second national survey of breeding Hen Harriers *Circus cyaneus* in Ireland 2005. *Irish Birds* 8: 1-20. Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. and Thompson, D. (2009). *Raptors, A Field Guide for Surveys and Monitoring*. Scottish National Heritage. Heery, S. (2009). *Birds in Central Ireland. Fourth Mid-Season Bird Report 2004-2007*. BirdWatch Ireland, Kilcoole. Lynas, P., Newton, S.F. and Robinson, J.A. (2009). The status of birds in Ireland: an analysis of conservation concern 2008-2013. *Irish Birds*, 8(2): 149-166. Norriss, D.W., Marsh, J., McMahon, D. and Oliver, G.A. (2002). A national survey of breeding Hen Harriers *Circus cyaneus* in Ireland 1998-2000. *Irish Birds* 7: 1-12. O'Flynn, W.J. (1983). Population changes of the Hen Harrier in Ireland. *Irish Birds* 2: 337-343. Wilson, M., Gittings, T., O'Halloran, J., Kelly, T. and Pithon, J. (2005). The Distribution of Hen Harriers in Ireland in Relation to Land-use Cover and Forest Cover in Particular. COFORD, Dublin.

## 5. SITE PROTECTION STATUS (optional)

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### 5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
IE99	1.0				

### 5.2 Relation of the described site with other sites:

designated at national or regional level:

Type code	Site name	Type	Cover [%]
IE99	Eshbrack Bog NHA	+	1.0

## 6. SITE MANAGEMENT

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### 6.2 Management Plan(s):

An actual management plan does exist:

<input type="checkbox"/>	Yes
<input type="checkbox"/>	No, but in preparation
<input checked="" type="checkbox"/>	No



## 7. MAP OF THE SITES

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INSPIRE ID:

IE.NPWS.PS.NATURA2000.SPA.IE0004167

Map delivered as PDF in electronic format (optional)

Yes  No

Reference(s) to the original map used for the digitalisation of the electronic boundaries (optional).

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## SITE SYNOPSIS

**SITE NAME: SLIEVE BEAGH SPA**

**SITE CODE: 004167**

The Slieve Beagh SPA comprises much of the eastern and south-eastern sectors of the Slieve Beagh upland area that extends from County Monaghan into Northern Ireland.

Mountain blanket bog is well developed at the higher altitudes and especially at Eshbrack (peak of 365 m). The vegetation is largely dominated by Deergrass (*Scirpus cespitosus*), Ling Heather (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Hare's-tail Cottongrass (*Eriophorum vaginatum*), Common Cottongrass (*E. angustifolium*), Crowberry (*Empetrum nigrum*) and a range of mosses such as *Sphagnum capillifolium*, *S. papillosum*, *S. tenellum* and *Hypnum cupressiforme*. Elsewhere the bog is mostly cutover and there are also wet and dry heaths present. In total, bog and heath occupies 43% of the site. The mid-slopes are afforested (40% of site), with plantations of various ages (open canopy, closed canopy, clear-fell). The remainder of the site is rough or marginal grassland (16%). Some of the old field systems support species-rich wet grassland vegetation dominated by Soft Rush (*Juncus effusus*). Several small dystrophic lakes are present within the site.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for Hen Harrier.

The site is one of the strongholds for Hen Harrier in the country. A survey in 2005 recorded four pairs, representing over 1.9% of the all-Ireland total. However, when the Northern Ireland sector of Slieve Beagh is considered, there was a total of 10 breeding pairs in 2005. The mix of forestry and open areas provides optimum habitat conditions for this rare bird, which is listed on Annex I of the E.U. Birds Directive. The early stages of new and second-rotation conifer plantations are the most frequently used nesting sites, though some pairs may still nest in tall heather of unplanted bogs and heath. Hen Harriers will forage up to c. 5 km from the nest site, utilising open bog and moorland, young conifer plantations and hill farmland that is not too rank. Birds will often forage in openings and gaps within forests. In Ireland, small birds and small mammals appear to be the most frequently taken prey.

The site also supports breeding Merlin, with two pairs recorded in 2002-03. Further survey is required to determine the exact status of this small falcon. Red Grouse is found in unplanted areas of bog and heath – this is a species that has declined in Ireland and is now Red-listed. Peregrine nest in the Northern Ireland sector of Slieve Beagh and can be seen over the site at times.

Slieve Beagh SPA is of ornithological importance because it provides excellent nesting and foraging habitat for breeding Hen Harrier and is one of the top sites in the country for the species. The presence of three species, Hen Harrier, Merlin and Peregrine, which are listed on Annex I of the E.U. Birds Directive is of note.

## APPENDIX 3

- CONSERVATION OBJECTIVES FOR SLIEVE BEAGH SAC

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## SLIEVE BEAGH SAC

UK0016622

# CONSERVATION OBJECTIVES

### Document Details

Title	<i>Slieve Beagh SAC Conservation Objectives</i>
Prepared By	<i>R. McKeown</i>
Approved By	<i>P. Corbett</i>
Date Effective From	<i>11/10/2017</i>
Version Number	<i>V2.1</i>
Next Review Date	Nov 2020
Contact	<a href="mailto:cdp@daera-ni.gov.uk">cdp@daera-ni.gov.uk</a>

### Revision History:

Version	Date	Summary of Changes	Initials
V1.0	June 2013	Internal working document	PC
V2.0	Nov 2014	Complete review	RMK
V2.0	01/04/2015	Effective date of version 2.0	PC
V2.1	11/10/2017	Removed wording 'excluding recently burnt areas' from bare peat target in all relevant Annex tables	PMC

### Site relationships

To fully understand the conservation requirements of this site, it is necessary to also refer to the Conservation Objectives for Slieve Beagh SPA.

Slieve Beagh SAC is contained within the larger Slieve Beagh SPA.

## 1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives<sup>1</sup> to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

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<sup>1</sup> 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

## 2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition
- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.
- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

## 3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas it covers within that range are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and;
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and;
- there is, and will probably continue to be, a sufficiently large habitat to maintain its population on a long term basis.

### 3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as “the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site”.

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

### 4. SITE INFORMATION

COUNTY: TYRONE, FERMANAGH

GRID REFERENCE: IH525445

AREA: 1900 ha

### 5. SUMMARY SITE DESCRIPTION

Slieve Beagh is an upland area lying approximately four miles south of Clogher in County Tyrone, with the southern most projection extending into County Fermanagh. The upland area also extends across the border into Co. Monaghan. Within Northern Ireland, the upland topography undulates to a maximum height of 380 m at Dooearn, but generally lies between 200 and 350 m. The blanket bog, which covers most of the area, is the third largest intact bog in Northern Ireland.

Peat depth is variable and consequently the peatland structure is highly diverse with hummock, lawn and pool complexes on the deepest peats grading into large expanses of blanketing peats on low gradients to heathland communities on the steepest and more exposed slopes. Typically, the peatland vegetation supports good *Sphagnum*-rich blanket bog vegetation with high dwarf-shrub cover. Several lakes, on site have characteristically un-enriched waters with some conforming to EU 'Habitats Directive' Annex I types.

Further details of the site are contained in the ASSI Citation and Views About Management statement, which are available on the NIEA website ([www.doeni.gov.uk/niea](http://www.doeni.gov.uk/niea)).



## 5.1 BOUNDARY RATIONALE

The boundary of Slieve Beagh was drawn to include all areas of intact peatland and associated semi-natural habitats, including cutover bog, wet and dry heath, acid flushes, flushed, wet and dry grassland, particularly along the streams that run through the area. A small area of woodland along the Corby Spink River, to the south of the peatland has also been included within the SAC boundary. It should be noted that although much of the peatland within the SAC has been modified to varying degrees, the semi-natural peatlands remain in comparatively good condition. Acidic grassland and large areas of degraded peatland were generally excluded.

The boundary around the entire SAC is defined as the edge of the high quality semi-natural blanket bog vegetation and associated habitats. However, in an upland environment, there are sometimes no clearly defined boundaries distinguishing high quality blanket bog vegetation from degraded and semi-improved habitats. Instead there is a gradual transition from good quality blanket bog vegetation to degraded and highly impacted peatland communities on the lower slopes. Therefore it may be quite difficult to find an appropriate physical boundary to mark the periphery of the interest features. Separation between areas included within the SAC boundary and those more degraded areas that are excluded depends upon the judgement of the surveyor. This was based on a variety of factors, such as *Sphagnum* moss cover, bare peat, and grass: dwarf-shrub ratio, frequency of dung and poaching, burning and drainage.

Much of the boundary of Slieve Beagh is demarcated by the upper extent of coniferous forests that are prevalent around much of the periphery of this upland area. The border between Northern Ireland and Co. Monaghan also forms a substantial portion of the boundary. The remaining boundaries follow a series of ditches, streams and fences to include the quality blanket bog and exclude severely degraded peatland vegetation and semi-improved lands. Although many of the boundaries are stock-proof fences, there are also numerous boundaries that although clearly apparent on the ground are not completely stock proof.

## 6. SAC SELECTION FEATURES

Feature type	Feature	Global Status	Size/extent/ population
Habitat	Active blanket bog	B	1112 ha
Habitat	Natural dystrophic lakes and pools	B	2 > 4 ha lake, 2 > 1 ha, 5 < 1 ha total est. 15.3 ha
Habitat	European dry heaths	C	80 ha

Table 1. List of SAC selection features. Those with global status A-C will be referred to in ANNEX I.

The global status is an expert judgement of the overall value of the site for the conservation of the relevant Annex I habitat. Sites have been graded A, B or C - in the UK these gradings have been interpreted as follows:

**A** - Sites holding outstanding examples of the habitat in a European context.

**B** - Sites holding excellent stands of the habitat, significantly above the threshold for SSSI/ASSI notification but of somewhat lower value than grade A sites.

**C** - Examples of the habitat which are of at least national interest (i.e. usually above the threshold for SSSI/ASSI notification on terrestrial sites) but not significantly above this. These habitats are not the primary reason for SACs being selected.

**D** - Habitat present but not of sufficient extent or quality to merit listing as SAC feature.

There is therefore a distinction between the principal features for which sites have been selected (those graded A or B) and those which are only of secondary interest (those graded C). This is a useful distinction but it is important to note that all three grades are qualifying SAC interest features.

Click [here](#) to go to the Natura 2000 Standard Data Form for Slieve Beagh SAC.

## 6.1 ASSI SELECTION FEATURES

### Slieve Beagh ASSI

Feature Type	Feature	Size/ extent/ population
Habitat	Blanket Bog	1112 ha
Habitat	Dystrophic Lakes	15.3 ha
Habitat	Dry Heath	80 ha
Species	Invertebrate Assemblage	

Table 2. List of ASSI features.

## 7. CONSERVATION OBJECTIVES

The *Conservation Objective* for this site is:

*To maintain (or restore where appropriate) the*

- Active Blanket Bog
- Natural dystrophic lakes and pools
- European Dry Heaths

*to favourable condition.*

For each SAC feature, there are a number of component objectives which are outlined in the table below. These include a series of attributes, measures and targets which form the basis of *Condition Assessment*. The results of this will determine whether the feature is in favourable condition or not. The feature attributes and measures are found in the attached annex.

## 8. SAC SELECTION FEATURE OBJECTIVE REQUIREMENTS

Feature	Global Status	Component Objectives
Active blanket bog	B	Maintain the extent of intact blanket bog and actively regenerating blanket bog vegetation.
		Maintain and enhance the quality of the blanket bog community types including the presence of notable species.
		Seek to expand the extent of actively regenerating blanket bog vegetation into degraded (non-active) areas of cutover bog.
		Maintain the diversity and quality of other habitats associated with the blanket bog, especially where these exhibit natural transition to the blanket bog.
		Maintain the hydrology of the intact blanket bog peat mass.
		Seek nature conservation management over suitable areas immediately outside the SAC where there may be the potential for blanket bog rehabilitation.
Natural dystrophic lakes and pools	B	Maintain the open water area of ponds and lakes.
		Maintain the extent of pool complexes and the numbers of pools within.
		Maintain the lakes/ponds nutrients poor status and ensure it does not fluctuate outside normal limits.
		Characteristic aquatic vegetation to remain present.
		Minimal negative impacts from artificial structures.
		Minimal negative impacts from recreation.
		Identify the main areas of transition mires and quaking bog and describe and delineate them with more precision.

<b>European dry heaths</b>	<b>C</b>	Maintain the extent of existing European dry Heath vegetation.
		Maintain and enhance the quality of the European dry heath community types.
		Seek to expand the extent of the dry heath communities into degraded areas of species poor, dry acid grassland.
		Maintain the diversity and quality of other habitats of conservation interest, especially where these exhibit natural transition to the dry heath.
		Seek nature conservation management over suitable areas immediately outside the SAC where there may be the potential for dry heath rehabilitation.

## 9. ASSI FEATURE OBJECTIVE REQUIREMENTS

<b>Feature</b>	<b>Component Objective</b>
<b>Blanket Bog</b>	See SAC Selection Feature Objective Requirements table.
<b>Dystrophic Lakes</b>	See SAC Selection Feature Objective Requirements table.
<b>Dry Heath</b>	See SAC Selection Feature Objective Requirements table.
<b>Invertebrate Assemblage</b>	To be finalised.

## 10. MANAGEMENT CONSIDERATIONS

### Ownership

Slieve Beagh is a large site that is partly owned by Forest Service and partly in private ownership with more than 20 individuals owning various sections of the bog. An additional 65 or more individuals have turbarry rights to cut peat for fuel within some of the management units and a number of individuals also have grazing rights over parts of the bog. Although Forest Service own approximately 600 ha., both grazing and turbarry rights exist within their land ownership.

The current complexities of ownership, coupled with turbary, grazing and sporting rights makes a unified approach to site management more difficult.

Although the SAC is in multi-ownership, very little fencing had been carried out within the SAC boundary at the time of ASSI declaration. Therefore much of the land has been grazed in common. At the time of ASSI declaration in November 1994, there was evidence that grazing pressure by cattle was too high in places, particularly around the periphery with locally heavy poaching leading to degradation and erosion of the peatland surface.

### ***Adjoining Land Use***

The main adjoining land-use outside the SAC is afforestation and degraded blanket bog/wet grasslands that are more intensively grazed by cattle and in some instances sheep. There are also surrounding areas of severely degraded peatland complexes as a consequence of drainage and mechanised peat extraction.

## **11. MAIN THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE**

Both on-site and off-site activities can potentially affect SAC/ASSI features. The list below is not exhaustive, but deals with the most likely factors that are either affecting Slieve Beagh, or could affect it in the future. Although Active Blanket Bog, Naturally Dystrophic Lakes and Pools and European Dry Heaths are the qualifying SAC features, factors affecting ASSI features are also considered

**NOTE - Carrying out any of the Notifiable Operations listed in the ASSI schedule could affect the site.**

### ***Peat Cutting.***

There has been extensive peat cutting around the periphery of Slieve Beagh SAC in the recent past. Peat cutting by any method is a particularly damaging activity, including extrusion cutting which far from sparing surface vegetation, has very profound effects upon its ecology and hydrology. Just outside the SAC boundary to the north, there is an extensive area where peat has been extracted commercially. This operation has now been halted. Within the SAC, peat extraction has almost ceased although there are some localised areas where peat extraction by hand has been allowed to continue. There should be no peat cutting within the SAC.

**ACTION: No peat cutting within the SAC.**

### ***Burning***

Burning of the vegetation is evident in places right across the site, although whether this is an agricultural management practice or an incidental effect of turf cutting is often unknown. Excessive burning will tend to reduce the cover of *Sphagnum* mosses and ericaceous species, increasing the proportion of *Molinia*

*caerulea* and *Trichophorum cespitosum*. In addition, structural diversity will be reduced. Blanket bog should not be burnt. Dry heath may be burnt, but no more than once every 12-20 years, and not at all in areas where the gradient is > 25° as this may result in erosion. Investigate the burning practice currently being carried out if possible and impress upon all landowners that burning the vegetation should not be carried out without prior authorisation from the Department. Burning of peatland should only be carried out under controlled conditions.

**ACTION : No burning within the SAC**

### ***Drainage***

There are a series of drains associated with many of the peat cuttings around the periphery of the SAC and many continue to carry water off the peat mass at an accelerated rate. All of these drains show up on the aerial photograph and are clearly apparent on the ground. Any major drains that are currently carrying water away from the peat mass should be identified and blocked. Note that drainage works outside of the site's boundaries could potentially impact upon the bog's hydrology.

**ACTION: Block active drains where appropriate.**

### ***Grazing***

The pattern and intensity of grazing, appears to be quite variable over much of the area. A large proportion of the blanket bog and heath communities retains a good cover of dwarf-shrub species and appears to be stocked at a reasonable level. Other areas however, particularly blanket bog communities, have suffered severe damage from poaching and overgrazing by cattle. Ideally, cattle should not be permitted on blanket bog because of the trampling damage caused. Shepherding is possibly one of the problems in the area. Because of the large extent of individual management units, the cattle tend to congregate and stay in a particular area. This causes localised overgrazing while much of the remaining blanket bog vegetation within the unit remains largely ungrazed.

**ACTION: Where they are present, fences around the periphery of the SAC should be maintained to prevent cattle from outside the area straying into the SAC. Current management units should be identified and grazing levels should be established. If possible, cattle grazing on the blanket bog should be stopped. However, this may not be achievable in the short term. Where it occurs, overgrazing and poaching should be addressed by setting more appropriate grazing levels, excluding all grazing in the winter months between November and February inclusive and active shepherding of stock onto the drier heathland communities.**

### ***Supplementary stock feeding***

Supplementary feeding causes localised overgrazing and poaching damage.

**ACTION: Supplementary feeding should be avoided. If this not an option, it should be confined to less sensitive areas, whilst avoiding areas such as denuded slopes and pockets of deeper level peat which are vulnerable to wind**

and gully erosion.

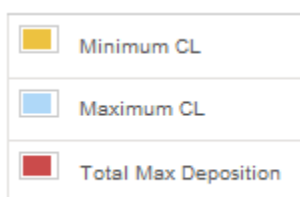
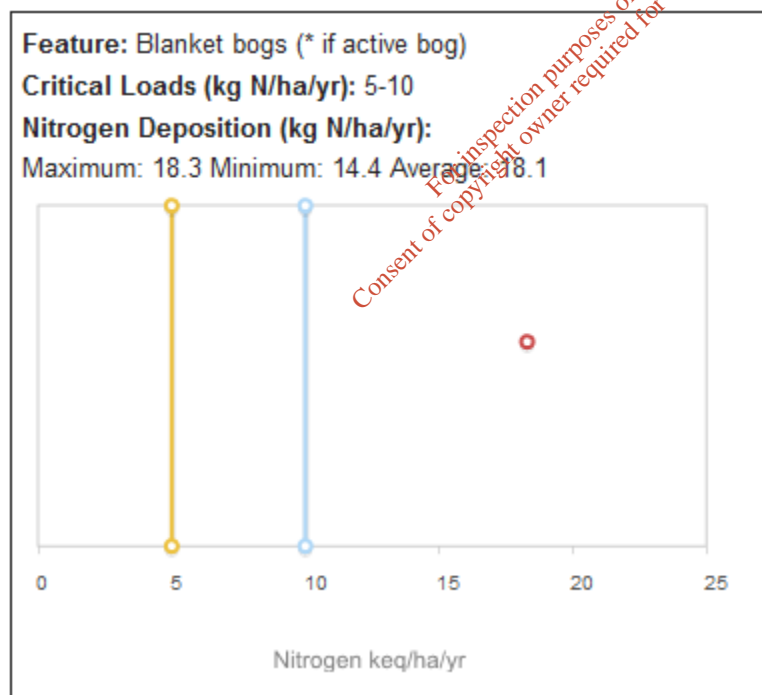
### **Afforestation**

Preparation for afforestation involves disturbing the surface by draining, ploughing, or mounding. Establishment of the trees involves fertilisation, pest control and often liming. A successfully established plantation will shade the peat surface and intercept airborne pollutants. Peatland that has been subject to these operations has little potential to recover after harvesting. Forests surround Slieve Beagh SAC to the north, south and west.

**ACTION: Ensure there is no further afforestation of peatland within or on the periphery of the site. Liaise with the Forest Service to ensure their operations such as, drainage, wind blown fertiliser and lime etc, does not adversely affect the peatlands conservation interest.**

### **Nitrogen Deposition**

Excess nitrogen deposition can favour the growth of competitive plants and lead to changes in ecosystem structure or function and to a reduction in biodiversity. National scale studies show the potential adverse effects of excess nitrogen on natural and semi-natural habitats to be widespread across the UK. Lower and upper critical loads have been calculated for Slieve Beagh SAC.



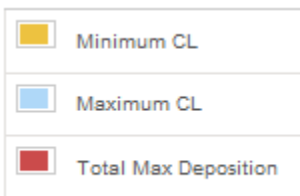
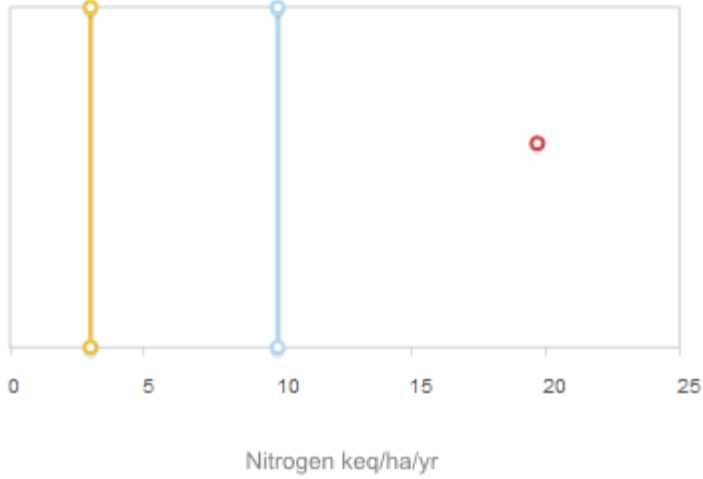


**Feature:** Natural dystrophic lakes and ponds

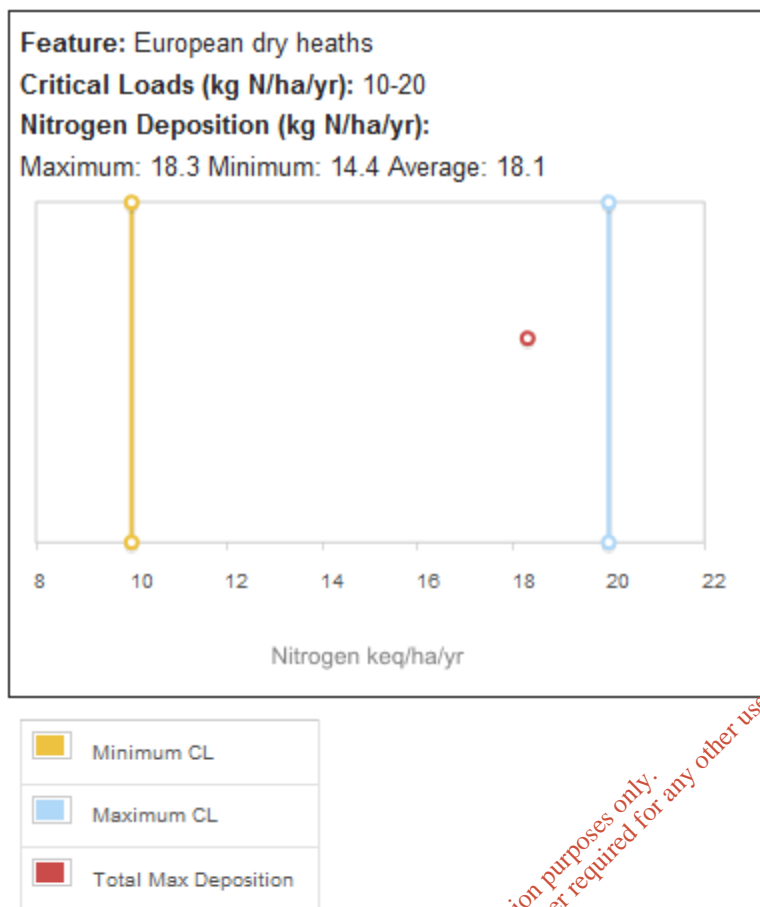
**Critical Loads (kg N/ha/yr):** 3-10

**Nitrogen Deposition (kg N/ha/yr):**

Maximum: 19.7 Minimum: 15.8 Average: 19.1



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(Source: Air Pollution Information System (APIS) website- [www.apis.ac.uk](http://www.apis.ac.uk))

**ACTION: Seek to maintain or where necessary, restore concentrations and deposition of air pollutants to at or below the site-relevant critical load.**

#### ***Damaging recreational activities***

Recreational activities such as the use of four-wheel drive vehicles can cause localised vegetation loss, that can cause significant erosion, particularly on vulnerable sloping areas.

**ACTION: Ensure the restriction of damaging recreational activities such as the use of four-wheeled drive vehicles.**

#### ***Fly-tipping***

There are some very localised incidences of fly-tipping around the periphery of the site, situated in areas of past peat cutting.

**ACTION: Remove all evidence of past fly-tipping and if localised dumping does reoccur, it should be removed as soon as possible to help prevent any further incidences.**

#### ***Dumping/spreading of Alum sludge***

The dumping of aluminium-based flocculent sludge (gibbsite) from Northern Ireland Water reservoir operations takes place annually onto Forest Service lands.

The waste does not contain plant nutrients in a significant quantity, but the habitat loss or stress at the spreading area is compounded by sludge accumulation in aquatic systems and the introduction of labile aluminium into the aquatic environment especially at low pH when the concentrations can reach toxic levels.

**ACTION:** The long-term objective will be to halt the spreading of sludge onto peatland communities adjacent to tracks within Forest Service ownership. Negotiations with Northern Ireland Water should be initiated to try to decide on a suitable alternative.

### *Changes to surrounding land use*

Any changes in local land-use e.g. drainage, road improvements, afforestation, agricultural intensification and development, may be detrimental to the SAC.

**Action:** Reduce the risk of surrounding agricultural intensification by encouraging the adjacent owner/occupiers to enter into agri-environment schemes. Use Habitats Regulations Assessments (HRAs), through the planning process, to minimise any development risks adjacent to the SAC.

### *Climate Change*

Northern Ireland faces changes to its climate over the next century. Indications are that we will face hotter, drier summers, warmer winters and more frequent extreme weather events.

**ACTION:** When developing SAC management plans, the likely future impacts of climate change should be considered and appropriate changes made.

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## 12. MONITORING

Monitoring of SACs takes place on using two monitoring techniques.

**Site Integrity Monitoring (SIM)** is carried out to ensure compliance with the ASSI/ SAC Schedule. The most likely processes of change will either be picked up by SIM (e.g. dumping, burning, turf cutting, grazing etc.) or will be comparatively slow (e.g. gradual degradation of the bog and associated habitats through desiccation).

These longer-term changes will be picked up by monitoring of the feature via **Site Condition Assessment** - this is carried out on a rolling basis to pick up subtle changes in the condition of the feature.

The method for Site Condition Assessment was agreed by the relevant JNCC-led Lead Co-ordination Network although the methodology has been modified to reflect individual site attributes in Northern Ireland.

### 12.1 MONITORING SUMMARY

#### 1. *Monitor the integrity of the site (SIM or Compliance Monitoring)*

Complete boundary survey to ensure the fencing is still intact. Ensure there has been no moor gripping or other drainage activities, signs of excessive erosion, evidence of inappropriate grazing or burning, or unauthorised peat cutting, carried out within the SAC boundary. This SIM should be carried out once a year.

#### 2. *Monitor the condition of the site (Condition Assessment)*

Monitor the key attributes for each of the SAC selection features. This will detect if the features are in favourable condition or not. See Annex I.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any Habitats Regulations Assessment (HRA) that may be needed. It should be noted that completion of a HRA is a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

### 13. REFERENCES

Cooper, A., McCann, T. and Rogers, D. (2009). Northern Ireland Countryside Survey 2007: Broad Habitat Change 1998-2007. Northern Ireland Environment Agency Research and Development Series No.09/06

Cruickshank, M. M. & Tomlinson, R. W. (1988). *Northern Ireland Peatland Survey*. Department of the Environment for Northern Ireland (Countryside and Wildlife Branch). Belfast.

Department of the Environment for Northern Ireland (1993a). *Conserving Peatland in Northern Ireland – A Statement of Policy*.

Department of the Environment for Northern Ireland (2003). *Northern Ireland Habitat Action Plan - Blanket Bog*.

Department of the Environment for Northern Ireland (2003). *Northern Ireland Habitat Action Plan – Lowland Heath*

Department of the Environment for Northern Ireland (2003). *Northern Ireland Habitat Action Plan – Upland Heath*

European Commission (2000). *Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*.

European Commission (2001). *Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*.

European Commission (2014). *Establishing conservation measures for Natura 2000 Sites*.

Joint Nature Conservation Committee (JNCC) (2013). *3<sup>rd</sup> UK Habitats Directive Report*.

## ANNEX 1

### Feature 1 (SAC) – Active blanket bog (Status B)

(\* = primary attribute. One failure among primary attribute = unfavourable condition)

Attributes	Targets	Method of Assessment	Comments
* Area of blanket bog and upland raised mire (ha)	Maintain the extent of the intact bog surface at 1112 ha.  The blanket bog communities include M17 – <i>Scirpus cespitosus Eriophorum vaginatum</i> blanket mire, M18 – <i>Sphagnum papillosum</i> raised and blanket mire and M19 <i>Calluna vulgaris - Eriophorum vaginatum</i> blanket mire.	Visual estimate in 2x2 m plots <u>and</u> across the blanket bog using a combination of aerial photographs, SIM and Condition Assessment structured walk.	The blanket bog communities include M17 – <i>Scirpus cespitosus Eriophorum vaginatum</i> blanket mire, M18 – <i>Sphagnum papillosum</i> raised and blanket mire and M19 <i>Calluna vulgaris - Eriophorum vaginatum</i> blanket mire.
* Area of mosaic communities and associated habitats	Maintain associated mosaic communities and habitats (wet heath, dry heath, upland fen, etc)	Visual estimate across the SAC using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Repeat monitoring using condition assessment, SIM, and aerial photographs should indicate whether mosaics and associated habitats have changed or been lost.
* Pool/hummock system extent and complexity	The extent and complexity of pool and hummock systems at least maintained.	The extent of pool and hummock systems should be	The extent of pool and hummock systems should be monitored using a combination of aerial photographs and Condition Assessment.

	Differentiation of <i>Sphagnum</i> species should be recorded with <i>S. cuspidatum</i> or <i>S. auriculatum</i> in the pools and <i>S. papillosum</i> and <i>S. capillifolium</i> forming the lawns and hummocks.	monitored using a combination of aerial photographs and SIM.	
Dwarf-shrub Height (cm)	Average ericoid height should be 15-30cm.	Visual estimate in 2x2 m plots.	On some areas of blanket bog, the dwarf-shrub height will largely reflect recent management patterns. However, on largely undisturbed sites with minimal or no grazing, dwarf shrubs should display no apparent growth forms with a fairly uniform height between 15-30cm.
* Bare Peat, or ground covered by algal mats (%)	Bare peat etc should occupy less than 2% of the intact blanket bog surface overall.	Visual estimate in 2x2 m plots.	Bare peat, or bare ground carpeted by <i>Polytrichum</i> spp., <i>Campylopus</i> spp. crust forming lichens or algal mats can occur as a consequence of peat cutting or excessive burning and/or grazing. Bare ground here represents bare peat etc. within the blanket bog vegetation rather than naturally eroded surfaces where bare ground forms a natural part of the erosion feature.
* <i>Sphagnum</i> cover/abundance (% cover and frequency)  Active Peat Formation (DAFOR)	<i>Sphagnum</i> moss species should have a minimum cover of 25% over at least 66% of the intact blanket bog surface.  Thick, hummock forming species of sphagnum should	Visual estimate in 2x2 m plots.	A constant <i>Sphagnum</i> moss cover is indicative of active peat formation and is dependent on the maintenance of a high water table. <i>Sphagnum</i> moss is therefore used to measure the hydrological integrity of the blanket bog surface.

	<p>be at least occasional.</p> <p>Species present should include a mixture of both thin species: - <i>S. capillifolium</i> and <i>S. tenellum</i> and the thick hummock forming species: - <i>S. papillosum</i> and <i>S. magellanicum</i> at least occasional over the surface.</p>		
* Ericaceous Cover (%)	<p>Ericoid cover frequent over the surface of the intact blanket bog. Dwarf-shrub cover greater than 33%. Less than 33% is only acceptable in wetter areas where <i>Narthecium ossifragum</i> or <i>Sphagnum</i> spp. are abundant and forming lawns.</p>	<p>Visual estimate in 2x2 m plots.</p>	<p>Ericoid (dwarf-shrub species) include <i>Calluna vulgaris</i>, <i>Erica tetralix</i>, <i>E. cinerea</i>, <i>Myrica gale</i>, <i>Vaccinium myrtillis</i> and <i>Empetrum nigrum</i>.</p>
* Ericoid diversity (DAFOR)	<p>At least two species of dwarf-shrub should be widespread and frequent. Where three or more species are present, but only one frequent and widespread, the abundance of the less abundant species may be combined and treated as if they are a single species.</p>	<p>Visual estimate in 2x2 m plots.</p>	<p>A mono-dominant sward of <i>Calluna vulgaris</i> may suggest that the surface of the intact bog is drying out – i.e. the water table is too low beneath the surface of the bog.</p>



* Scrub/tree encroachment on any active peat surface (DAFOR)	Scrub/tree encroachment should be no more than rare on the intact bog surface, or in the actively regenerating cutover areas.	Visual estimate in 2x2 m plots.	Scrub encroachment should be checked using a combination of aerial photographs and Condition Assessment. Invasive exotic species such as <i>Rhododendron ponticum</i> should be removed immediately.
* Erosion Features associated with human impacts (% and DAFOR)	No gully erosion or bare peat associated with more concentrated human impacts (eg drainage, peat extraction, ATV tracks or recreational activities). Man induced/enhanced erosion should occupy less than 2% of the total area of blanket bog other than very localised instances.	Visual estimate in 2x2 m plots.	The extent of man induced erosion should be monitored using a combination of aerial photographs and Condition Assessment. Erosion is a natural feature of blanket bog, particularly marginal fretting on breaks of slope. However, where natural erosion is exacerbated by human activity, the bog will not be in favourable condition, except where such erosion is very limited in nature.
* Graminoid Cover (%)	Total cover of graminoids should not exceed 50%, unless dominated by <i>Molinia caerulea</i> forming even swards over waterlogged areas with <i>Sphagnum</i> moss cover greater than 25%.	Visual estimate in 2x2 m plots.	Include true grasses, sedges, and rushes in this assessment. <i>Eriophorum vaginatum</i> , <i>Trichophorum cespitosum</i> , <i>Deschampsia flexuosa</i> , <i>Juncus squarrosus</i> or other graminoids (except <i>Molinia</i> in some instances) should not dominate over other species.
* Management – Peat extraction	No evidence of unconsented active peat extraction.	Visual estimate in 2x2 m plots.	In some instances areas of cut peat can re-vegetate with good blanket bog vegetation which meets the attributes for favourable condition.
* Management - Grazing (%)	Signs of moderate or heavy grazing by cattle or sheep	Visual estimate in 2x2 m plots.	The frequency of droppings, the extent of poaching and the presence of grazing induced <i>Calluna vulgaris</i>

	should occupy less than 5% of the blanket bog vegetation within any grazing unit.		growth forms indicate moderate and heavy grazing where any one of the above is recorded as more than occasional.
<i>Molinia caerulea</i> Cover (%)	Where <i>Molinia caerulea</i> cover is greater than 50%, it should form an even (not tussocky) sward in waterlogged conditions with <i>Sphagnum</i> moss cover greater than 25%.	Visual estimate in 2x2 m plots.	<i>Molinia caerulea</i> only occurs as a natural component of the bog vegetation in the extreme west of Northern Ireland where the climate is generally warmer and wetter i.e. more oceanic.
Presence of rare or scarce species specific to the site.	<i>Sphagnum imbricatum</i> and <i>Sphagnum fuscum</i> , where they have been recorded, should remain at least present along the length of each of the w-walks.  If these species are not recorded on any one visit, it does not automatically make the SAC unfavourable.	Visual estimate in 2x2 m plots.	

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**Frequency -**

**1-20% = Rare**

**21-40% = Occasional**

**41- 60% = Frequent**

**> 60% = Constant**

**Feature 2 (SAC) – Natural dystrophic lakes and pools (Status B)**

(\* = primary attribute. One failure among primary attribute = unfavourable condition)

Attributes	Measure	Target	Comment
<b>Extent</b>	Assessment against baseline map. Aerial photographs may be used.	No loss of extent of standing water	This attribute is to assess changes caused by active management, such as infilling or channel diversion. Changes due to drying out or successional change are covered under other attributes.
<b>*Composition of macrophyte community</b>	Characteristic species composition	i). No loss of characteristic species present at the site (see Box 5)	<p>In the UK dystrophic lakes are widespread in the north west and scarce in the south. These systems most often occur on blanket bog and may include isolated seasonal pools, random collections of irregularly shaped waters and ordered linear or concentric arrays of pools and small lochs. Dystrophic pools may also be found on raised bogs situated mainly on plains and valley bottoms.</p> <p>The water usually has a high humic acid content and is usually stained brown through exposure to peat. Some dystrophic lakes are completely devoid of all macrophytes, while others may be completely dominated by bryophytes. This does not necessarily indicate unfavourable condition. With increasing diversity the characteristic species are usually <i>Drepanocladus fluitans</i> and/or <i>Juncus bulbosus</i> as submerged macrophytes, with <i>Sphagnum</i> communities present around the edge or in the littoral zone. <i>Menyanthes trifoliata</i>, <i>Potamogeton polygonifolius</i> and <i>Nymphaea alba</i> may also be present and at richer sites, <i>Utricularia minor</i> and <i>Nuphar lutea</i>.</p>

Attributes	Measure	Target	Comment
			<p>There may be valid reasons why a characteristic species is not present at a site (such as biogeographic range or isolation from source populations) which need to be considered when applying targets to an individual site.</p> <p>As this interest feature covers a floristic range it is essential to establish which community type represents the feature for the site in question.</p> <p>If algal growth is excessive, check for inputs of point or diffuse sources of pollution. If mire communities surround the site, the mire vegetation will turn green in the presence of fertilisers. Increased growth of <i>Sphagnum</i> may indicate the occurrence of artificial acidification. Turbid water conditions can also give blue-green algae a competitive advantage in the phytoplankton, where artificial nutrient enrichment is taking place. <i>Juncus bulbosus</i> var. <i>fluitans</i> can naturally grow as the dominant plant i.e. &gt; 40% cover in depths up to 1.75 m, and is not necessarily an indicator of a site in unfavourable condition.</p>
	Negative indicator species	Non-native species should be absent or present at low frequency	<p>Introduced species should be identified. A number of non-natives have such invasive potential that they should be assessed separately. Species of particular concern are: <i>Crassula helmsii</i>, <i>Hydrocotyle ranunculoides</i>, <i>Myriophyllum aquaticum</i> and <i>Azolla filliculoides</i>. If any of these species are present, a water body should be considered as being in unfavourable condition. This list is not exhaustive and should be updated as new threats become apparent.</p> <p>Colonisation since the previous field visit by <i>Elodea nuttallii</i> or</p>

Attributes	Measure	Target	Comment
			<p><i>Elodea canadensis</i> at &gt;5% frequency is indicative of unfavourable condition, as is dominance of naturalised non-native species, such as <i>E. canadensis</i>. Occurrence of such species, at &gt;40% frequency in unproductive waters, is indicative of unfavourable condition.</p> <p>Excessive growths of filamentous algae on lake substrate or macrophytes are indicative of nutrient enrichment. Increased filamentous green algae may also indicate the occurrence of artificial acidification.</p>
<b>*Macrophyte community structure</b>	<p>Distribution</p> <p>Extent</p> <p>Structure</p>	<p>Characteristic zones of vegetation should be present.</p> <p>Maximum depth distribution should be maintained.</p> <p>Maintain at least the present structure.</p>	<p>Zonation, depth distribution and structure will be site specific. Colonisation at depth may be limited by poor light penetration or unsuitable sediment type.</p> <p>Where present, well defined hydrosere should be maintained.</p>
<b>*Water quality</b>	Water Chemistry	<p>Maintain dystrophic conditions</p> <p>The pH/ANC, and nutrient levels (P and N) should be stable and appropriate to the lake</p>	<p>As a guide</p> <p>Stable nutrient levels: TP target/limit: Dystrophic = 10 µg L<sup>-1</sup></p> <p>Stable pH values: pH &lt; 5.0</p> <p>Adequate dissolved O<sub>2</sub> (&gt;5 µg L<sup>-1</sup>)</p> <p>Water should be acid and poor in available nutrients. It should be</p>

Attributes	Measure	Target	Comment
		<p>type</p> <p>Adequate dissolved oxygen levels for health of characteristic fauna.</p> <p>No excessive growth of cyanobacteria or green algae.</p>	<p>stained by dissolved humic material, and will usually be visibly brown.</p> <p>As there is a wide clinal range of community types embraced by this feature, the acceptable range of chemical conditions (especially total P, other P fractions, pH/ANC, and where appropriate NO<sub>3</sub>-N,) should be set for individual SAC lakes, from recent or historical water chemistry data. Acceptable ranges of values for each variable should be established.</p> <p>Mean annual TP concentrations (based on at least quarterly measurements), or spring TP levels, should meet the targets appropriate for the lake type documented in the guidance, unless site-specific targets are available.</p> <p>If palaeolimnological techniques or hindcast modelling have been employed to reconstruct natural background TP concentrations for a particular lake these can be used to set targets, although it may be necessary to accept a small deviation from these background conditions. Alternatively, historical water chemistry data may exist for individual lakes. Where existing, site-specific TP concentrations are consistently lower than the standard appropriate for the habitat type, a lower target should be applied to prevent deterioration from current status.</p> <p>Phosphorus and nitrogen values can be very variable, P is often in excess and plant development is limited by unavailability of N in</p>

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Attributes	Measure	Target	Comment
			<p>the peat.</p> <p>Check for changes in catchment land-use in catchment causing diffuse pollution and/or siltation and check point sources of pollution. Aerially applied agro-chemicals have a high potential to change plant communities, and move them out of favourable condition.</p> <p>Other methodologies involving trophic scoring can contribute to the assessment of favourable condition.</p> <p>As a guide, pH &lt; 5.00. Note that where water column pH is 4.5 or less, alkalinity will be 0.</p> <p>Levels of dissolved oxygen should support the invertebrate and vertebrate taxa associated with this lake type.</p> <p>There should be no evidence of excessive blue-green or green algal blooms.</p>
<b>Hydrology</b>	Hydrological regime	No deterioration in hydrological regime compared to the baseline.	<p>Natural flushing rate and seasonal pattern of fluctuation need to be considered.</p> <p>Maintain flushing rate of system.</p> <p>Modifications of inflows and outlets (where present), the creation</p>

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Attributes	Measure	Target	Comment
			of outlets, or changes in hydrology from flood control regimes, abstraction, peat harvesting and gravel removal, can lead to unnatural changes in lake levels.
<b>Lake substrate character</b>	Shore line and substrate	Maintain the natural shoreline of the lake.  Maintain natural and characteristic substrate for lake type.	Sediment quality and quantity when enriched can cause excessive growths of <i>Juncus bulbosus</i> var. <i>fluitans</i> or growths of algae.
<b>Sediment</b>	Sediment Load	Maintain natural sediment load	Increases in siltation could result from increased lake productivity, changes in catchment land-use (particularly over-grazing, peat harvesting), lake level fluctuations, climatic fluctuations or changes in sewage treatment.
<b>Indicators of local distinctiveness</b>	Maintain distinctive elements (e.g. rare plant or invertebrate species, habitat features) at current extent/levels and/or in current locations.		<p>This attribute is intended to cover any site-specific aspects of this habitat feature (forming part of the reason for notification) which are not covered adequately by the previous attributes, or by separate guidance (e.g. for notified species features).</p> <p>For species of local distinctiveness, which are documented on citations, or for which records are held for individual lakes, references such as LACON (Palmer, in prep.) should be consulted for current lists of species rare in the constituent countries of GB, and in EA and SEPA areas.</p> <p>For “notable” species (e.g. nationally scarce plants), it is not intended that a target is set for detailed species monitoring. It is intended that a rapid indication of presence/absence and /or</p>

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Attributes	Measure	Target	Comment
			approximate extent should be provided. Allowing for natural fluctuations in population size. The same approach applies to “notable” habitats.

**Aspects of environmental disturbance to be noted as an accompaniment to assessing condition: Natural dystrophic lakes and ponds**

Objective	Specified assessment method (if appropriate)	Comment
<p>No introduction of non-native plants</p> <p>Minimal negative impact from artificial structures</p> <p>No peat cutting within the vicinity of the water body</p> <p>Direct application of lime to the water column as an acidification amelioration strategy should not be carried out</p>		<p>Artificial structures could include dams. Catchment area changes affecting the lake, such as land drainage and infrastructure schemes, should be considered.</p> <p>Efforts should be directed towards reducing atmospheric emissions and implementing catchment management strategies, especially in relation to coniferous forestry</p>

**Box 5. Characteristic species of natural dystrophic lakes and ponds**

<b>Characteristic species</b>	<b>Associates</b>
<i>Utricularia spp.</i>	<i>Sparganium angustifolium</i>
<i>Sphagnum spp.</i>	<i>Eleogiton fluitans</i>
<i>Juncus bulbosus</i>	<i>Drepanocladus spp.</i>
<i>Nymphaea alba</i>	
<i>Menyanthes trifoliata</i>	
<i>Potamogeton polygonifolius</i>	

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## ANNEX 1

### Feature 3 (SAC) – European dry heaths (Status C)

(\* = Primary attribute. One failure among primary attribute = unfavourable condition)

Attributes	Targets	Method of Assessment	Comments
* Area of dry heath	Maintain the extent of dry heath at 80 ha. The dry heath communities include H10 - <i>Calluna vulgaris-Erica cinerea</i> and H12 - <i>Calluna vulgaris-Vaccinium myrtillus</i> heath. The extent and distribution of each community to be maintained.	Visual estimate in 2x2 m plots <u>and</u> across the dry heath using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Note that it may be possible to extend dry heath communities, provided this is into degraded areas and does not encroach into other habitats of scientific interest.
* Heath community diversity	Maintain the presence of the dry heath communities H7, H8, H10 etc. as established at base line survey.	Visual estimate in 2x2 m plots.	Repeat monitoring of plots using GPS should indicate whether dry heath communities have changed or been lost.
* Area of mosaic communities and associated semi-natural habitats	Maintain associated mosaic communities and semi-natural habitats.	Visual estimate in 2x2 m plots <u>and</u> across the ASSI using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Repeat monitoring of plots using GPS should indicate whether mosaics and associated habitats have changed or been lost.

Dwarf-shrub height	Average ericoid height should be 15–35cm with at least 25% of the dry heath in the late mature/degenerate growth phase (greater than 35cm).	Visual estimate in 2x2 m plots.	On some areas of dry heath (especially on gentle slopes), the ericoid age structure will largely reflect recent burning patterns. However, in dry heath, burning should only be carried out occasionally under carefully controlled and monitored circumstances. A varied heather age structure is reflected in the height of heather.
* Bare peat, or ground covered by algal mats (% cover)	Bare peat etc. should occupy less than 2% of the dry heath surface overall.	Visual estimate in 2x2 m plots.	Bare peat (NOT exposed rock) or peat carpeted by <i>Polytrichum</i> spp., <i>Campylopus</i> spp. crust forming lichens or algal mats can occur as a consequence of constant burning and/or grazing. Bare peat here represents bare peat etc. within the dry vegetation rather than naturally eroded surfaces where exposed rock can form a natural part of the dry heath community.
* Ericaceous cover (% cover)	Dwarf-shrub cover should be greater than 75% over at least 75% of the dry heath community; and Mean dwarf-shrub cover should be greater than 75%	Visual estimate in 2x2 m plots.	
* Ericoid diversity	At least two species of dwarf-shrub at least present in 90% of plots.	Visual estimate in 2x2 m plots.	Ericoid (dwarf-shrub species) include <i>Calluna vulgaris</i> , <i>E. cinerea</i> , <i>Vaccinium myrtillus</i> , <i>Erica tetralix</i> , <i>Ulex gallii</i> , <i>Empetrum nigrum</i> and <i>Myrica gale</i> .
* Cover of <i>Ulex gallii</i> (% cover)	<i>Ulex gallii</i> cover should be less than 50% in plots within H8 stands.	Visual estimate in 2x2 m plots.	Mean percentage cover should be assessed for stands of H8 only – i.e. exclude plots in other heath communities from the calculations. Stands of H8 are generally restricted to the south-east of Northern Ireland.

<p>* Cover of graminoids (% cover)</p>	<p>Total graminoid cover should be less than 33%.</p>	<p>Visual estimate in 2x2 m plots.</p>	<p>Include true grasses, sedges, and rushes in this assessment. <i>Nardus stricta</i>, <i>Deschampsia flexuosa</i>, <i>Juncus squarrosus</i> or other graminoids should not dominate over other species.</p>
<p>* Frequency and % cover of bryophytes and bushy lichens (esp <i>Cladonia</i> spp.) (DAFOR and % cover)</p>	<p>Bryophytes (excluding <i>Polytrichum</i> spp. and <i>Campylopus</i> spp. on bare ground) and/or <i>Cladonia</i> species should be at least frequent.</p> <p>At least frequent is equivalent to greater than 41% occurrence in recorded plots.</p> <p>Combined mean cover should be greater than 5%.</p>	<p>Visual estimate in 2x2 m plots.</p>	<p>Generally only bryophytes (mosses and liverworts) figure in this assessment, but occasionally bushy lichens can also be a prominent feature of the dry heath vegetation.</p>
<p>* Frequency and % cover of scrub/tree encroachment on dry heath communities (DAFOR and % cover)</p>	<p>Scrub/tree encroachment should be no more than occasional over the dry heath community.</p> <p>No more than occasional is equivalent to less than 40% occurrence in recoded plots.</p> <p>Mean cover should be less than 5%.</p>	<p>Visual estimate within a 10 m radius of plots <u>and</u> across the feature using a combination of aerial photographs and Condition Assessment structured walk.</p>	<p>Scrub encroachment should be checked using a combination of aerial photographs and Condition Assessment. Include invasive alien species in addition to <i>Betula pubescens</i>, <i>Prunus spinosa</i>, <i>Rubus</i> spp. Invasive exotic species such as <i>Rhododendron ponticum</i> should be removed immediately. Exclude <i>Ulex europaeus</i> (see below)</p>

<p>* Cover of Gorse <i>Ulex europaeus</i> (% cover)</p>	<p>Gorse (<i>Ulex europaeus</i>) cover should be less than 5%.</p> <p>During repeat surveys, Gorse cover should not exceed that of the baseline survey.</p>	<p>Visual estimate in 2x2 m plots <u>and</u> across the feature using a combination of aerial photographs and Condition Assessment structured walk.</p>	<p>Although a natural component of heath communities, Gorse can become invasive under both low and high grazing pressures.</p> <p>It is important to assess whether the relative quantities present in the site are increasing.</p>
<p>* Cover of Bracken (<i>Pteridium aquilinum</i>) encroachment (% cover)</p>	<p>Bracken cover less than 10% in dense canopy.</p> <p>During repeat surveys, Bracken cover should not exceed that of the baseline survey.</p>	<p>Visual estimate in 2x2 m plots <u>and</u> across the feature using a combination of aerial photographs and Condition Assessment structured walk.</p>	<p>Although a natural component of heath communities, Bracken can become invasive under both low and high grazing pressures.</p> <p>It is important to assess whether the relative quantities present in the site are increasing.</p>
<p>* Frequency and cover of undesirable agricultural grasses and weeds (DAFOR and % cover)</p>	<p>None of the following should be more than rare:  <i>Cirsium arvense</i>, <i>C. vulgare</i>,  <i>Senecio jacobaea</i>, <i>Urtica dioica</i>, <i>Plantago major</i>,  <i>Phleum pratense</i>, <i>Trifolium repens</i>, <i>Holcus lanatus</i> and <i>Lolium perenne</i></p> <p>No more than rare is equivalent to less than 20% occurrence in recorded plots.</p> <p>Combined mean cover of agricultural grasses and</p>	<p>Visual estimate in 2x2 m plot.</p>	

	weeds less than 1%.		
* Management - Grazing (% cover)	<p>Signs of moderate or heavy grazing should occupy less than 5% of the dry heath vegetation.</p> <p>The frequency of droppings, the extent of poaching, uprooting of dwarf shrubs and invasion by <i>Juncus squarrosus</i> etc. indicate moderate and heavy grazing where any one of the above is recorded as more than occasional.</p>	Visual estimate in 2x2 m plots.	
* Management - Burning (% cover)	<p>Signs of recent burning should occupy less than 5% of the dry heath vegetation.</p> <p>Recent burning is represented by areas burnt within the last two years.</p>	Visual estimate in 2x2 m plots and across feature using a combination of aerial photographs, SIM and Condition Assessment structured walk.	
Frequency and cover of erosion features associated with human impacts. (DAFOR and % cover)	No gully erosion or bare rock associated with more concentrated human impacts (ATV tracks or recreational activities). Man induced/enhanced erosion should occupy less than 2%	Visual estimate in 2x2 m plots.	The extent of man induced erosion should be monitored using a combination of aerial photographs and Condition Assessment. Erosion is a natural feature of high mountain slopes. However, where natural erosion is exacerbated by human activity, mainly hill walking, the heath will not be in favourable condition, except where such erosion is very limited in nature.

	of the total area of dry heath other than very localised instances.		
Herb diversity	Herbs (excluding negative indicators) at least frequent.  At least frequent is equivalent to greater than 41% occurrence in recorded plots.	Visual estimate in 2x2 m plots.	

**Frequency -**

**1-20% = Rare**

**21-40% = Occasional**

**41- 60% = Frequent**

**> 60% = Constant**

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## Reasons for designation as a Special Area of Conservation

Area name: **Slieve Beagh**

Administrative area: **Fermanagh**  
**Tyrone**

Component ASSI: **Slieve Beagh**

This area has been designated as a Special Area of Conservation (SAC) because it contains habitat types and/or species which are rare or threatened within a European context. The ASSI citation describes the special interests for which the site was notified in the Northern Ireland context. The interests for which the site was selected as ASSI may differ from the interests selected in a European context.

The habitats and/or species for which this area has been designated as a SAC are listed below. The reasons for their selection are listed, together with a brief description of the habitats and species as they typically occur across the UK. This area contains the interests described although it may not contain all the typical features.

### European priority interest(s):

#### 1. Blanket bogs

- **for which this is considered to be one of the best areas in the United Kingdom.**

Blanket bog. This occurs in the wettest parts of the UK as a mantle of peat which often clothes extensive areas of the landscape. Blanket bogs are characteristically wet underfoot, and are usually dominated by carpets of bog-moss *Sphagnum* species, cotton-grasses and heathers. Active blanket bogs are those in which the peat is still able to accumulate because of the growth of the surface vegetation. In the far north and west of the UK, the surface often displays areas of dramatic patterning, consisting of variously-shaped bog pools sometimes separated by quaking peat ridges. The UK and Ireland hold the largest areas of blanket bog in Europe.

### European interest(s):

#### 2. European dry heaths

- **for which the area is considered to support a significant presence.**

Dry heaths. These are heaths found on free-draining generally acidic soils such as sands or gravels which are poor in nutrients and occur both in the lowlands and the uplands. They are dominated by dwarf-shrubs of the heather family, most commonly heather *Calluna vulgaris*. There are several types of heath which are distinguished by the plants they support, such as bell heather *Erica cinerea*, bilberry *Vaccinium myrtillus*, crowberry *Empetrum nigrum*, bearberry *Arctostaphylos uva-ursi* and western gorse *Ulex gallii*.

### 3. Natural dystrophic lakes and ponds

- **for which this is considered to be one of the best areas in the United Kingdom.**

Acid peat-stained lakes and ponds. Dystrophic lakes and ponds are highly acidic and characteristically stained brown from contact with surrounding peat. A limited range of plant and invertebrate species are able to tolerate these acid waters, and fish are usually absent. Such habitats are now extremely rare in southern parts of the UK but are a characteristic feature of Scottish peatlands.

#### **The Register of European Sites in Northern Ireland**

Register reference number:	UK0016622
Date of Registration	30 March 2007
Signed by: G R Seymour	
on behalf of the Department of the Environment	

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## APPENDIX 4

### SCAIL MODEL INPUTS & OUTPUTS

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## Source Detail Inputs

**Source Details**

Source ?  ✖

Source ?  Pig  Poultry  Cattle  User defined emissions

New or Existing Source ?

Source Name ?

Source Location ? Provides a link to GoogleMaps to check the location.  
  Landranger  x,y  
 ?

Source Type ?

Type ?

Details ?

Livestock Number ?

Housing Floor Area ?  m<sup>2</sup>

Naturally Vented

Building Height  m

Fan Location ?

No. of Fans (optional) ?

Fan Diameter ?  metres

Fan Flowrate ?  m<sup>3</sup>/s

Total emissions ?

Pollutant	Source Emissions	Running total of all emission sources	Units
NH <sub>3</sub> :	3077	3077	(kg)
PM <sub>10</sub> :	2987	2987	(kg)
Odour:	1427004000	1427004000	(kOu)

?

## Magheraveely Marl Loughs SAC – Modelled Output

Site Information											
Magheraveely Marl Loughs (SAC) <span>?</span>											
Region:	Republic of Ireland										
Site Name:	Magheraveely Marl Loughs										
Site Code: <span>?</span>	UK0016621										
Designation Status: <span>?</span>	SAC										
Distance from Installation (m): <span>?</span>	17592										
Receptor Type:	Habitat										
Grid Reference:	255039.5,332744.2										
Met Site: <span>?</span>	MULL										
Run Mode: <span>?</span>	Conservative										
PM <sub>10</sub> Percentile: <span>?</span>	Average										
Installation Information <span>?</span>											
No.	Name	No. of sources	No. of new sources	PM <sub>10</sub> (t/a)	NH <sub>3</sub> (t/a)	Odour (kOu/a)	Conc NH <sub>3</sub> (µg/m <sup>3</sup> )	Dep N (kg/ha/yr)	Dep Acid (kEq H <sup>+</sup> /ha/yr)	Conc PM <sub>10</sub> (µg/m <sup>3</sup> )	Conc Odour (Ou/m <sup>3</sup> )
1	Stephen Moffett	1	1	-	3.1	-	0.01	0.04	0.003	-	-
Total Depositions/Concentrations and Exceedances <span>?</span>											
Concentrations/Depositions and Critical Loads/Levels				NH <sub>3</sub> (µg/m <sup>3</sup> )	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H <sup>+</sup> /ha/yr)	PM <sub>10</sub> (µg/m <sup>3</sup> )	Odour (Ou/m <sup>3</sup> )			
Process Contribution (PC) at receptor edge				0.00774	0.04	0.003	-	-			
Background concentration at receptor edge <span>?</span>				1.66	19.24	2.68 (N:1.37 S:1.30)	-	-			
<b>Predicted Environmental Concentration/Deposition (PEC) <span>?</span></b>				1.67	19.28	2.68	-	-			
Environmental Assessment Level or Critical Load / Level <span>?</span>				Lower: 1 Upper: 3	No sensitive habitat or species at this site	No sensitive habitat or species at this site	-	-			
ALTERNATIVE CRITICAL LOAD INFO											
USE OWN THRESHOLDS?											
% of relevant standard PC <span>?</span>				Lower: 1% Upper: 0%	n/a	n/a	-	-			
% of relevant standard PEC <span>?</span>				Lower: 167% Upper: 56%	n/a	n/a	-	-			
<b>EXCEEDANCE <span>?</span></b>				Lower: 0.67 Upper: No exceedance	n/a	n/a	-	-			
Project Notes											
Stephen Moffett											

## Slieve Beagh SPA – Modelled Output

Site Information <span>Slieve Beagh SPA (SPA)</span>											
Region:	Republic of Ireland										
Site Name:	Slieve Beagh SPA										
Site Code:	004167										
Designation Status:	SPA										
Distance from Installation (m):	19169										
Receptor Type:	Habitat										
Grid Reference:	260654.4,341847.3										
Met Site:	MULL										
Run Mode:	Conservative										
PM <sub>10</sub> Percentile:	Average										
Installation Information											
No.	Name	No. of sources	No. of new sources	PM <sub>10</sub> (t/a)	NH <sub>3</sub> (t/a)	Odour (kOu/a)	Conc NH <sub>3</sub> (µg/m <sup>3</sup> )	Dep N (kg/ha/yr)	Dep Acid (kEq H <sup>+</sup> /ha/yr)	Conc PM <sub>10</sub> (µg/m <sup>3</sup> )	Conc Odour (Ou/m <sup>3</sup> )
1	Stephen Moffett	1	1	-	3.1	-	0.01	0.04	0.002	-	-
Total Depositions/Concentrations and Exceedances											
Concentrations/Depositions and Critical Loads/Levels		NH <sub>3</sub> (µg/m <sup>3</sup> )	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H <sup>+</sup> /ha/yr)	PM <sub>10</sub> (µg/m <sup>3</sup> )	Odour (Ou/m <sup>3</sup> )					
Process Contribution (PC) at receptor edge		0.00699	0.04	0.002	-	-					
Background concentration at receptor edge		1.79	18.39	2.57 (N:1.31 S:1.25)	-	-					
<b>Predicted Environmental Concentration/Deposition (PEC)</b>		1.8	18.43	2.57	-	-					
Environmental Assessment Level or Critical Load / Level		Lower: Upper:	No sensitive habitat or species at this site	No sensitive habitat or species at this site	-	-					
<input data-bbox="277 1276 493 1314" type="button" value="USE OWN THRESHOLDS?"/>											
% of relevant standard PC		Lower: 1% Upper: 0%	n/a	n/a	-	-					
% of relevant standard PEC		Lower: 180% Upper: 60%	n/a	n/a	-	-					
<b>EXCEEDANCE</b>		Lower: 0.80 Upper: No exceedance	n/a	n/a	-	-					
Project Notes											
Stephen Moffett											

## Slieve Beagh SAC – Modelled Output

Site Information <span>Slieve Beagh (SAC)</span>											
Region:	Republic of Ireland										
Site Name:	Slieve Beagh										
Site Code:	UK0016622										
Designation Status:	SAC										
Distance from Installation (m):	23680										
Receptor Type:	Habitat										
Grid Reference:	255197,343286.7										
Met Site:	MULL										
Run Mode:	Conservative										
PM <sub>10</sub> Percentile:	Average										
Installation Information											
No.	Name	No. of sources	No. of new sources	PM <sub>10</sub> (t/a)	NH <sub>3</sub> (t/a)	Odour (kOu/a)	Conc NH <sub>3</sub> (µg/m <sup>3</sup> )	Dep N (kg/ha/yr)	Dep Acid (kEq H+/ha/yr)	Conc PM <sub>10</sub> (µg/m <sup>3</sup> )	Conc Odour (Ou/m <sup>3</sup> )
1	Stephen Moffett	1	1	-	3.1	-	0.01	0.03	0.002	-	-
Total Depositions/Concentrations and Exceedances											
Concentrations/Depositions and Critical Loads/Levels		NH <sub>3</sub> (µg/m <sup>3</sup> )	N Dep. (kg N/ha/yr)	Acid Dep. (kEq H+/ha/yr)	PM <sub>10</sub> (µg/m <sup>3</sup> )	Odour (Ou/m <sup>3</sup> )					
Process Contribution (PC) at receptor edge		0.00539	0.03	0.002	-	-					
Background concentration at receptor edge		1.59	18.78	2.62 (N:1.34 S:1.28)	-	-					
<b>Predicted Environmental Concentration/Deposition (PEC)</b>		1.6	18.81	2.62	-	-					
Environmental Assessment Level or Critical Load / Level		Lower: Upper:	No sensitive habitat or species at this site	No sensitive habitat or species at this site	-	-					
<input data-bbox="272 1276 488 1310" type="button" value="USE OWN THRESHOLDS?"/>											
% of relevant standard PC		Lower: 1% Upper: 0%	n/a	n/a	-	-					
% of relevant standard PEC		Lower: 160% Upper: 53%	n/a	n/a	-	-					
<b>EXCEEDANCE</b>		Lower: 0.60 Upper: No exceedance	n/a	n/a	-	-					
Project Notes											
Stephen Moffett											



## APPENDIX 5

### MET EIREANN RAINFALL DATA (2019)

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**MONAGHAN (Castleshane)**

rain: Precipitation Amount (mm)

<b>Date</b>	<b>rain</b>
jan-2019	41.1
feb-2019	61.6
mar-2019	142.3
apr-2019	52.9
may-2019	48.9
jun-2019	110.7
jul-2019	72.3
aug-2019	127.1
sep-2019	127.3
oct-2019	79.2
nov-2019	95.2
dec-2019	101.1

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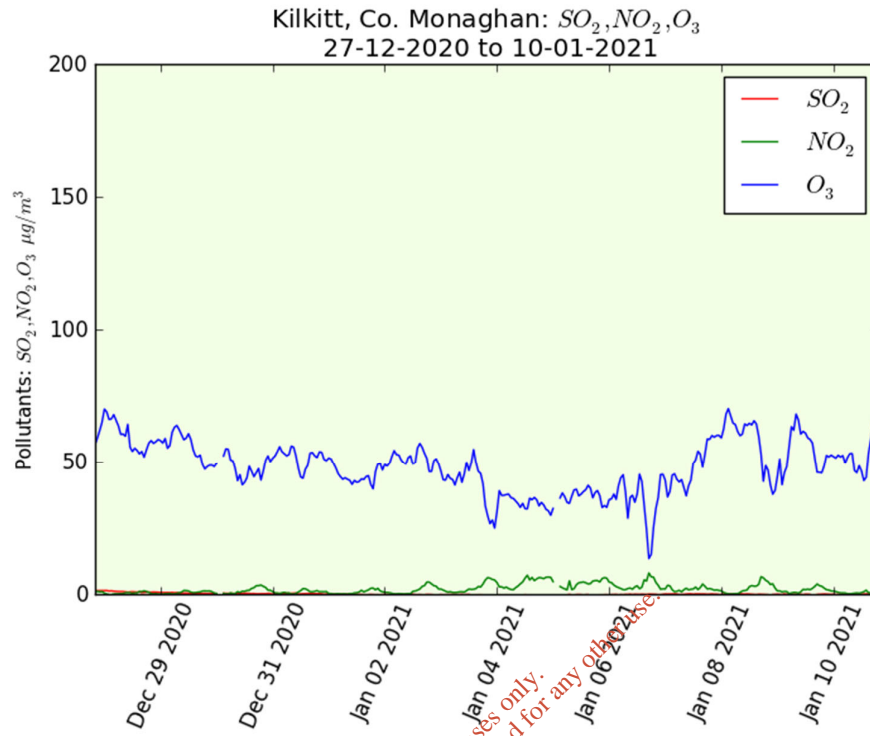
## APPENDIX 6

### AIR MONITORING RESULTS FROM KILKITT WATER WORKS (10.01.2021)

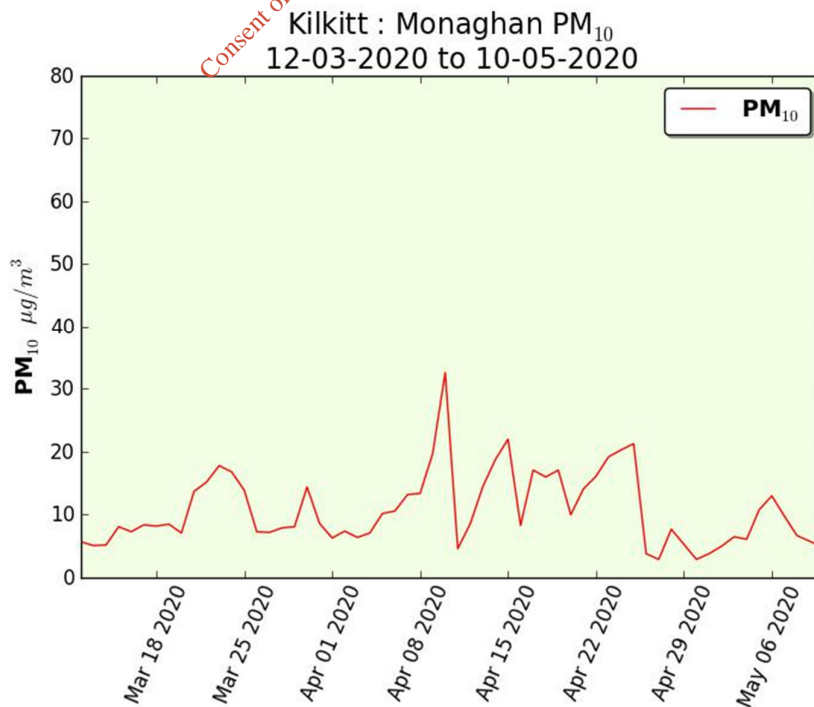
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## Kilkitt, Co.Monaghan Monitoring Data



## Particulate Matter Levels at Kilgitt



## Heavy Metal Levels at Kilkitt

Four heavy metals are measured as part of the particulate matter (PM<sub>10</sub>) sampling. Particulate filters are digested and analysed in the laboratory.

The latest available results for Heavy Metals are:

**Averaging Period: 1 Jan 2018 - 31 Dec 2018**

### Nickel

Average Concentration: 0.34 ng m<sup>-3</sup>

This is below the lower assessment threshold of 10.0 ng m<sup>-3</sup>

### Arsenic

Average Concentration: 0.19 ng m<sup>-3</sup>

This is below the lower assessment threshold of 2.4 ng m<sup>-3</sup>

### Cadmium

Average Concentration: 0.08 ng m<sup>-3</sup>

This is below the lower assessment threshold of 2.0 ng m<sup>-3</sup>

### Lead

Average Concentration: 0.002 ug m<sup>-3</sup>

This is below the lower assessment threshold of 0.25 ug m<sup>-3</sup>

## Benzo (a) Pyrene Levels at Kilkitt

Benzo(a)Pyrene (BaP) is measured as part of the particulate matter (PM<sub>10</sub>) sampling. Particulate filters are extracted and analysed in the lab.

The latest available results for benzo(a)pyrene are:

### Benzo(a)Pyrene

Average Concentration: 0.08 ng m<sup>-3</sup>

Averaging Period: 1 Jun 2017 - 31 Mar 2018

This is below the limit value of 1 ng m<sup>-3</sup>

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