Lott Lane Residential Development

Ecological Impact Assessment




Prepared By:

Moore Group -
Environmental Services

On behalf of:
Wicklow County Council

Job Number 19156
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Project Proponent	Wicklow County Council
Project	Lott Lane Residential Development
Title	Lott Lane Residential Development Ecological Impact Assessment

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Moore Archaeological and Environmental Services Limited				

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1. INTRODUCTION

Moore Group was commissioned by Wicklow County Council to undertake a Habitat Survey and EcIA of the site of a proposed residential development at Lott Lane, Kilcoole, Co. Wicklow.

This report provides information on ecological features if present within the potential Zone of Influence of the Proposed Development, of particular significance, primarily designated habitats and species, including habitats/species listed in Annex I, II and IV of the EU Habitats Directive, rare flora listed in the Flora Protection Order along with other semi-natural habitats of conservational value.

This report was compiled by Ger O'Donohoe M.Sc. of Moore Group providing information on habitats in the study area. Ger is the principal ecologist with Moore Group and has over 27 years' experience in ecological impact assessment. He graduated from GMIT in 1993 with a B.Sc. in Applied Freshwater & Marine Biology and subsequently worked in environmental consultancy while completing an M.Sc. in Environmental Sciences, graduating from Trinity College, Dublin in 1999. (He also has over 15 years' experience of carrying out bat surveys and has completed the Bat Conservation Ireland, Bat Detector Workshop which is the standard training for the carrying out of bat surveys in Ireland and follows the Bat Conservation Ireland 'Bat Survey Guidelines' (Aughney et al., 2008). In addition, Ger is an active member of the Galway Bat Group and Bat Conservation Ireland, which monitors bat populations in Ireland, and facilitates the education of bat communities to the public.)

The following important ecological receptors were considered in planning and designing the project, and in assessing its likely ecological effects:

- Sites with nature conservation designations, including proposed NHAs, the reasons for their designation, and their conservation objectives, where available;
- Annex IV (Habitats Directive) species of fauna and flora, and their breeding sites and resting places, which are strictly protected under the European Communities (Birds and Natural Habitats) Regulations, 2011;
- Other species of fauna and flora which are protected under the Wildlife Acts, 1976-2012;
- *'Protected species and natural habitats'*, as defined in the Environmental Liability Directive (2004/35/EC) and European Communities (Environmental Liability) Regulations, 2008, including:
    - Birds Directive – Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur);
    - Habitats Directive – Annex I habitats, Annex II species and their habitats, and Annex IV species and their breeding sites and resting places (wherever they occur);
- Other habitats of ecological value in a national to local context, including rocky habitats in the general area;
- Stepping stones and ecological corridors encapsulated by Article 10 of the Habitats Directive.

The report has been compiled in compliance with the European Communities Legal requirements and follows EPA Draft Guidelines on Information to be contained in an EIAR (EPA, 2022) and on Transport Infrastructure Ireland TII policy and guidance outlined in Section 2.

The European Habitats Directive 92/43/EEC (Article 6) indicates the need for plans and projects to be subject to Habitats Directive Assessment (also known as Appropriate Assessment) if the plan or project not directly connected with or necessary to the management of a Natura 2000 site (which includes SACs and SPAs) but which has the potential to have implications on a site's conservation objectives. These implications can be significant effects either individually or in combination with other plans or projects.

As such, a report for the purposes of Appropriate Assessment Screening was undertaken by Moore Group for the proposed development in support of the application to An Bord Pleanála. This stand-alone report is presented separately as part of the design package for the Project.

The site location is presented in Figure 1 below.

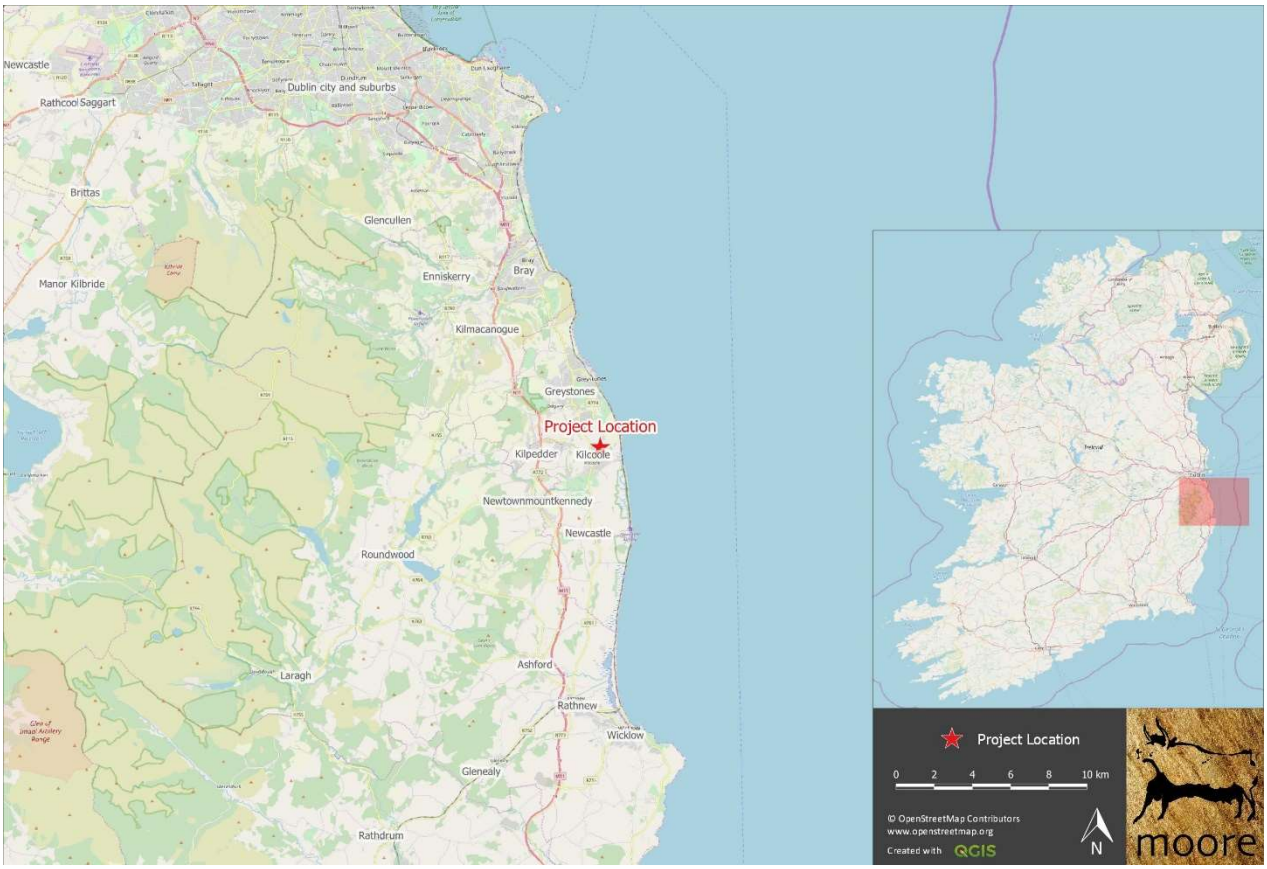

Figure 1. Showing the site location at Lott Lane, Kilcoole, County Wicklow.

2. ASSESSMENT METHODOLOGY

2.1. POLICY & LEGISLATION

2.1.1. EU Habitats Directive

The "*Habitats Directive*" (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna) is the main legislative instrument for the protection and conservation of biodiversity within the European Union and lists certain habitats and species that must be protected within wildlife conservation areas, considered to be important at a European as well as at a national level. A "*Special Conservation Area*" or SAC is a designation under the Habitats Directive. The Habitats Directive sets out the protocol for the protection and management of SACs.

The Directive sets out key elements of the system of protection including the requirement for "*Appropriate Assessment*" of plans and projects. The requirements for an Appropriate Assessment are set out in the EU Habitats Directive. Articles 6(3) and 6(4) of the Directive.

2.1.2. EU Birds Directive

The "*Birds Directive*" (Council Directive 79/409/EEC and Council Directive 2009/147/EC on the Conservation of Wild Birds) provides for a network of sites in all member states to protect birds at their breeding, feeding, roosting and wintering areas. This directive identifies species that are rare, in danger of extinction or vulnerable to changes in habitat and which need protection (Annex I species). Appendix I indicates Annex I bird species as listed on the Birds Directive. A "*Special Protection Area*" or SPA, is a designation under The Birds Directive.

Special Areas of Conservation and Special Protection Areas form a pan-European network of protected sites known as Natura 2000 sites and any plan or project that has the potential to impact upon a Natura 2000 site requires appropriate assessment.

2.1.3. Wildlife Acts 1976 - 2012

The primary domestic legislation providing for the protection of wildlife in general, and the control of some activities adversely impacting upon wildlife is the Wildlife Act of 1976. The aims of the wildlife act according to the National Parks and Wildlife Service are "*... to provide for the protection and conservation of wild fauna and flora, to conserve a representative sample of important ecosystems, to provide for the development and protection of game resources and to regulate their exploitation, and to provide the services necessary to accomplish such aims*." All bird species are protected under the act.

The Wildlife (Amendment) Act of 2000 amended the original Act to improve the effectiveness of the Act to achieve its aims.

2.2. SURVEY METHODOLOGY

2.2.1. Desk Study

The assessment was carried out in three stages, firstly through desktop assessment to determine existing records in relation to habitats and species present in the study areas. This included research on the NPWS metadata website, the National Biodiversity Data Centre (NBDC) database and a literature review of published information on flora and fauna occurring in the development area.

Sources of information that were used to collate data on biodiversity in the potential Zone of Influence are listed below:

- The following mapping and Geographical Information Systems (GIS) data sources, as required:
    - National Parks & Wildlife (NPWS) protected site boundary data;
    - Ordnance Survey of Ireland (OSI) mapping and aerial photography;
    - OSI/ Environmental Protection Agency (EPA) rivers and streams, and catchments;
    - Open Street Maps;
    - Digital Elevation Model over Europe (EU-DEM);
    - Google Earth and Bing aerial photography 1995-2022;
- Online data available on Natura 2000 sites as held by the National Parks and Wildlife Service (NPWS) from www.npws.ie including:
    - Natura 2000 - Standard Data Form;
    - Conservation Objectives;
    - Site Synopses;
- National Biodiversity Data Centre records;
    - Online database of rare, threatened and protected species;
    - Publicly accessible biodiversity datasets.
- Status of EU Protected Habitats in Ireland. (National Parks & Wildlife Service, 2019); and
- Relevant Development Plans in neighbouring areas:
    - Wicklow County Development Plan 2022-2028

2.2.2. Field Study

The second phase of the assessment involved a site visit to establish the existing environment in the footprint of the proposed development area. Areas which were highlighted during desktop assessment were investigated in closer detail according to the Heritage Council Best Practice Guidance for Habitat Survey and Mapping (Smith *et al*., 2011). Habitats in the proposed development area were classified

according to the Heritage Council publication "*A Guide to Habitats in Ireland*" (Fossitt, 2000). This publication sets out a standard scheme for identifying, describing and classifying wildlife habitats in Ireland. This form of classification uses codes to classify different habitats based on the plant species present. Species recorded in this report are given in both their Latin and English names. Latin names for plant species follow the nomenclature of "*An Irish Flora"* (Parnell & Curtis, 2012).

Habitats were surveyed on the 11th & 12th June 2019 and 20 & 21 August 2019 by conducting a study area walkover covering the main ecological areas identified in the desktop assessment. The survey date is within the optimal botanical survey period. A photographic record was made of features of interest.

Signs of mammals such as badgers and otters were searched for while surveying the study area noting any sights, signs or any activity in the vicinity especially along adjacent boundaries.

Birds were surveyed using standard transect methodology and signs were recorded where encountered during the field walkover surveys.

A bat detector survey was carried out on 20/21 August 2019. Specific details of the methodology are presented in the section on mammals.

2.2.3. Site Evaluation and Impact Assessment

The final part of the assessment involves an evaluation of the study area and determination of the potential impacts on the habitats of the study area. This part of the assessment forms the basis for Impact Assessment and is based on the following guidelines and publications:

- Guidelines for Ecological Impact Assessment in the UK And Ireland Terrestrial, Freshwater, Coastal and Marine September 2018 Version 1.1 - Updated September 2019 (CIEEM, 2019);
- EPA Draft Guidelines on Information to be contained in an EIAR (EPA, 2022);
- Best Practice Guidance for Habitat Survey and Mapping (Heritage Council, 2011);
- Ecological Surveying Techniques for Protected Flora & Fauna (NRA, 2008);
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009);
- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (DEHLG, December 2009, Rev 2010);
- Assessment of plans and projects significantly affecting Natura 2000 sites (EC, 2002);
- Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC (EC, 2007).

While prepared for linear projects the TII Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009) are still relevant and outlines the methodology for evaluating ecological impacts of the project in the present report. According to the TII Guidelines, the Ecological Study should address:

- Designated conservation areas and sites proposed for designation within the zone(s) of influence of any of the Project options,
- All the main inland surface waters (e.g. rivers, streams, canals, lakes and tanks) that are intersected by any of the route corridor options, including their fisheries value and any relevant designations,
- Aquifers and dependent systems and turloughs and their subterranean water systems,
- Any known or potentially important sites for rare or protected flora or fauna that occur along or within the zone(s) of influence of any of the route options,
- Any other sites of ecological value, that are not designated, along or in close proximity to any of the route corridor options,
- Any other relevant conservation designations or programmes (e.g. catchment management schemes, habitat restoration or creation projects, community conservation projects, etc.),
- Any other features of particular ecological or conservation significance along any of the route options.

The TII Guidelines set out a method of evaluating the importance of sites identified and in turn the evaluation of the significance of impacts. The Evaluation Scheme is presented in Appendix 1 for reference.

Impact Assessment is then based on CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland, 2019.

3. PROJECT DESCRIPTION

The proposed Project comprises the construction and operation of a residential development at Lott Lane, Kilcoole, County Wicklow.

Surface water disposal shall be in accordance with Wicklow County Council policy on storm water, the Greater Dublin Regional Code of Practice for Drainage Works and best practice for Sustainable Urban Drainage Systems.

Wastewater from the proposed development will be directed to the Greystones WWTP which has the capacity to assimilate the additional load, see Annual Environmental Report for Greystones WWTP (2021) available online through the Environmental Protection Agency's (EPA) website. Section 2.1.4 of the report refers to the existing capacity and reports that the WWTP has the remaining capacity of 14,814 PE which is not expected to be exceeded in the 3 yr period to 2023.

Figure 2 shows a detailed view of the existing site on high resolution aerial photography. Figure 3 shows the layout of the proposed development.

Figure 2. Showing the indicative site and overall land holding on recent aerial photography.

Figure 3. Site layout of the proposed development.

4. EXISTING ENVIRONMENT

4.1. DESIGNATED CONSERVATION AREAS

The Department of Housing, Planning and Local Government (previously DoEHLG)'s Guidance on Appropriate Assessment (2009) recommends an assessment of European sites within a Zone of Influence (ZoI) of 15km. However, this distance is a guidance only and a zone of influence of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. In accordance with the OPR Practice Note, PN01, the ZoI should be established on a case-by-case basis using the Source-Pathway-Receptor framework and not by arbitrary distances (such as 15km).

The Zone of Influence may be determined by considering the Proposed Development's potential connectivity with European sites, in terms of:

- Nature, scale, timing and duration of works and possible impacts, nature and size of excavations, storage of materials, flat/sloping sites;
- Distance and nature of pathways (dilution and dispersion; intervening 'buffer' lands, roads etc.); and
- Sensitivity and location of ecological features.

The potential for source pathway receptor connectivity is firstly identified through GIS interrogation and detailed information is then provided on sites with connectivity. European sites that are located within a potential Zone of Influence of the Proposed Development are listed in Table 1 and presented in Figures 4 and 5, below. Spatial boundary data on the Natura 2000 network was extracted from the NPWS website (www.npws.ie) on 22 June 2022. This data was interrogated using GIS analysis to provide mapping, distances, locations and pathways to all sites of conservation concern including pNHAs, NHA and European sites.

Table 1 European Sites located within the potential Zone of Influence[1] of the Proposed Development.

Site Code	Site name	Distance (km)[2]
000719	Glen of The Downs SAC	3.37
002249	The Murrough Wetlands SAC	0.54
004186	The Murrough SPA	1.07

The Proposed Development is to take place on a greenfield site located on the northern outskirts of the town of Kilcoole. The nearest European sites to the proposed Project are associated with the Murrough,

[1] All European sites potentially connected irrespective of the nature or scale of the Proposed Development.
[2] Distances indicated are the closest geographical distance between the proposed Project and the European site boundary, as made available by the NPWS.

along the coast to the east, and include The Murrough Wetlands SAC (Site Code 002249), which is located approximately 540m to the east, and The Murrough SPA (Site Code 004186), which is located approximately 1.07km to the south east.

A review of Ordnance Survey Ireland (OSI) Geographical Information System (GIS) data indicates that there are no rivers or streams located in the immediate environs of the Proposed Development site. This was confirmed during fieldwork, with no field drains noted inside or within the environs of the Proposed Development site. It appears that surface water goes to ground within the site or along its boundaries. There is no connectivity to any European Sites.

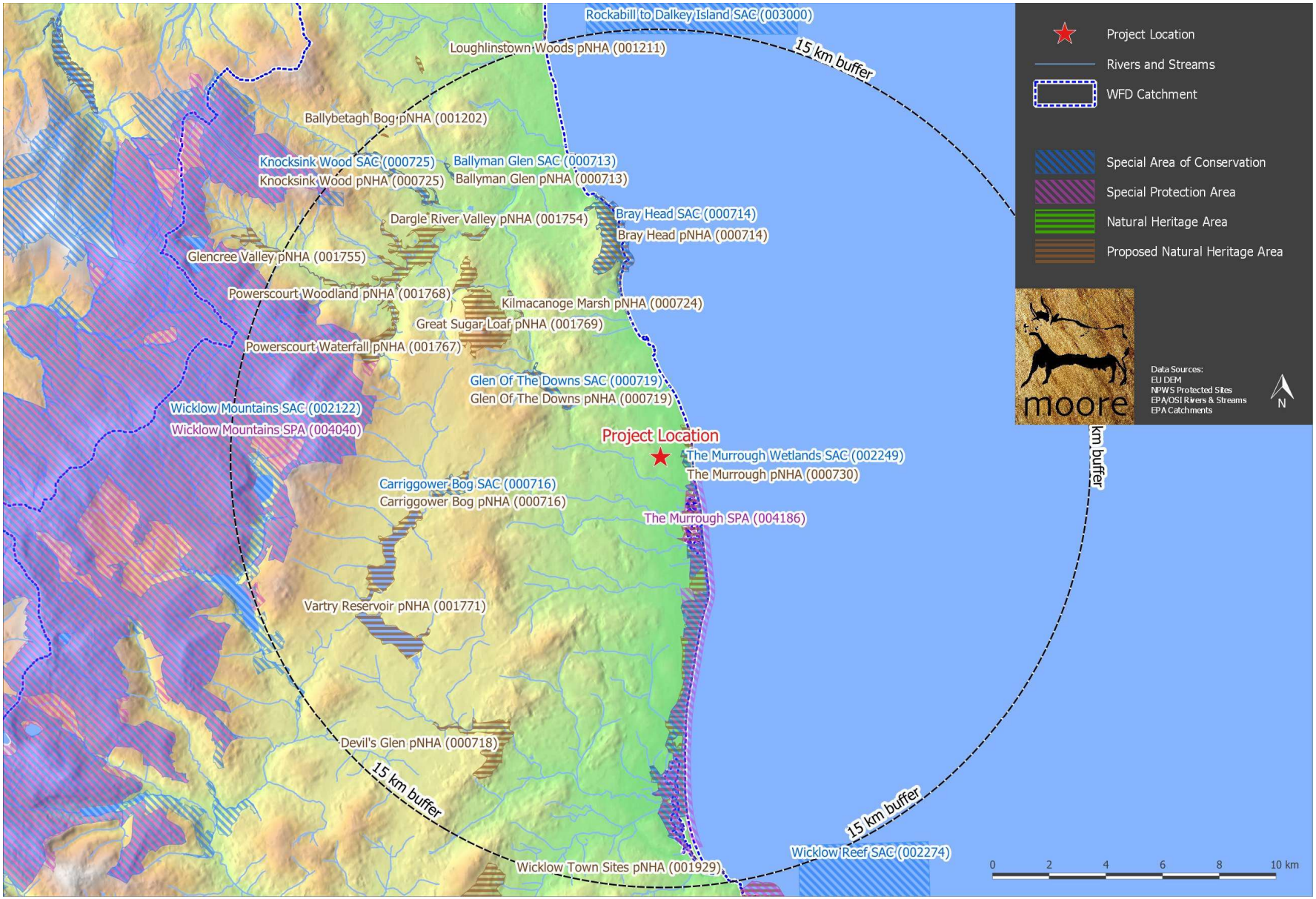

Figure 4. Showing the designated conservation sites in the vicinity of the Project.

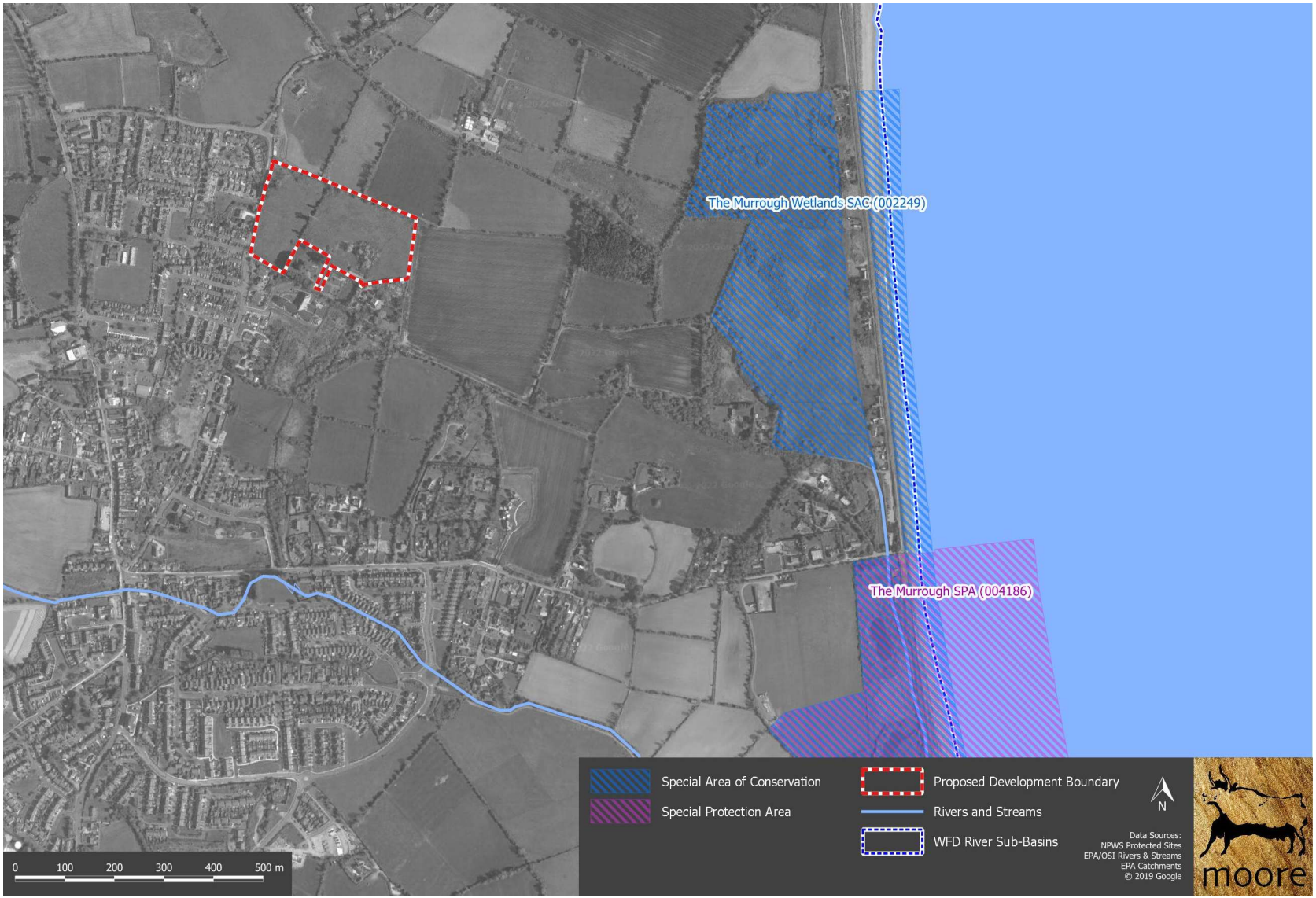

Figure 5. Detail of designated conservation sites in the vicinity of the Project site.

4.2. HABITAT DESCRIPTIONS

The proposed Project site is comprised of heavily grazed agricultural grassland (GA1) with patches of Scrub (WS1) and outgrown Hedgerows/Treelines (WL1/WL2), see Figure 6.

Grassland species present include: Cocksfoot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), Rye grasses (*Lolium* spp.), Nettle (*Urtica diocia*), Thistles, (*Cirsium arvense, C. vulgaris*), Broad dock (*Rumex obtusifolius*), Ragwort (*Senecio jacobaea*), Broad plantain (*Plantago major*), Stitchwort (*Stellaria holostea*), Yarrow (*Achillea millefolium*), Dandelion (*Taraxacum officinale* agg.), Germander Speedwell (*Veronica persica*), Great willowherb (Epilobium) along with Sowthistles (*Sonchus asper and S. oleraceus*) and Cleavers (*Galium aparine*).

There is a central area which is Scrub (WS1) populated with scattered Silver Maple (*Acer saccharinum*). Scrub species present on site include semi-mature Ash (*Fraxinus excelsior*) and Hawthorn (*Crataegus monogyna*) with Elder (*Sambucus nigra*) and occasional patches of Gorse (*Ulex europaeus*), Bramble (*Rubus fruticosus agg*.) and Nettle.

The outgrown hedgerows are transitioning to treelines with Ash, Sycamore (*Acer pseudoplatanus*), Willow and Scot's Pine (*Pinus sylvestris*) outstanding in the central internal line. The understorey is comprised of dense Nettle, Hogweed and Cow parsley with abundant Ivy and Cleavers.

There were no third schedule invasive species recorded at the proposed development site.

Figure 6. Habitat map based on recent aerial photography.

4.1. FAUNA

4.1.1. Mammals

Otters

There are no current records for otters from the NBDC database for the area. Nearby records refer to the Murrough Wetlands further south in the vicinity of the Kilcoole Stream and lagoons. There are no holts or resting places in the vicinity of the site and no signs of otters .

Badgers

There is one record for Badgers in the 100m sq O305084 located on the eastern field boundary of the neighbouring arable field to the east. There are no badger setts in the study area.

Bats

A Bat Survey was undertaken by Specialist John Curtin of Eire Ecology. The NBDC database was consulted for details on bat records held for the site and the surroundings. The database was consulted on the 23/08/2019 for details on historical records from the site, the surrounding 2km O30E and O20Z.

One of the nine confirmed resident bat species known to occur in Ireland have been recorded within the 2km square O30E with a Brown Long eared roost recorded from a building just to the south-east of the site while three bat species have been recorded within the O20Z 2km square.

Table 4. Irish bat species recorded in the O30E 2km grid

Scientific name	**Common name**	**Date of last record**	**Designation**	
Nyctalus leisleri	Leisler's Bat	06/06/2011	EU Habitats Directive >> Annex IV || Wildlife Acts	C. 350m to the west
Pipistrellus pipistrellus sensu lato	Pipistrelle	23/05/2007	EU Habitats Directive >> Annex IV || Wildlife Acts	Vague 1km square over 700m to the west.
Pipistrellus pygmaeus	Soprano Pipistrelle	26/06/1998	EU Habitats Directive >> Annex IV || Wildlife Acts	C. 390m to the southwest of the subject site.
Plecotus auritus	Brown Long-eared Bat	12/08/1998	EU Habitats Directive >> Annex IV || Wildlife Acts	Roost located in building just to the southeast of the subject site.

In order to assess the presence and activity of bats within the proposed development grounds, a preliminary daylight site inspection was conducted on the 19/08/2019. A full night time detector survey was conducted from the 19th to dawn of the 20th of August.

A detailed inspection of the stable was undertaken during daylight hours on the 19th and 20th of August 2019. The aim was to compile information on actual and potential access points and roosting locations. This was done by searching for evidence of bats including live and dead specimens, droppings, feeding remains, urine splashes, fur oil staining and noises.

The exterior of the buildings were inspected first from ground level, with the aid of binoculars. The search included the ground, accessible windowsills, walls, eaves, roof slates, gutters, downspouts and the roof ridge. A systematic search of all accessible interiors was also undertaken. Searches were carried out with the aid of binoculars, torches, an endoscope, thermal imaging device and a ladder and focused on walls, floors, roof beams, lintels, shelves, etc.

A thorough examination of the building using ladder, high powered torch, a Seek Reveal XR FF thermal imaging device and an Ridgid CA-300 Inspection Camera (under Licence No: 137/2018) did not reveal any roosting bats. The building is a plastered block structure with a tiled roof and contains a layer of bitumen felt. There are no windows however several doorways provide access to the interior. No signs of bat droppings, staining or scratch marks were found on the floor, walls or rafters.

The daylight and night time bat surveys were undertaken on the 19th and 20th of August 2019. This date lies within the main bat activity season according to the Bat Mitigation Guidelines (Kelleher, 2006). All surveys were carried out during good weather conditions.

A dusk-dawn mobile detector survey was carried out completing looped transects of the site during the dusk and dawn periods to survey for commuting, feeding and potential roost sites. Towards dawn the surveyor focused primarily near the stables in order to investigate whether bats were entering the stable. Surveys commenced at 20:40; just prior to sunset and continued for three hours. The survey then recommenced two hours before sunrise at 04:13 and continued until sunrise. Each contact with a bat was recorded. Where possible, a positive identification to species level was made. Information on the behavior was also recorded where available.

The bat detector used during the walked surveys was a Wildlife Acoustics Inc. (Massachusetts, USA) Echo Meter Touch Pro bat detector which is triggered to record when a bat call is emitted louder than 18dB for 1sec. This detector uses full spectrum sampling; detecting all frequencies simultaneously, meaning that multiple bat calls can be recorded at the same time.

A contact as shown below describes a bat observed by the surveyor. This contact can range from a commuter passing quickly to a foraging bat circling a feature lasting for several minutes. Some observations contain multiple bats. When several bats of the same species are encountered together, they are recorded under the one contact. A separate contact is recorded for each species. A contact finishes when the recorder assumes the bat is no longer present. It is likely that the same bat is recorded in several contacts throughout the night. This survey type cannot estimate abundance of bats, rather activity; the amount of use bats make of an area / feature. The survey followed the guidelines as set out in bat conservation Ireland's 'Bat Survey Guidelines'.

Sunset on the 19th of August occurred at 20:44 and sunrise on the 20th was at 06:13. A westerly wind of 0.9 to 1.6 m/s was recorded from the start and finish of the dusk survey with 0.6 to 1.4 wind value at the start and finish of the dawn survey. Cloud cover ranged from 40% in the evening of the 19th to 0% at dawn of the 20th. The air temperature varied during the night of the survey between 14.5 degrees at 20:40 to 14.1 degrees Celsius at 23:50. Temperatures during the dawn survey ranged from 13 degrees at 04:10 to 9.8 degrees at 06:15. No rain occurred during the surveys with overall conditions being good for bat survey work.

Results of Dusk Survey

During the survey, three bat species were identified to species level; Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*) and Leisler's Bat (*Nyctalus leisleri*).

The first recorded bat was noted in the NW corner of the site at 20:55 some 11 minutes after sunset when a single hunting Common Pipistrelle bat was noted feeding along the treeline. This bat was joined by an unseen Leisler's at 20:59. Further activity was noted at 21:27 to the south of the site close to the stables where several recordings of hunting Leisler's bats were recorded. Common Pipistrelle were also noted in this area. At 21:47 the first Soprano Pipistrelle was noted when a brief unseen registration was recorded. Activity had reduced at this time with sporadic activity recorded through the site. At 22:19 and 22:26 hunting a lone hunting Common Pipistrelle was noted by hedgerow and treelines to the west of the site. At 23:09 up to four Pipistrelle bats including Common and Soprano were found hunting in the North West corner of the site hunting in the grassland. The survey finished at 23:45.

Results of Dawn Survey

During the survey, two bat species were identified to species level; Common Pipistrelle (*Pipistrellus pipistrellus*) and Soprano Pipistrelle (*Pipistrellus pygmaeus*).

Sporadic activity was recorded during the dawn survey with occasional Pipistrelle activity noted. At 05:46 activity by the stable had increased somewhat when a hunting Common Pipistrelle was observed flying around the shed hunting in the scrubby area to the rear of the building and by the Leyland treeline

to the south-east. The last bat recording occurred at 05:48 when the bat flew beyond the adjacent bungalow in a southerly direction. This occurred 25 minutes prior to sunrise.

No activity was noted from rarer bat species such as Brown Long-eared bat, Nathusius Pipistrelle or any of the Myotis species. No bat showed signs of roosting behaviour within the stables located on the site.

4.1.2. Birds

All birds are protected under the Wildlife Acts. A list of breeding bird species recorded during fieldwork in June 2019 is presented in Table 3 below.

Table 3. Birds recorded during fieldwork in June 2019.

Birds	Scientific name	BWI Status	Habitat Type
Blackbird	*Turdus merula*	Green	Dense woodland to open moorland, common in gardens
Magpie	*Pica pica*	Green	Gardens, woods, hedges
Chaffinch	*Fringilla coelebs*	Green	Hedgerows, gardens and farmland
Great Tit	*Parus major*	Green	Woods, hedges, gardens
Woodpigeon	*Columba palumbus*	Green	Gardens, woods, hedges

5. ASSESSMENT OF IMPACTS

5.1. SITE EVALUATION

The ecological value of the site was assessed following the guidelines set out in the Institute of Ecology and Environmental Management's Guidelines for Ecological Impact Assessment (2016) and according to the Natura Scheme for evaluating ecological sites (after Nairn & Fossitt, 2004). Judgements on the evaluation were made using geographic frames of reference*, e.g.* European, National, Regional or Local.

Due cognisance of features of the landscape which are of major importance for wild flora and fauna, such as those with a "*stepping stone*" and ecological corridors function, as referenced in Article 10 of the Habitats Directive were considered in this assessment.

Following a detailed literature review, desktop assessment and field survey the site can be categorised into a three main habitat types:

- Improved grassland (GA1)
- Scrub (WS1)

- Hedgerows/Treelines (WL1/WL2)

There were no rare or protected floral species recorded on the site and there were no records of Third schedule invasive species.

The habitats under the footprint of the proposed development are of low to moderate local ecological value.

5.2. IMPACT ASSESSMENT

5.2.1. Direct Impacts

Habitats

There will be no direct impacts on The Murrough European sites and there will be no habitat loss or fragmentation as a result of the proposed Project.

Having considered direct impacts and ruling them out, indirect impacts are then considered.

A worst-case scenario may be considered whereby the Project would be the source of a significant detrimental change in water quality in The Murrough either alone or in combination with other projects or plans as a result of indirect pollution or the result of change in hydrology such that it affected the wetland areas of The Murrough. The effect would have to be considered in terms of changes in water quality or hydrology which would affect the species and/or habitats or food sources for which The Murrough species and/or habitats are designated. However, this is unlikely.

Adverse effects on The Murrough are unlikely given:

- The distance between the proposed Project and The Murrough Wetlands SAC, approximately 540m;
- Wastewater from the proposed development will be directed to the Greystones WWTP which has the capacity to assimilate the additional load; and
- In line with SUDS principles, surface water will go to ground following oil interception and attenuation. There will therefore be no significant change to the local hydrological regime and no significant change to the groundwater which gives rise to the Murrough wetland areas to the east and south east of the proposed Project.

In light of the above, adverse effects on any European sites are unlikely and significant effects can be ruled out.

The proposed Project site is comprised of heavily grazed agricultural grassland (GA1) with patches of Scrub (WS1) and outgrown Hedgerows/Treelines (WL1/WL2).

There were no Third schedule invasive species recorded in the proposed Project area.

Fauna

Otters

There will be no direct or indirect impacts on otters.

Badgers

There will be no direct or indirect impact on badgers.

Bats

The Bat Survey provides a preliminary study of bat usage of the stables within pasture on lands adjacent to Lott Lane, Kilcoole.

- Disturbance

Works associated with development or building work are likely to lead to an increase in human presence at the site, extra noise and changes in the site layout and local environment.

- Loss of potential Roosts

The redevelopment of this site involves the demolition of a stable. No bat roost as found within the building despite a thorough search and a nighttime detector survey.

The results of the surveys presented above show the presence of bats using the site for feeding purposes, particularly to the north-west and the south-east. No signs of roosting bats were found.

Lighting from the proposed residential scheme is unlikely to affect commuting bats given the buffer distance from the Project site to the riparian woodland.

Birds

Any vegetation to be cut will be done so outside the bird nesting season 1st March – 31st August.

5.2.2. Indirect Impacts

The construction phase of the proposed Project will involve some ground disturbance and construction activity. .

The proposed access road will clear span the stream and there will be no instream works and works will be limited to the upper riparian zone and amenity grassland to the north and agricultural grassland to the south.

There will be no direct or indirect impacts on the Glen of the Downs SAC woodland located c. 530 m to the north.

In terms of the operational phase, wastewater from the proposed scheme will be directed to municipal sewer. Wastewater from the proposed development will be directed to the Greystones WWTP which has the capacity to assimilate the additional load. There will be no indirect impacts from wastewater on European sites identified in the potential zone of impact of the proposed Project.

5.2.3. Cumulative Impacts

Cumulative impacts or effects are changes in the environment that result from numerous human-induced, small-scale alterations. Cumulative impacts can be thought of as occurring through two main pathways: first, through persistent additions or losses of the same materials or resource, and second, through the compounding effects as a result of the coming together of two or more effects.

A review of mapping made available through the planning section of the Wicklow County Council website indicates that, within the last three years, there have been six applications for planning granted permission within 500m of the proposed Project, see Table 4 below.

Planning Ref.	Description of development	Comments
191227	single storey bedroom and bathroom extension to side of house with internal alterations to house and all associated site works	No potential for in-combination effects given the scale and location of the project.
1925	alterations to existing planning permission Pl Reg Ref 16/1145 to include the following: 1 a permanent change of use to 360 sqm personal fitness gym 2. A permanent change of use from 80 sqm office to 80 sqm personal fitness gym with therapy room 3. All the above to have extended opening hours from 6am to 9pm, all the above together with all associated site development works	No potential for in-combination effects given the scale and location of the project.
19250	change of use of existing first floor storage over garage to a habitable bedroom together with escape window to the rear and associated site works	No potential for in-combination effects given the scale and location of the project.
19277	proposed dwelling with connection to services, new entrance and associated works	Having regard to the nature and scale of the proposed development and its distance from designated Natura 2000 sites, it not considered that the proposed development would give rise to any adverse impacts on the qualifying interests and conservation objectives of any natura site and therefore the proposed development would not necessitate the carrying out of an Appropriate Assessment in accordance with the requirements of Article 5(3) of the EU Habitats Directive.

Planning Ref.	Description of development	Comments
19722	existing garage consisting of 49 sqm, all necessary site works and ancillary works to facilitate the development	No potential for in-combination effects given the scale and location of the project.
19815	proposed dwelling with connection to services, garage/store, access driveway and associated works	No potential for in-combination effects given the scale and location of the project.
20537	temporary single storey modular structures comprising 600m2 approximately in total, to provide temporary Adult Day Care facilities on lands attached to the old Holy Faith Convent, Kilcoole. The application includes for a new access road from the R761, main Kilcoole Road, opposite the intersection with Lott Lane, a temporary wastewater plant, car park and associated site works	No potential for in-combination effects given the scale and location of the project.
20709	as constructed floor levels to houses no. 1 to 4 and all associated ancillary site works and services	No potential for in-combination effects given the scale and location of the project.
20768	alterations and nominal amendments to the primary school redevelopment as permitted under parent permission Ref. 16/791 to include: 1) Roof mounted photovoltaic panels of approx. 110m2. 2) Existing roof replaced with new pitched and flat roof. 3) Level of permitted extension roof raised 450mm. 3) Minor modification to a) approved pedestrian access route from Kilcoole Road, b) internal layout of approved building. Nominal area increase 10m2	No potential for in-combination effects given the scale and location of the project.
20802	alterations and nominal amendments to the primary school redevelopment as permitted under parent permission Ref. 16/778 to include: 1) Roof mounted photovoltaic panels approx. 100m2. 2) Roof heights: main parapet raised 375 mm, highest point lowered 1m. 3) Single storey rooms reconfigured at entrance including canopy. 4) Minor setting out adjustment to building	No potential for in-combination effects given the scale and location of the project.

There are no predicted in-combination effects with the developments in Table 4 given that they have been screened for potential significant effects on European sites where appropriate and given that it is predicted that the proposed Project is unlikely to have adverse effects on any European site.

6. MITIGATION MEASURES

6.1.1. Bats & Birds

Potential impacts on birds will be avoided by cutting of vegetation outside the bird nesting season March 1st to August 31st.

Mature trees, which are to be removed will be felled in the period early September to late October, or early November, in order to avoid the disturbance of any roosting bats as per Transport Infrastructure Ireland (TII and formerly the National Roads Authority) guidelines (NRA 2006a and 2006b). Tree felling will be completed by Mid-November at the latest because bats roosting in trees are vulnerable to disturbance during their hibernation period (November – April). Ivy-covered trees, once felled, will be left intact onsite for 24 hours prior to disposal to allow any bats beneath the foliage to escape overnight.

A bat specialist will survey mature trees to be felled for roosting bats prior to felling and will provide detailed measures for any roosts found at that time.

The mature trees that are to be removed, should, due to the passage of time, again be surveyed for bat presence by a suitably experienced specialist on the day of felling. If several bats are found within any one tree, that specific tree should be left *in-situ* while an application for a derogation licence is made to the *National Parks and Wildlife Service* to allow its legal removal.

The trees identified as having potential for use by bats will be felled carefully to avoid hard shocks which may injure any bats within. Large mature trees with bat roosting potential such as those onsite will essentially be felled by gradual dismantling by tree surgeons. Care will be taken when removing larger branches as removal of loads may cause cracks or crevices to close, crushing any animals within. Such cracks will be wedged open prior to load removal. If single bats are found during tree felling operations, they will be transferred to the previously erected bat boxes onsite (see below).

To offset the loss of any tree roost a bat box scheme should be provided onsite. Bat boxes have been proven to be acceptable alternatives for bats and these are readily occupied. Boxes could be mounted on large retained trees.

7. CONCLUSIONS

There are no significant impacts predicted from the proposed development on habitats, flora, fauna or biodiversity.

There will be no direct or indirect impacts on European sites identified in the potential zone of impact of the proposed Project.

The proposed Project includes a Landscape Plan which includes planting of native locally sourced species and the retention of surrounding scrub and woodland habitats.

8. REFERENCES

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Appendix 1

TII Evaluation of Habitats

Ecological valuation: Examples

International Importance:

- 'European Site' including Special Area of Conservation (SAC), Site of Community Importance (SCI), Special Protection Area (SPA) or proposed Special Area of Conservation.
- Proposed Special Protection Area (pSPA).
- Site that fulfills the criteria for designation as a 'European Site' (see Annex III of the Habitats Directive, as amended).
- Features essential to maintaining the coherence of the Natura 2000 Network.[4]
- Site containing 'best examples' of the habitat types listed in Annex I of the Habitats Directive.
- Resident or regularly occurring populations (assessed to be important at the national level)[5] of the following:
  - Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or
  - Species of animal and plants listed in Annex II and/or IV of the Habitats Directive.
- Ramsar Site (Convention on Wetlands of International Importance Especially Waterfowl Habitat 1971).
- World Heritage Site (Convention for the Protection of World Cultural & Natural Heritage, 1972).
- Biosphere Reserve (UNESCO Man & The Biosphere Programme).
- Site hosting significant species populations under the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals, 1979).
- Site hosting significant populations under the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats, 1979).
- Biogenetic Reserve under the Council of Europe.
- European Diploma Site under the Council of Europe.
- Salmonid water designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988, (S.I. No. 293 of 1988).[6]

National Importance:

- Site designated or proposed as a Natural Heritage Area (NHA).
- Statutory Nature Reserve.
- Refuge for Fauna and Flora protected under the Wildlife Acts.
- National Park.
- Undesignated site fulfilling the criteria for designation as a Natural Heritage Area (NHA); Statutory Nature Reserve; Refuge for Fauna and Flora protected under the Wildlife Act; and/or a National Park.
- Resident or regularly occurring populations (assessed to be important at the national level)[7] of the following:
  - Species protected under the Wildlife Acts; and/or
  - Species listed on the relevant Red Data list.
- Site containing 'viable areas'[8] of the habitat types listed in Annex I of the Habitats Directive.

County Importance:

- ☐ Area of Special Amenity.[9]
- ☐ Area subject to a Tree Preservation Order.
- ☐ Area of High Amenity, or equivalent, designated under the County Development Plan.
- ☐ Resident or regularly occurring populations (assessed to be important at the County level)[10] of the following:
  - ☐ Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;
  - ☐ Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;
  - ☐ Species protected under the Wildlife Acts; and/or
  - ☐ Species listed on the relevant Red Data list.
- ☐ Site containing area or areas of the habitat types listed in Annex I of the Habitats Directive that do not fulfil the criteria for valuation as of International or National importance.
- ☐ County important populations of species, or viable areas of semi-natural habitats or natural heritage features identified in the National or Local BAP,[11] if this has been prepared.
- ☐ Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county.
- ☐ Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.

Local Importance (higher value):

- ☐ Locally important populations of priority species or habitats or natural heritage features identified in the Local BAP, if this has been prepared;
- ☐ Resident or regularly occurring populations (assessed to be important at the Local level)[12] of the following:
  - ☐ Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;
  - ☐ Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;
  - ☐ Species protected under the Wildlife Acts; and/or
  - ☐ Species listed on the relevant Red Data list.
- ☐ Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality;
- ☐ Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value.

Local Importance (lower value):

- ☐ Sites containing small areas of semi-natural habitat that are of some local importance for wildlife;
- ☐ Sites or features containing non-native species that are of some importance in maintaining habitat links.

Appendix 2

Site Photos

Photo 1. Showing the central access to the site.

Photo 2. Showing central grazed grassland and internal treeline.

Photo 3. Showing central scattered Willow trees and scrub area.

Photo 4. Showing stable block to be demolished.