

ECOLOGICAL IMPACT ASSESSMENT

FOR THE PROPOSED

PUBLIC PARK IN LANDS ADJACENT TO GLENAMUCK ROAD SOUTH

for:

Dún Laoghaire-Rathdown County Council

County Hall
Marine Road
Dún Laoghaire
Co. Dublin



by:

CAAS Ltd.

1st Floor,
24-26 Ormond Quay Upper
Dublin 7



9th March 2021

Document Control

	Author/Reviewer	Date
Prepared by	Karen Dylan Shevlin & Andrew Torsney	Various dates to 09 March 2021
Reviewed by	Paul Fingleton	09 March 2021
Status of this version	Final	

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1 INTRODUCTION

1.1 OVERVIEW AND AIMS

This report assesses potential impacts that may arise from the proposed Glenamuck Park on biodiversity within the receiving environment, in accordance with the following guidance documents:

- *Draft Guidelines on Information to be contained in Environmental Impact Statement Reports.* (2017) Environmental Protection Agency.
- *Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine* (2018). Chartered Institute of Ecology and Environmental Management (CIEEM), Ver. 1.1 Updated September 2019.
- *Guidelines for Preliminary Ecological Appraisal.* (2017) Chartered Institute of Ecology and Environmental Management (CIEEM), Second Edition.
- *A Guide to Habitats in Ireland* (2000), Fossitt JA.
- *Best Practice Guidance for Habitat Survey and Mapping.* (2011) The Heritage Council.

It aims to discuss the existing ecological environment, the potential impacts of the masterplan and avoidance and mitigation measures in relation to habitats, flora and fauna in the zone of influence (ZOI) of the proposed masterplan. A separate stand-alone AA Screening Report is also included in the planning application documentation.

1.2 LEGISLATIVE CONTEXT

Specific focus is placed on protected species/habitat features as well as those of local or national importance. Ireland's *National Biodiversity Action Plan 2017–2021*¹, in accordance with the Convention on Biological Diversity, is a framework for the conservation and protection of Ireland's biodiversity, with an overall objective to secure the conservation, including, where possible, the enhancement and sustainable use of biological diversity in Ireland and to contribute to collective efforts for conservation of biodiversity globally. The plan is implemented through legislation and statutory instruments concerned with nature conservation. The Planning and Development Acts, 2000 (revised September 2020) and the European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1989 to 1999 are particularly important in that regard and include a number of provisions directly concerned with the protection of natural heritage and biodiversity.

The Wildlife Acts, 1976–2012 are the principal mechanism for the legislative protection of wildlife in Ireland. They outline strict protection for species that have significant conservation value. In summary, the Wildlife Acts protect species from injury, disturbance and damage to breeding and resting sites. All species listed in the Wildlife Acts must, therefore, be a material consideration in the planning process. The Flora (Protection) Order, (2015) gives legal protection to certain species of wild flora, *i.e.*, vascular plants, mosses, liverworts, lichens and stoneworts. Under the Order, it is an offence to uproot, damage, alter, or interfere with any species listed species listed within the Order, or to damage or alter their supporting habitats.

The European Communities (Birds and Natural Habitats) Regulations, 2011–2015 transpose into Irish law Directive 2009/147/EC (the Birds Directive) and the Habitats Directive, which list habitats and species of Community, *i.e.*, European Union (EU), importance for conservation and that require protection. This protection is afforded in part through the designation of areas that represent significant populations of listed species within a European context, *i.e.*, Natura 2000 sites. An area designated for bird species is classed as a Special Protection Area (SPA), and an area designated for other protected species and habitats is classed as a Special Area of Conservation (SAC). Birds listed in Annex I of the Birds Directive in SPAs and habitats and species listed in Annexes I and II, respectively, of the Habitats Directive in SACs in which they are designated features have full European protection. Species listed on Annex IV of the Habitats Directive are strictly protected wherever they occur, whether inside or outside European sites. Annex I habitats outside of SACs are still considered to be of national and international importance and, under Article 27(4)(b) of the

¹NPWS: <https://www.npws.ie/sites/default/files/publications/pdf/National%20Biodiversity%20Action%20Plan%20English.pdf>

European Communities (Birds and Natural Habitats) Regulations, 2011, public authorities have a duty to strive to avoid the pollution or deterioration of Annex I habitats and habitats integral to the functioning of SPAs.

Sites of national importance for nature conservation are afforded protection under planning policy and the Wildlife Acts, 1976–2012. NHAs are sites that are designated under statute for the protection of flora, fauna, habitats and geological interest. Proposed NHAs (pNHAs) are published sites identified as of similar conservation interest but have not been statutorily proposed or designated.

The International Union for the Conservation of Nature and Natural Resources (IUCN) provides a global approach for evaluating the conservation status of species to inform and catalyse action for biodiversity conservation through the Red List of Threatened Species.

1.3 APPROACH TO ECOLOGICAL EVALUATION AND IMPACT ASSESSMENT

Assessing impact significance is a combined function of the value of the affected feature (its ecological importance), the type of impact and the magnitude of the impact. It is necessary to identify the value of ecological features within the study area in order to evaluate the significance and magnitude of possible impacts.

The following parameters are described when characterising impacts (following CIEEM (2018), EPA (2017) and TII (2009, Rev. 2)):

Direct and Indirect Impacts - An impact can be caused either as a direct or as an indirect consequence of a proposed masterplan.

Magnitude - Magnitude measures the size of an impact, which is described as high, medium, low, very low or negligible.

Extent - The area over which the impact occurs – this should be predicted in a quantified manner.

Duration - The time for which the effect is expected to last prior to recovery or replacement of the resource or feature.

- Temporary: Up to 1 Year;
- Short Term: The effects would take 1-7 years to be mitigated;
- Medium Term: The effects would take 7-15 years to be mitigated;
- Long Term: The effects would take 15-60 years to be mitigated;
- Permanent: The effects would take 60+ years to be mitigated.

Likelihood – The probability of the effect occurring taking into account all available information.

- Certain/Near Certain: >95% chance of occurring as predicted;
- Probable: 50-95% chance as occurring as predicted;
- Unlikely: 5-50% chance as occurring as predicted;
- Extremely Unlikely: <5% chance as occurring as predicted.

The CIEEM Guidelines define an ecologically significant impact as an impact (negative or positive) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographic area. The integrity of a site is the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified (CIEEM, 2018).

The results of the ecological survey were evaluated to determine the significance of identified features located in the study area on an importance scale ranging from international-national-county-local. The local scale is approximately equivalent to one 10km square but can be operationally defined to reflect the character of the area of interest. Because most sites will fall within the local scale, this is sub-divided into three categories: high local importance, local importance, and local value. The criteria used for assessing the importance of ecological features are shown in Table 1.

Table 1 Criteria used in Assessing the Importance of Ecological Features

Importance	Criteria
International	An internationally designated site or candidate site (SPA, cSPA, SAC, cSAC, Ramsar Site, Biogenetic Reserve). Also, sites which qualify for designation as SACs or SPAs – this includes sites on the NGO shadow list of SAC's.
National	A nationally designated site or candidate site (NHA, pNHA). Sites which hold Red Data Book (Curtis and McGough, 1988) plant species.
County	Sites which hold nationally scarce plant species (recorded from less than 65 of the national 10km grid squares); unless they are locally abundant. Sites which hold semi-natural habitats likely to be of rare occurrence within the county. Sites which hold the best examples of a semi-natural habitat type within the county.
High Local Importance	Sites which hold semi-natural habitats and/or species likely to be of rare occurrence within the local area. Sites which hold the best examples of a high quality semi-natural habitat type within the local area.
Local Importance	Sites which hold high quality semi-natural habitats.
Local Value	Any semi-natural habitat.

2 METHODOLOGY

2.1 DESK STUDY

A desktop review was carried out to identify features of ecological importance within the proposed masterplan site and the wider environment. Ecological impact assessment is conducted following a standard source-pathway-receptor model, where, in order for an impact to be established all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism is sufficient to conclude that a potential effect is not of any relevance or significance.

- Source(s) – *e.g.*, pollutant run-off from proposed works.
- Pathway(s) – *e.g.*, groundwater connecting to nearby qualifying wetland habitats.
- Receptor(s) – qualifying aquatic habitats and species of European sites.

Specific focus was put into the assessment of sensitive receptors of protected species/habitat features; as well as those of local or national importance. A source is any identifiable element of the masterplan proposal which is known to have interactions with ecological processes. Pathways are any connections or links between the source and the receptor. This report determines if direct, indirect or cumulative adverse effects will arise from the proposed masterplan.

2.2 FIELD SURVEY

Data was collected during a walkover survey conducted on the 8TH of January 2021, with the support of baseline biodiversity data collected for the overarching Glenamuck District Roads Scheme (GDRS) project (planning ref. ABP-303945-19), over four dates in January and June 2018. The present data represents a walkover of the entire proposed Glenamuck Park site. A habitat survey of the site was conducted following standard guidelines set out in 'Best Practice Guidance for Habitat Survey and Mapping' developed by the Heritage Council of Ireland². Habitats were classified using habitat descriptions and codes published by the Heritage Council in 'A Guide to Habitat Types in Ireland'³. Plant species nomenclature follows Rose's 'The Wild Flower Key: How to identify wild flowers, trees and shrubs in Britain and Ireland'⁴. A list of the dominant and notable plant species was taken for each habitat type. Particular emphasis was given to the possible occurrence of rare or legally protected plant species (as listed in Flora Protection Order 1999) or Red-listed plant species (Curtis & McGough 1985, Wyse Jackson *et al.* 2016).

Observations were made for fauna species present or likely to occur on site. Emphasis was placed on mammals and birds, and especially for species listed in the respective Red lists, namely Colhoun and Cummins (2013), and Marnell *et al.* (2009). For mammals, the survey was focused on signs of their presence/activity, such as tracks, feeding marks and droppings, as well as any direct observations. For bats, the main focus was on evaluation of suitable habitats to support roosting bats; however, an ecological assessment of habitat suitability was undertaken throughout the site. The assessment process undertaken for bats followed the BCT Guidelines⁵. Chapter 4 of these guidelines identify the approach to assess 'preliminary ecological appraisal for bats'. This chapter sets out methods for identifying habitat suitability which do not constitute assumptions. Based on the information from the assessment the survey effort requirements are identified.

Bird species were recorded by sight and sound during a bird point count, following the Birdwatch Ireland Country Breeding Bird survey methods. In addition, all linear hedgerows were walked and species were recorded. Particular attention was focused on areas within the site of high ecological value that interact or overlap with parts of the proposal to increase biodiversity of the site and provide civil recreation.

² Smith, George F., *et al.* "Best practice guidance for habitat survey and mapping." The Heritage Council: Ireland (2011)

³ Fossitt, J.A., 2000. A guide to habitats in Ireland. Heritage Council/ Chomhairle Oidhreachta

⁴ Rose, F., O'Reilly, C., Smith, D.P. and Collings, M., 2006. The wild flower key: how to identify wild flowers, trees and shrubs in Britain and Ireland. Frederick Warne.

⁵ Collins, J. (ed.) 2016. Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

During all surveys, particular attention was given to assessing the presence of rare or protected species. Each species identified was assessed in term of the EU Habitat Directive (92/43/EEC), Bird Directive (2009/147/EC), the Wildlife Act (1976), the Wildlife Amendment Act (2000) and the Red Data Lists for threatened and protected species, published on the NPWS website (www.npws.ie).

2.2.1 LIMITATIONS

The biodiversity assessment was carried out in winter, which is not the optimum time for botanical and breeding bird surveys. However, the site is currently an urban agricultural site which is heavily managed and furthermore, the proposal aims to increase the biodiversity and ecological complexity of the site. The addition of access to the data from previous surveys carried out within the last two years (January and June 2018) for the partner GDRS project (planning ref. ABP-303945-19), which include a complete baseline biodiversity assessment of the site proposed (and surrounding areas), allows sufficient deduction to be made for the ecological impact of this proposal on the site. Therefore, overall, it is considered that there are no significant limitations to the present assessment of the ecological importance of the site.

3 PROPOSED GLENAMUCK PARK

The proposed development comprises a new public park located approximately 5.3 km from the coast, south east of the Golf Stream and west of the M50 motorway, with Carrickmines to the east of the site, and Kiltiernan to the south west (Fig. 1). More locally, the site is adjacent to Glenamuck Road South, between Glenamuck Road and the Glenamuck Link Distributor Road (GLDR); part of the approved Glenamuck Distributor Roads Scheme (GDRS) which is scheduled to commence construction in Autumn 2021.

The proposal comprises utilising soil excavated (approx. 23,000m³) from the Glenamuck District Roads Scheme, and disposing of it locally to create a visually interesting and landscaped park, including development of the attenuation pond installed into a suitable aquatic zone for marginal wetland plant communities (Fig. 2). The proposed park will include:

- Pedestrian pathways
- Cycleways
- 'Natural play-area'
- 'Kickabout area'
- 'Activity path'
- Substantial tree and shrub planting
- Wildflower/bulb planting



Figure 1 Location of the proposed Glenamuck Park, with Dingle Glen pNHA outlined in green.

The park location is proposed for land in Plots 26A and 27A in the Adopted Kiltiernan- Glenamuck Local Area Plan 2013⁶, which are agricultural lands that were specifically designated for "Open Space /Recreational Amenity", alongside the planned development of the GLDR.

⁶ Kiltiernan- Glenamuck Local Area Plan 2013, accessed at: <https://www.dlrco.ie/en/planning/local-area-plans/kiltiernan-local-area-plan>

The proposal includes the following alterations of the present site:

- Construction of a community area by utilising excavated fill material (approx. 23,000m³), and an attenuation pond, resultant from the approved GDRS project, to create a park of amenity value for recreation and local biodiversity.
- Alteration of on-site drainage.
- Construction of pedestrian pathways; cycleways; a 'natural play-area'; a 'kickabout area'; and 'activity paths'.
- Planting of trees, bulbs, scrub, and creation of a semi-wetland habitat.
- Pedestrian and cycle linkages to adjacent residential development and the GDLR.
- Operational Phase lighting within the proposed park area

The pedestrian and cycle routes will link to the Glenamuck Road, and the GDRS, and to the adjacent residential development at Rockville. The plan includes retention of several mature trees and hedgerows already present on site.

3.1 RECEIVING ENVIRONMENT

3.1.1 OVERVIEW

The proposed Glenamuck Park site lies within an area that consists predominately of suburban development, improved agricultural grassland, and pockets of mature broadleaf woods and hedgerows. The area as a whole provides a buffer between urban Dublin city, and progression to semi-natural/natural areas further south in the county. The typical semi-natural habitat of the local area surrounding the proposed site, *i.e.* hedgerows and broadleaf woodland pockets, is mature and well established, giving it a higher value as an area of ecological corridors and as part of a patchwork of locally important habitats.

3.1.2 ZONE OF INFLUENCE

The operational phase works are not anticipated to have any impacts beyond the plan boundary due to the proposed characteristics of the project and the existing use of the site (high intensity agricultural grazing). The construction phase works may have some effects beyond the boundary due to increased noise pollution, imposing of artificial lighting conditions and possible water quality effects to the surrounding area. Possible operational phase impacts could be lighting and drainage alteration. Following the source-pathway-receptor model identifying the potential likely sources a Zone of Influence (ZOI) was established; 2km radius around the proposed site. Given the nature of the proposed works, impacts are not foreseen to be significant beyond this distance. Only one protected area occurs within the 2km radius Zone of Influence (Fig. 1); Dingle Glen pNHA (site code: 001207) approx. 650M to the south-east of the site. Dingle Glen is a secluded mature broadleaf woodland, mixed with rocky outcrops, within a glacier meltwater channel, thus providing a diversity of habitats within a small undisturbed area. There are no hydrological pathways connecting the proposed site to Dingle Glen pNHA, nor are there any direct effects to the NHA foreseen as a result of the proposed development. There is indication of the previous existence of an old drainage ditch running through the site from north west to south east. However, any previous freshwater line is long out of use as there has been sufficient time period to allow merging of similar soil saturation to allow equal species establishment in line with the rest of the surrounding improved grassland habitat.

3.1.3 DESIGNATED AREAS

In accordance with the European Commission Methodological Guidance (EC, 2001), a list of European Designated Sites that can be potentially affected by the works has been compiled. A dedicated Appropriate Assessment Screening, reviewing all European sites within the zone of influence of the project, was undertaken. A review of the conservation objectives and qualifying interests of these sites was undertaken in order to identify what habitats and/or species could be vulnerable to risk of impact from the proposed masterplan. This was done by assessing whether any source receptor links existed between the qualifying interests of the designated sites and the proposed site.



Figure 2 Landscape Masterplan of the proposed Glenamuck Park⁷

⁷ Courtesy of Cunnane Stratton Reynolds Land Planning and Design.

When assessing ecological impacts, the CIEEM Guideline recommend a 15km zone of influence as an adequate buffer for effects. Due to the characteristics of the project, all other Natura 2000 sites and pNHA/NHA sites beyond threshold distances of 15km are considered to be of sufficient distance from the proposed site, that no significant effects could be caused either directly or indirectly or in combination with other plans or projects to their interest features. Any impacts caused by the Glenamuck Park development have no valid impact pathway to transfer along to reach any of the receptor interest features. These sites are 'screened out' and not considered further.

In addition to examining European sites, NHAs and pNHA have been considered. Although NHAs and pNHAs do not form part of the Natura 2000 Network, they often provide an important supporting role to the network, particularly when it comes to fauna species which often do not obey site boundaries. There are however, NHAs and pNHAs that are designated for features that are not important at an international level and thus may not interact with the Natura 2000 network.

A stand-alone Screening Report submitted separately to this assessment, expands on the potentially affected designated sites and their conservation objectives in more detail.

Appendix I provides a list of all of the designated sites considered within the assessment arranged by distance from the proposed Glenamuck Park which are assessed as part of this report. Figure 3 displays the designated sites within a 15km radius buffer of the proposed project. The proposed site has no hydrological pathways connecting it to the nearby Dingle Glen pNHA, or the coast line, or any Natura 2000 sites within the 15km buffer zone considered in the accompanying Appropriate Assessment.

3.1.4 RECORDS OF PROTECTED, RARE OR OTHER NOTABLE FLORA AND FAUNA SPECIES

The digital database of the National Biodiversity Data Centre (NBDC) was consulted to assess known records of rare, protected and invasive species that occur in the surrounding landscape. The collation of this information, as well as examination of aerial photographs allowed areas of potential ecological importance to be highlighted prior to field survey work. A search was undertaken of records of Red Data Book and Protected species held by the National Biological Data Centre Database. A list of the rare and/or protected species from the 10km x 10km grid square occupied by the study area (O22) are listed in Appendix II (NBDC data, accessed: 11th January 2021).

3.1.4.1 Invasive Flora Species

Publicly available NBDC data was accessed to identify invasive species in the hectad in which the proposed site is located (O22). Nine of the flora species and four of the fauna species listed in Appendix II are subject to restrictions (Third Schedule) under Regulation 49 of the European Communities (Birds and Natural Habitats) Regulations, 2011.

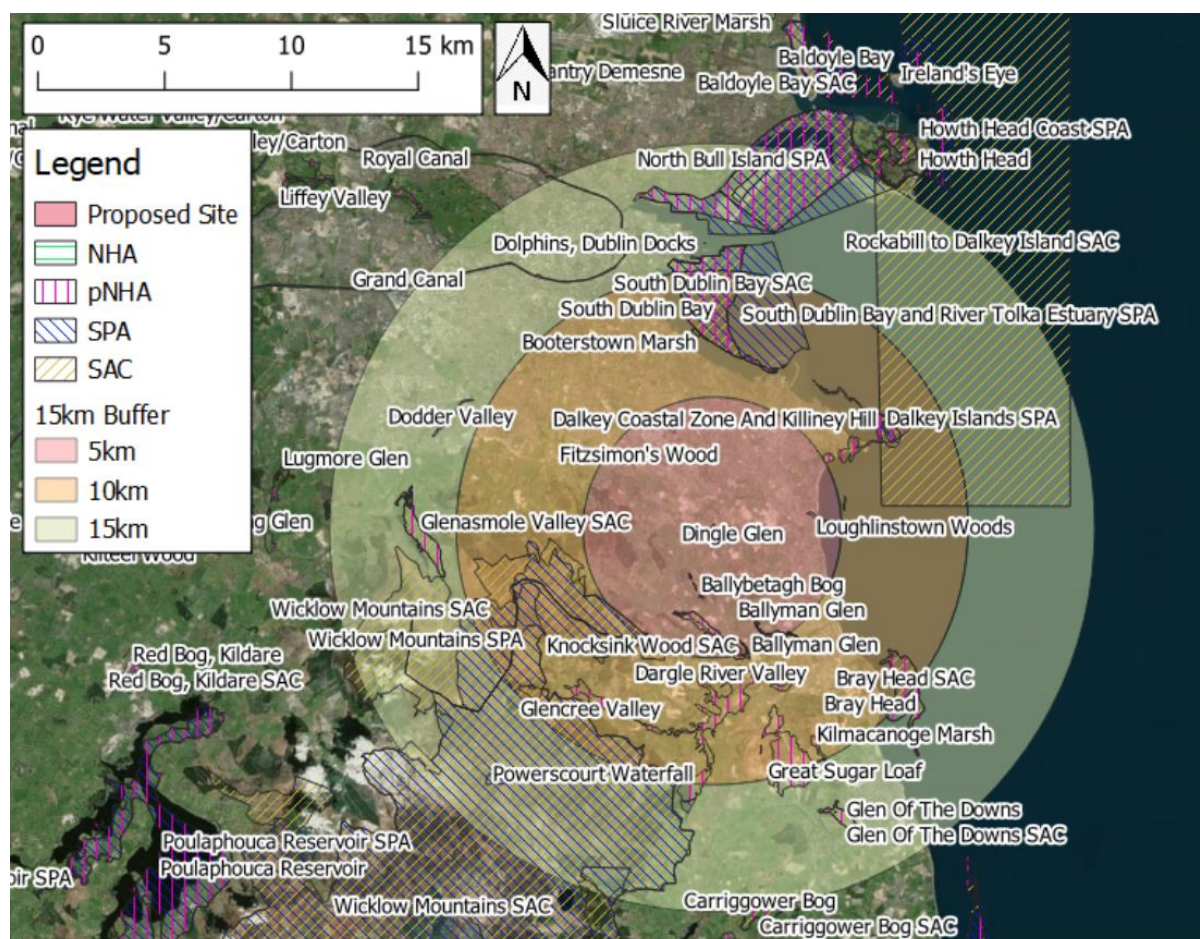


Figure 3 Natura 2000 sites, pNHAs and NHAs within 15km buffer of the proposed Glenamuck Park.

3.1.5 FIELD SURVEY RESULTS

3.1.5.1 Habitats and Flora

No Annex I habitats were found on site. Some of the habitats present on site are of high local importance in terms of support for local biodiversity, resource availability, and ecological connectivity across an urban landscape to other pockets of area of ecological value (in particular Dingle Glen pNHA).

Habitats on site are typical of suburban agricultural land, interspersed with habitats of local value. The site is mainly composed of improved agricultural grassland (GA1). However, several other habitats were recorded on site, some of significant local value for biodiversity, including: treelines (WL2); scrub (WS1); stone walls and other stonework (BL1); drainage ditch (FW4), a small portion of mixed broadleaved woodland (WD1), buildings and artificial surfaces (BL3) and earth banks (BL2). A comprehensive habitat map of the proposed site is supplied in Figure 5, and a description of each of the habitats identified on site along with a species list for each can be found in Appendix III.

The majority of the site is comprised of habitat that is of low local importance ecologically (GA1). However, the site does contain pockets of habitats that are of high local importance (WD1, BL1). Preservation of the mature trees on site, in particular those which comprise WD1 along the north stone wall, including significant pieces of deadwood, is important as a well-established corridor for local wildlife.

Floral species recorded on site during the Jan 2021 visits are consistent with what is expected of high intensity, agricultural grassland habitats, utilised for grazing. The majority of the site consists of

perennial ryegrass, interspersed with patches of common thistle, plantain and red and white clover. Within the main ryegrass area of the site there are two small stands of immature trees of hawthorn and hazel. Within the understory of the mature trees on the north western border, species such as herb-robert, common ivy, holly, bramble, lords and ladies, and gorse were observed. Again, the time of year should be taken into consideration as many plant species will not be apparent so early in the year. Reeds and club rushes were also observed in a water-logged area containing a drainage ditch, around which a wildlife pond is proposed as part of the park development.

No invasive species were found on site during this January site visit; however, the time of year should be taken into account as not wholly representative of discounting the presence of invasive species on site. The EIAR for the GDRS surveyed the wider area as a whole for invasive species in 2018 (under SI No. 477 of 2011) and found the following species: Japanese Knotweed (*Fallopia japonica*), Giant Hogweed (*Heracleum Mantegazzianum*), Giant Rhubarb (*Gunnera tinctoria*) and Three-cornered Garlic (*Allium triquetrum*) – the locations of which are provided in an extract from the 2018 report in Figure 4. No invasive species were recorded within the proposed site in 2018. However, given the speed of increase of spread of invasive species, and almost certain trajectory of increasing, standard best practice measures in line with Invasive Species Ireland guidance should be implemented for all construction and operational phases of the proposed park.

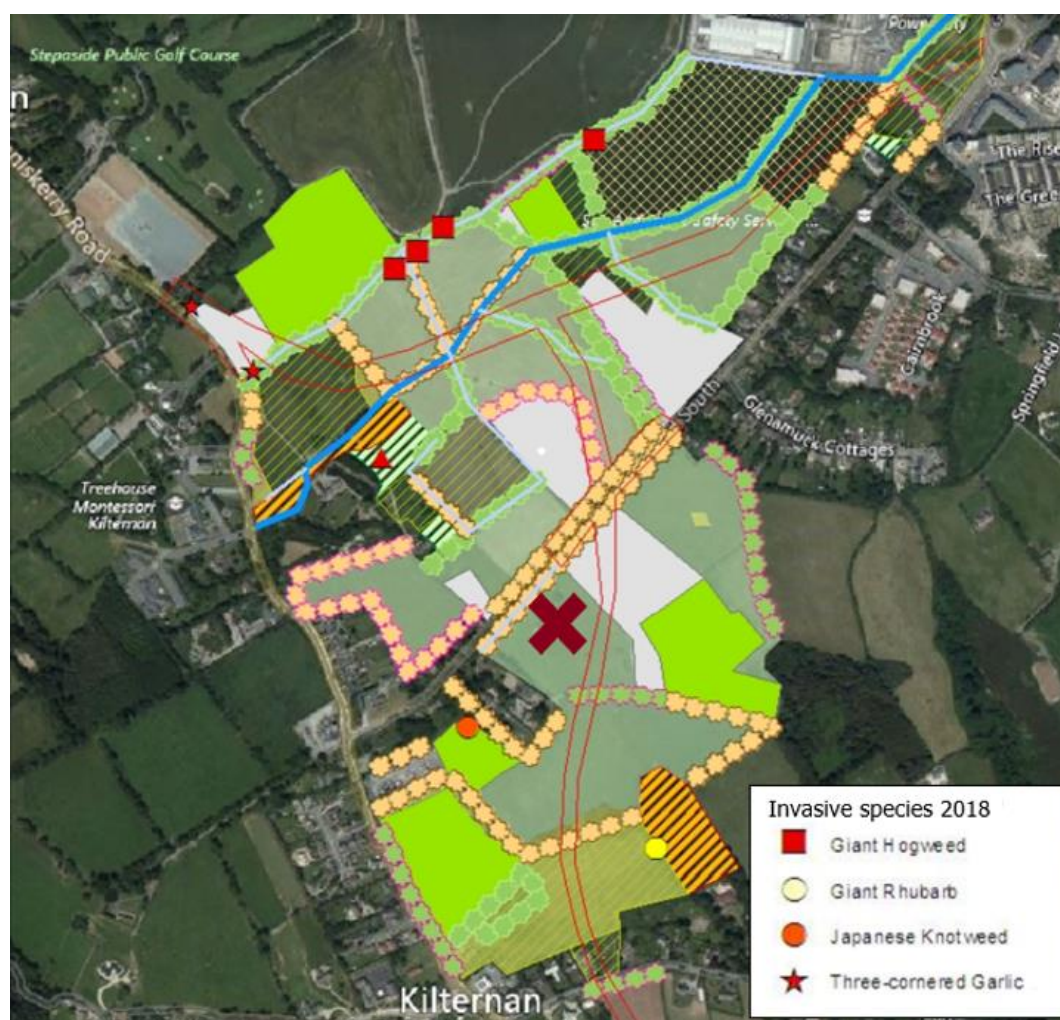


Figure 4 Invasive alien species recorded in the wider Glenamuck area.⁸

⁸ From Carrickmines (North-East) to Kiltarnan (south). Red X denotes proposed Glenamuck park location. (Map courtesy of Dun Laoghaire-Rathdown County Council – extract from GDRS EIAR, 2018)



Figure 5 Habitat map of the proposed Glenamuck Park site

3.1.5.2 Fauna

Mammals

Non-volant mammals

Evidence of potential use of the site by badger was present, in the manner of foraging trails, however no evidence of residence of badger was found on site. The suspected foraging trails were mainly evident along the mature woodland border of the site, along the north stone wall. These are most likely connectivity paths used when foraging or moving through territory – indicating the importance of the site as an ecological corridor for larger mammals.

The site has the potential to support species such as red squirrel, hedgehog, and pygmy shrew, however, given that the majority of the site is currently used as low value agricultural pasture, it is most likely utilised only as a corridor to more significant patches of suitable habitat, via the small area of woodland habitat on the north western boundary of the site (Fig. 5).

The proposal to enhance the biodiversity and habitats of this site would most likely stand to at least preserve the current standard of habitat, and likely enhance it, for foraging for these mammal species in the local area.

Bats

Previous EIAR baseline surveys of bat species for the GDRS (which encompasses the proposed Glenamuck Park site), carried out in January and June of 2018 found “8 species of bat noted within the area with evidence of roosts of not less than 3 species in close proximity to the [GDRS] route. No roosts were noted within the land-take.”. Significant hedgerows and mature tree lines are present within the proposed site, and in the surrounding area, which are important commuting pathways and foraging areas for bat species.

The current assessment examined trees on site for bat roost potential, and found that there are mature, well established trees present, in particular along the north stone wall (approx. 25 mature trees were counted along the north western stone wall as of January 2021, Figure 5), some of which have the potential to support minor bat roosts. However, it is determined in this assessment, that further bat acoustic surveys to assess these trees for the presence of roosts are not required for the following reasons:

- The implementation of mitigation measures for the protection and preservation of the mature trees and corridors found on site, as well as suitable best practice operational phase management of night lighting, will be recommended to ensure the retention of the current value and integrity of the site for local bat species.
- The proposal aims to preserve mature trees on site, and increase overall biodiversity.
- Previous comprehensive bat surveys carried out within the previous two years of the current proposal confirmed the presence of 8 out of the 9 species of bats which occur in Ireland utilising the area for foraging and roosting – thus it can be deduced that the site is of high local value for bat species, specifically the strip of mature woodland on the northwest wall.

The proposed project includes measures to improve the site condition for bats; via planting of additional trees and shrubs, grassland areas, floral diversity and development of a freshwater pond – all of which will bolster the invertebrate populations which the bats prey on, and increase the ecological integrity, and hence stability, of the site overall. These factors, combined with the preservation of mature trees currently on site, renders the project of negligible impact in the short to long term. There may be some disturbance to the commuting and foraging of bats during construction, but this will be short term and temporary, and will take the form of noise and air quality disturbance. Mitigations measures such as appropriate lighting hours and noise restrictions will be detailed in the accompanying CEMP, and will contribute to minimising the impact to bat species during construction phase. Operational phase effects are predicted to only be positive long term.

Birds

All of the trees present within the site have high potential for nesting breeding birds – in particular, the small but locally important area of mature diverse woodland along the north stone wall. This area also contains significant ivy, holly, a developed litter layer, significant dead wood, some herbaceous plants, and minor reed bed habitat. Thus, this is a small pocket of diverse micro habitats underneath the mature trees that is essential to supporting local breeding birds for nesting and foraging. There are no available resources for nesting wading birds due to the very small extent of freshwater habitat available, and the high level of use of the majority of the site for high intensity agricultural grazing; significant poaching from cattle was observed throughout the site.

A pair of Common Buzzards were observed circling and calling above a small patch of broadleaf woodland approximately 150m north east of the site, for approximately 10 minutes. They subsequently flew into the site area and perched on the pylon present within the site. The pair then moved off into the patch of broadleaf woodland that lies to the south east of the site, that is also in close proximity to the Druid's Glen NHA.

A bird point count focused on passerines was conducted on site, for a duration of 15 minutes – in addition to this, bird species seen and heard were recorded on a walk along the stone wall to the north; the results of which are presented in Table 2.

Table 2 Bird species recorded on site during a bird point count and treeline walk survey⁹

Species	Scientific Name	Heard	Seen
Blue tit	<i>Cyanistes caeruleus</i>	Y	Y
Great tit	<i>Parus major</i>	Y	Y
Common chaffinch	<i>Fringilla coelebs</i>	Y	Y
Robin	<i>Erithacus rubecula</i>	Y	Y
Blackbird	<i>Turdus merula</i>	Y	Y
Wood Pidgeon	<i>Columba palumbus</i>	Y	Y
Pied wag tail	<i>Motacilla alba yarrellii</i>	Y	Y
Magpie	<i>Pica pica</i>	N	Y
House sparrow	<i>Passer domesticus</i>	Y	Y
Hooded crow	<i>Corvus cornix</i>	Y	Y
Wren	<i>Troglodytes troglodytes</i>	Y	Y
Starling	<i>Sturnus vulgaris</i>	Y	Y
Common Buzzard	<i>Buteo buteo</i>	Y	Y

It is noted here that January is not the optimum time of year to survey breeding bird populations. Thus, this assessment is augmented with the baseline surveys of the EIAR for the GDRS carried in January and June 2018. All species, bar one, from the 2018 surveys were as expected on the site, and on the Green List of BirdWatch Ireland¹⁰. The barn swallow, of amber conservation concern, was recorded in the wider area in 2018 also foraging over agricultural land.

The proposed project may have short term, low levels of disturbance to these species during construction phase (via noise and air quality disruption), but will have long-term positive impacts overall for local populations of these species. This is due to the nature of the proposal and aim to augment the current condition of site with native trees, flora and a pond, that will add to the diversity and quality of baseline breeding bird habitat (Fig. 2). It is however recommended to preserve mature trees along the northern stone wall as it is an area that is small in size, but significant in resources, and thus high value, for local breeding birds.

⁹ 8th Jan 2021

¹⁰ Colhoun K. & Cummins, S. 2013. Birds of Conservation Concern in Ireland 2014-19. Irish Birds 9:523-544

Protected Fish, Amphibians & Reptiles

A small body of freshwater in the form of a drainage ditch, was identified on site, and is bordered by club rush and reeds and surrounded by waterlogged, heavily poached agricultural pasture. This area is to be converted into a biological pond as part of the proposed project, and thus only positive impact is foreseen for freshwater habitats and potential freshwater species on site. The site does not currently have suitable habitat for the common lizard.

3.1.6 SUMMARY OF ECOLOGICAL EVALUATION AND RECOMMENDATIONS

Overall, the site of the proposed Glenamuck park currently has low local importance in terms of ecological value; but contains one patch of mature woodland that is of high local importance to local bird, bat, non-volant mammal and insect life. The suburban context of the site, and surrounds of mature hedgerows and woodland pockets, makes this an isolated resource that acts as an essential ecological stepping stone for bird, bat and mammal species. The proposed project aims to enhance the local biodiversity, habitats, ecological connectivity, and amenity value of the site. However, considering the importance of the mature woodland along the north western stone wall within the surrounding landscape, it is recommended to preserve the majority of mature trees along the northern border stone wall. This preservation will mitigate against loss of valuable connectivity habitat, and enhance the ecological value of the project itself.

As the woodland patch has been identified as a key ecological resource for the area, particularly as a commuting resource for bat species, isolation of the woodland from the general public and excessive lighting is a key consideration for potential impacts. It is important to consider operational phase lighting and the general park amenity/pedestrianised zones in the context of this ecological corridor. The mitigation measures set out below, aim to minimise visitor access to this woodland, with a lighting regime sensitive to the above identified sensitivities. The lighting and civilian access through the patches of woodland have been specifically constrained by features such as cowled directional lighting of low lumens, and importantly lighting restricted in height to prevent fragmentation of this high local value habitat for bat populations (see below for further details).

The proposed project potential for short term impacts to bird and bat populations but of very low magnitude. The project will most likely have a long-term positive impact for local biodiversity in terms of enhancing resources and habitat for local populations of birds, bats and insects, and bolstering habitat connectivity with the surrounding pockets of woodland and high value habitat.

4 POTENTIAL IMPACTS

Based on the baseline ecological environment and the extent and characteristics of the proposed masterplan the following potential impacts have been identified:

1. Augmentation of existing habitats, as well as the potential removal of trees;
2. Construction and earthworks;
3. Lighting during construction and operation; and
4. Noise and vibration.

These 4 potential impacts are addressed below:

1. Augmentation of existing habitats, as well as the potential removal of trees;
The removal of vegetation on site has potential to negatively impact breeding bird populations; however, the implementation of the project will result in a net gain of tree cover and therefore there will be no long-term negative impact. No vegetation will be removed during the breeding bird season (1st March to the 31st of August).
2. Construction and Earthworks;
Elements of the proposed Glenamuck Park that have potential to interact with existing habitats which have been identified to have high local importance; such as the potential removal of mature trees. There is a need to reduce any unnecessary habitat augmentation outside of that which is detailed in the plan. Therefore, all work which propose the removal of any higher order plants or tree, will have to produce a methods statement for the tasks; ensuring:
 - ✓ No vegetation is removed beyond the minimum required to complete the task.
 - ✓ Vegetation removal will occur outside of the breeding bird season, with due regard given to other species such as winter waders (where relevant).
 - ✓ Timing of works will be as brief as possible to minimise potential disturbance effects;
 - ✓ Dust and debris control measures be implemented where relevant - however, given the scale and nature of the proposed works there are no significant sources for potential effects in this regard.
 - ✓ Any significant deadwood found on site is to be left where possible to enhance the ecological value of the site and the proposed project.
 - ✓ All method statements must be agreed and signed off by a suitably qualified individual and where required an Ecological Clerk of Works will be appointed to oversee works.
3. Lighting during construction and operation;
Strong lighting in the area of the proposed project could impact species that use the site for foraging and commuting if not carefully controlled. Bats, other mammals, and birds would be sensitive to any significant changes in lighting within semi-natural habitat within the parkland and the marsh area to the north.
Construction phase lighting will need to be controlled to minimise light pollution as a matter of good practice – for example: via the implementation of lights out hours when construction is not active on site (evening and night hours), and the use of low UV, directional lighting.
As the operational phase will consist of more permanent lighting, a series of mitigation measures are recommended below in Section 5 to reduce potential impact on the quality of foraging and commuting habitat for bats.
4. Noise/vibration
The construction phase and movement of heavy vehicles across the site could cause localised disturbance of breeding birds and wading birds that may use the habitats within the site area. Most of the construction phase works are small scale clustered at the main entrance to the site, and in the central area which is monoculture agricultural pasture. The location of the site entrance and spoil storage and take areas, in relation to the key habitats identified in this report, will minimise potential impacts from disturbance effects. This would be expected to

have a probable, significant short-term impact at a local level but there is likely to be an existing degree of habituation to regular traffic on the site so this impact may not be across the whole site. As there are no significant or long-term impacts identified there are no mitigation measures required, best practice construction methods relating to noise pollution controls will be sufficient to minimise potential impacts. The operational phase noise levels will be consistent with existing conditions of intermittent development works in the surrounding zoning lands.

An assessment of the project detail outlined in Section 3 indicates the potential impacts to biodiversity are predominantly associated with construction phase works, which are temporary/short term. There will be a number of ecological improvements with regard to increased floral abundance and diversity which will support a wider array of species, as well as augmented tree planting to increase the overall tree cover across the site, and creation of a pond. There may be the permanent removal and loss of trees in some areas of the site. However, these works are minor in extent and will only be carried out if completely necessary. The long-term impact of the proposed site is positive for the ecological integrity and biodiversity of the site itself, and for supporting local wildlife populations.

4.1.1 POTENTIAL IMPACTS ON DESIGNATED SITES

The AA Screening Report sets out the likelihood and significance of any potential impacts on European designated sites. There are no significant adverse effects foreseen to be likely to affect the ecological integrity of any European sites. There is one NHA within the zone of influence of the project: Dingle Glen pNHA, approx. 650m to the south east. However, there are no hydrological links with the proposed site. In addition, the NHA most likely stands to benefit from a proposal to increase the ecological value and biodiversity of a nearby location.

The localised nature of the potential effects arising from the proposed project, and the absence of hydrological pathways, ensure there will be no interaction with the ecological integrity of any of the NHAs, SACs or SPAs considered in the assessment, that are listed in Appendix I. None of the proposed characteristics of the project will impose additional threats to this site due to the scale, temporary and nature of the construction and operational phase elements of the project, and the distances identified.

5 MITIGATION MEASURES / MONITORING

The proposed site has been identified to have an overall low local ecological importance due to the majority of high intensity agricultural pasture within the site, and the suburban landscape context. However, there are habitats present on site which were identified as high local importance during the walkover survey of January 2021; namely a small linear patch of mature woodland (consisting of approx. 25 mature native trees) along the northern stone wall site boundary.

Overall, it is assessed that the implementation of the proposed project will have a net gain in terms of the ecological resources present and current levels of biodiversity. However, mitigation measures are required to ensure that all potential impacts are minimised. Considering the four key impacts identified above; the following mitigation measures have been devised to reduce and/or avoid these impacts:

- No vegetation will be removed during the breeding bird season (1st March to the 31st of August); where it is necessary to remove vegetation within this time period a project specific derogation licence will be sought from the NPWS.
- All work which proposes the removal of any higher order plants or trees, will have to produce a methods statement for the task(s); ensuring:
 - ✓ No vegetation is removed beyond the minimum required to complete the task.
 - ✓ Vegetation removal will occur outside of the breeding bird season, with due regard given to other species such as winter waders (where relevant).
 - ✓ Timing of works will be as brief as possible to minimise potential disturbance effects.
 - ✓ Dust and debris control measures be implemented where relevant; however, given the scale and nature of the proposed works there are no significant sources for potential effects in this regard.
 - ✓ All method statements must be agreed and signed off by a suitably qualified individual and where required an Ecological Clerk of Works will be appointed.
- All on site lighting during construction will be directional cowled lighting. The light source will be the minimum standard for safety purposes for the intended purpose. All construction site lighting will be powered down when the site is not operational.
- The project's operational phase lighting plan includes a measure to provide a dark zone within the identified high local value mature woodland patch (Figure 5) along the north-western boundary of the proposed park, to preserve the local value of the patch for foraging or roosting bats. All lighting within the wider park will be implemented and managed with consideration for the current best practice guidelines for local bat species.
- An Ecological Clerk of Works (ECoW) will be appointed to ensure all on site construction lighting aligns with the conditions set out above, in advance of their installation/use, and to identify the vegetation clearance is avoiding any higher order plants or tree. The ECoW will be responsible for the checking the rationale for removal, the methods statement and timing of works. Any deviation from the environmental envelope identified in this EcIA will be reported to the DLR Biodiversity officer.
- 30m buffer between stone wall and amenity / pedestrian zones of proposed park to protect high local value mature woodland pocket to the north of site – with the exception of planned access pathways for the park from Glenamuck road; along these pathways there should be fencing and signage indicating restriction from the mature woodland to protect local biodiversity and give refuge for local species of bird and mammal.
- Considering the well-established corridor of mature woodland to the north west of the site, all on site lighting during the operational phase should have consideration for the following elements:
 - ✓ UV levels of the lighting installed: very low level or zero UV is preferential, as this has the least effect on insect activity, and thus the minimal interruption to bat foraging

- possible: Low Pressure Sodium (SOX) is preferable, as it is emitted at single wavelengths, with very low UV emitted. (BCI, 2010¹¹; Stone, 2013¹²)
- ✓ Direction of lighting: housing to reduce the angle of the beam to below 70 degrees
 - ✓ Height and spacing of lighting: to reduce spread and reach (i.e., reduce light pollution) of artificial light into the surrounding environment. E.g., for the two pedestrian pathways that lead through the high local value woodland of the park, lamps should be kept to 1-1.5m. This will significantly reduce spread of light for foraging bats at night (BCI, 2010¹³; Stone, 2013¹⁴) within this key ecological area of the site.
 - ✓ Where possible, lighting can be dimmed or switched off at night or during periods of low human activity, by implementing variable lighting regimes controlled remotely by CMS (central management system) units (BCI, 2010¹⁵; Stone, 2013¹⁶).

The absence of the application of the above mitigation measures would render the project having the potential to have significant adverse effects on a habitat of high local importance within the site area. It is thus recommended to implement these measures as part of the proposed project to avoid potential impacts to the ecological integrity of the site.

5.1 CUMULATIVE IMPACTS

This being an urban parkland there are numerous other proposed projects in the vicinity including works which are at planning stage or underway on various sites. Plans of relevance in the context of this proposal include:

- Dun Laoghaire Rathdown County Development Plan 2016 -2022;
- Kiltiernan- Glenamuck Local Area Plan 2013; and
- Transport Strategy for the Greater Dublin Area 2016-2035.

A review of the DLR Co. Co. planning database for projects within the scheme area (200m radius from the site redline boundary) over the past 5 years identified that the projects within the area are small scale works predominantly relating to the alterations of existing structures. However, two stand-alone large housing developments have been granted permission within 200m of the site in the last 5 years:

- Planning ref. D17A/0793: construction of a total of 49 no. dwellings consisting of 37 no. detached, semi-detached and terraced 2/3 storey houses and 12 no. apartments; and
- Planning ref. ABP30397819: strategic housing development consisting of the construction of 203 residential units comprising; 30 houses and 173 apartments, within 12 blocks up to 6 storeys.

All other construction and infrastructure work in the local area are small in scale and best practice construction measures will also be implemented for each. Due to the scale and nature of the proposed works there are no significant adverse effects identified as a result of the implementation of the proposed Glenamuck Park. On this basis, assessment guidance (CIEEM, 2018) indicates that there is no need to consider cumulative effects. However, taking a precautionary approach, relevant plans and projects (as listed above) have nonetheless been reviewed and assessed.

These large permitted developments listed above are part of the local area plan for strategic housing development within the community, and will follow best practice construction measures and CEMPs. These developments will increase cumulative impacts of the proposed project but only during the

¹¹ Bat Conservation Ireland (2010) Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers

¹² Stone, E.L. (2013) Bats and lighting: Overview of current evidence and mitigation

¹³ Bat Conservation Ireland (2010) Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers

¹⁴ Stone, E.L. (2013) Bats and lighting: Overview of current evidence and mitigation

¹⁵ Bat Conservation Ireland (2010) Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers

¹⁶ Stone, E.L. (2013) Bats and lighting: Overview of current evidence and mitigation

construction phase, and, given the overall long-term positive impacts of the proposed project, the overall cumulative impacts for local biodiversity as a result of the proposed project are negligible. The Glenamuck District Road Scheme (GDRS) scheme has potential for ecological impacts on the integrity of the surrounding ecological environment. The scheme receives its own separate assessment, but potential for cumulative impacts of this scheme with the current proposal is considered here. As the current proposal will have negligible short-term impacts on the ecological integrity of the surrounding environment, and will increase the biodiversity and ecological value of the site and the local area long term, it is not considered in this assessment that there will be any cumulative impacts with the GDRS scheme on the ecological integrity of the site or surrounding environment.

6 RESIDUAL IMPACTS

Given the nature of the works proposed, there will be a net gain in terms of the ecological integrity of the site due to the increased tree cover, maintenance of existing habitat and introduction of increased floral and micro habitat diversity across the site. Following the management and mitigation measures detailed above, appropriate operational lighting design, and the comprehensive methods statements for vegetation removal works, the potential impacts to the flora and fauna of the existing environment are foreseen to be very low to negligible, and of a short-term duration. The characteristics of the development detailed above indicate that any potential residual impacts will be localised, due to the magnitude of works being undertaken, and on the majority positive for the long-term biodiversity and ecological integrity of the site. Therefore, the overall status of the site as low local importance is expected only to increase as a result of the proposed project.