ECOLOGICAL SURVEY OF A PROPOSED BELGARD ROAD TO COOKSTOWN LINK ROAD AT BELGARD SQUARE NORTH, DUBLIN 24

Prepared October 2017 by on behalf of South Dublin Co. Council by:

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Non-technical Summary

South Dublin County Council (SDCC) is in the process of considering the provision of a new link road between Belgard Square North and Cookstown Road. This report comprises the findings of a flora and fauna survey carried out during October 2017 in order to assess the baseline ecology of the site. The overall objective this work was to identify key habitats and species and to assess and prioritise these on the site through:

- Establishing species of flora and fauna present within the area; and
- Identification and assessment of the presence and status of protected species in particular who inhabit or travel through the site or are using the biodiversity resources on the site.

The surveys carried out included:

- Establishing baseline habitat details regarding the natural, semi-natural, and modified habitats in the study area;
- Establishing baseline details of the numbers and types of flora and fauna species, in particular, the presence and/or use of the area by species that are projected under the Wildlife and Birds Directives, and invasive species of flora and fauna;
- Establishing the flora species present within the study area and in particular any species protected under the 1999 Flora Protection Order or listed on the Red Data List of Irish Plants. These are to be mapped and recorded. The presence of pest species is to be mapped and recorded with recommendations for their control to be included in the report;
- Identification of any populations of Alien Invasive Plant Species listed on Part (1) of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 and mapping of any such populations;
- Preparation of a general habitat map, compatible with ArcGIS, presenting the distribution of all habitat types within the study area to Level 3 habitat category;
- Identification and highlighting of specific areas of high potential biodiversity or conservation interest, identifying those areas which could act as important ecological corridors both within and outside of the study area; and
- Provision of habitat and species data in an agreed database format so as to facilitate its direct transfer to the planned South Dublin County Biodiversity Database and the National Biodiversity Data Centre.

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1 Introduction

1.1 FERS Ltd. company background

Forest, Environmental Research and Services have been conducting ecological surveys and research since the company's formation in 2005 by Dr Patrick Moran and Dr Kevin Black. Dr Moran, the principal ecologist with FERS, has a 1st class honours degree in Environmental Biology (UCD), a Ph.D. in Ecology (UCD), a Diploma in EIA and SEA management (UCD) and a M.Sc. in Geographical Information Systems and Remote Sensing (University of Ulster, Coleraine). Dr Moran has in excess of 15 years of experience in carrying out ecological surveys on both an academic and a professional basis. Dr Emma Reeves, senior ecologist with FERS has a 1ST class honours degree in Botany and a Ph.D. in Botany. Dr Reeves has over 10 years of experience in undertaking ecological surveys on an academic and professional basis. Ciaran Byrne, a Junior Ecologist with FERS holds a first class honours degree in Environmental Management (DIT) and a M.Sc. in Applied Science/Ecological Assessment (UCC).

FERS client list includes National Parks and Wildlife Service, Teagasc, An Bord Pleanála, the Office of Public Works, various County Councils, the Heritage Council, University College Dublin, the Environmental Protection Agency, Inland Waterways Association of Ireland, the Department of Agriculture, Coillte and Drogheda Port Company in addition to numerous private individuals and companies.

1.2 Background description of proposed link road

South Dublin County Council (SDCC) is in the process of considering the provision of a new link road Belgard Square North to Cookstown Road. The proposed new link road is approximately 100 metres in length and the width varies between 2 metres and 14 metres. The scheme extends through a disused industrial site. The Scheme proposes clearing all vegetation from the road corridor and excavating to a level determined by geotechnical engineers to build the road (Typically 750mm-1250mm deep). The location of the industrial estate site is indicated in Figure 1, Figure 2, Figure 3 and Figure 4. The survey area within the industrial estate site is indicated in Figure 5. Draft plans for the road scheme are illustrated in Figure 6. In October of 2017, FERS Ltd was commissioned to provide an ecological survey of the survey area within the industrial estate site. It must be noted that the scope of the flora and fauna survey was limited by the sub-optimal timing of the survey.

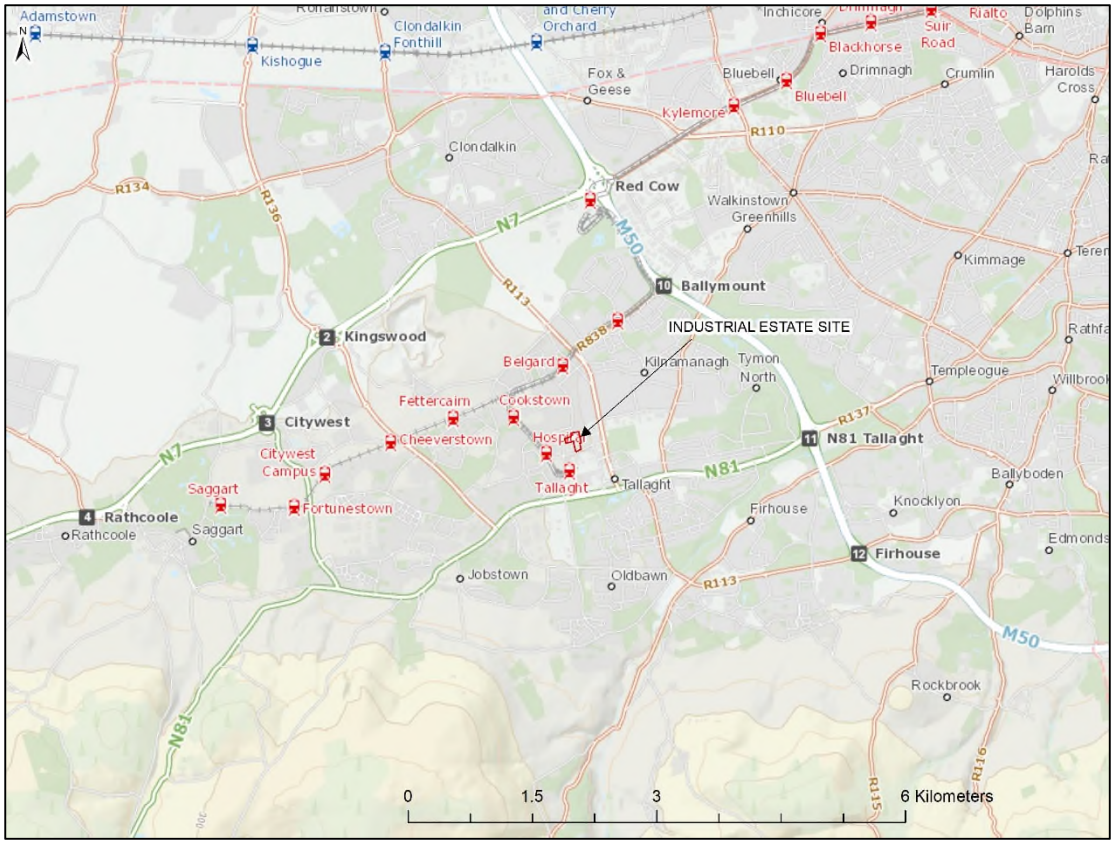

Figure 1: Approximate location of industrial estate site (1:50,000)

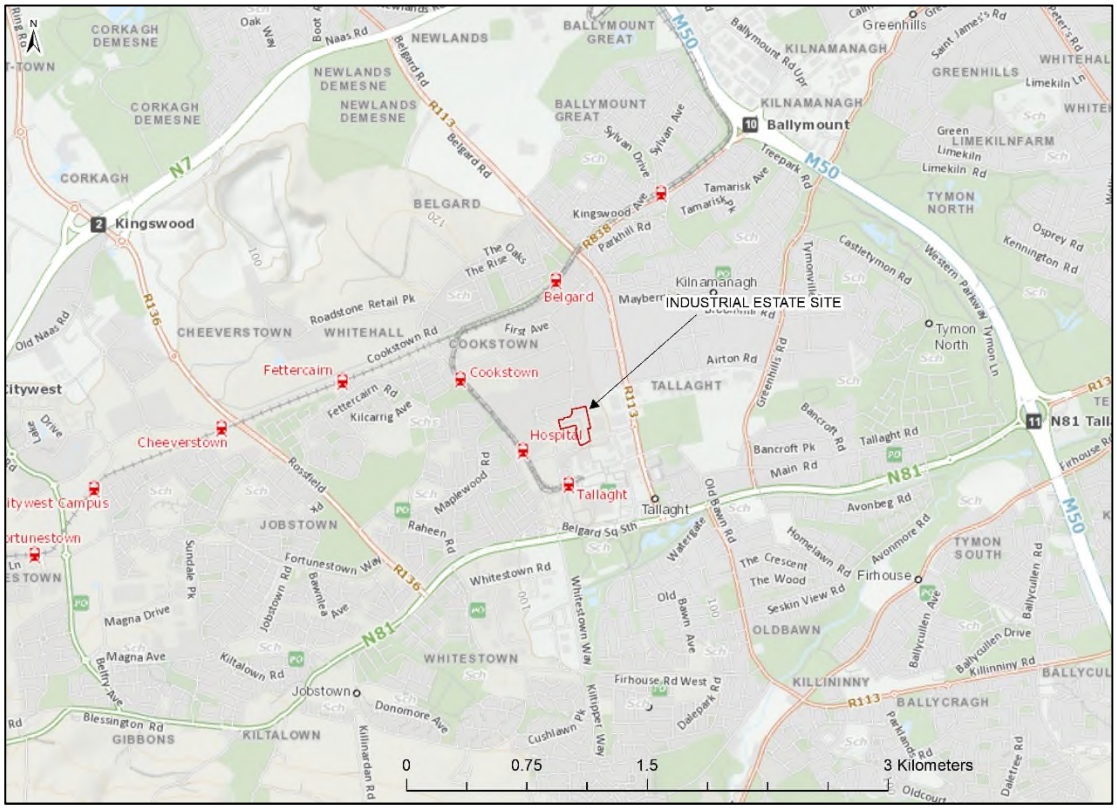

Figure 2: Approximate location of industrial estate site (1:25,000)

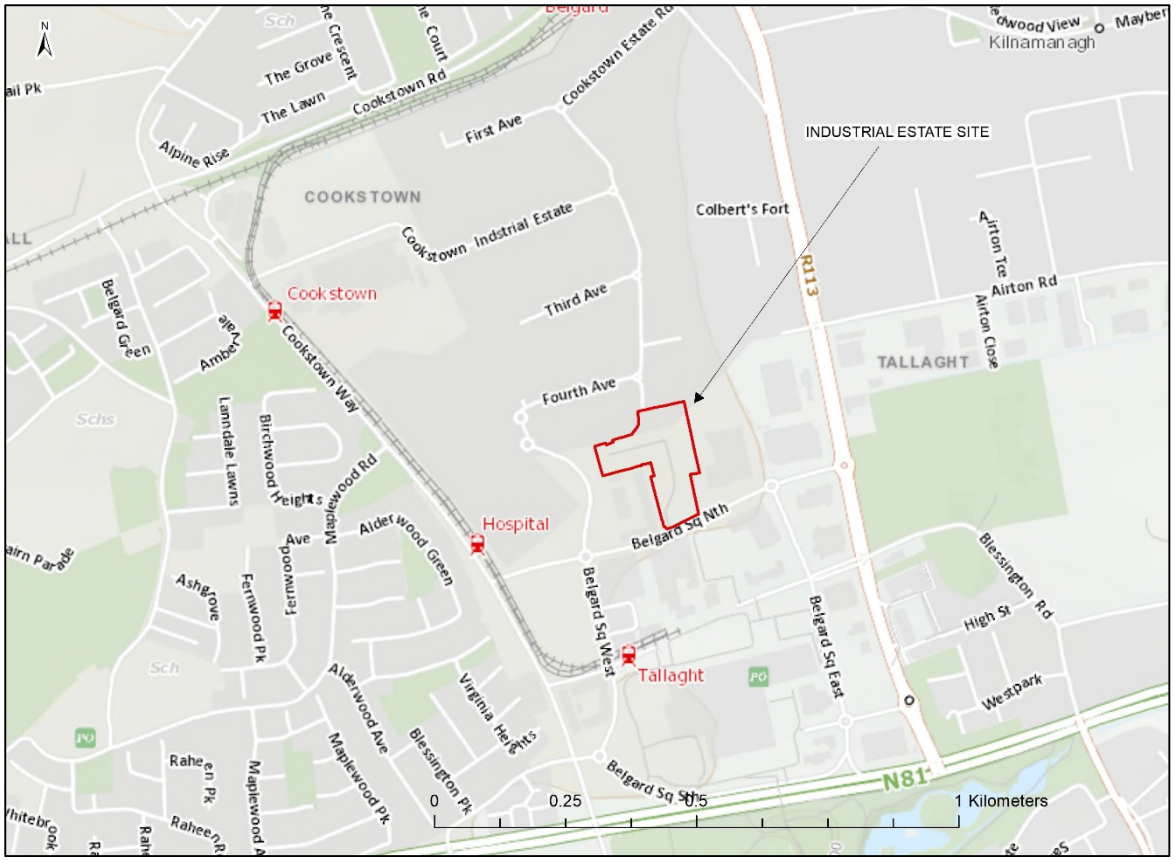

Figure 3: Approximate location industrial estate site (scale 1:8,000)

Figure 4: Aerial imagery indicating location of industrial estate site (1:2000)

Figure 5: Map provided by SDCC indicating approximate extent of survey area overlain on aerial imagery

Figure 6: Proposed road scheme Belgard Square North – Cookstown Industrial Estate (extract from Part 8 Planning Draft)

1.3 The aim of this report

The aim of this report is to present the findings of the flora and fauna survey carried out to identify key habitats and species and to assess and prioritise these on the site through:

- Establishing species of flora and fauna present within the area; and
- Identification and assessment of the presence and status of protected species in particular who inhabit or travel through the site or are using the biodiversity resources on the site.

This report aims to provide a comprehensive baseline of the ecological resource present at the site through:

1 A description of the existing ecological environment;
2 An assessment of the ecological value of the site and identification of the importance of the site as an ecological stepping stone;
3 Identification of key species of flora and fauna, with particular emphasis on any rare, protected or annexed species by reference to -
    a) Irish Red Data Books;
    b) Habitats listed on Annex I of the EU Habitats Directive;
    c) Species listed on Annex II of the EU Habitats Directive;
    d) Species listed on Annex IV of the EU Habitats Directive;
    e) Bird species listed on Annex I of the EU Birds Directive;
4 Reference to previous records in the vicinity (through the NPWS/NBDC databases); and
5 Evaluation of ecological significance of habitats and species occurring within the site and *environs*.

2 Methodology

2.1 Desk Study

The National Parks and Wildlife Service (NPWS) database was consulted to determine the proximity of the site to designated areas for conservation (within 5 km). The National Biodiversity Data Centre database was consulted regarding the occurrence of species of flora and fauna in the vicinity of the site (within the km square(s) in which the survey area is located). A review of aerial photographs of the site was undertaken to assess the likely habitats present at the site, and to identify key ecological features such as ecological corridors.

2.2 Field Survey

2.2.1 Habitats and Flora

The site was visited on the 9th of October 2017 by Dr Emma Reeves in order to survey the flora, fauna and habitats present within the survey area and immediate vicinity. The surveys carried out included:

- Establishing baseline habitat details regarding the natural, semi-natural, and modified habitats in the study area;
- Establishing baseline details of the numbers and types of flora and fauna species, in particular, the presence and/or use of the area by species that are projected under the Wildlife and Birds Directives, and invasive species of flora and fauna;
- Establishing the flora species present within the study area and in particular any species protected under the 1999 Flora Protection Order or listed on the Red Data List of Irish Plants. These are to be mapped and recorded.;
- Identification of any populations of Alien Invasive Plant Species listed on Part (1) of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 and mapping of any such populations;
- Preparation of a general habitat map, compatible with ArcGIS, presenting the distribution of all habitat types within the study area to Level 3 habitat category; and
- Identification and highlighting of specific areas of high potential biodiversity or conservation interest, identifying those areas which could act as important ecological corridors both within and outside of the study area.

It must be noted that field surveys of vegetation were undertaken outside of within the optimal timeframe for such vegetation surveys. Given the ruderal nature of the habitat, however, a botanical survey undertaken so late in the season is acceptable from an ecological point of view. Nomenclature

follows “Webb’s An Irish Flora” (2012 – 8th Edn) and “Mosses and Liverworts of Britain and Ireland a Field Guide” (2010). It is important to note that it is not possible to undertake a breeding bird survey at this time of year.

The flora, fauna and habitat survey consisted of a walk-over survey through the survey area and *environs*. The survey recorded all species of flora and fauna observed occurring within the study area. The botanical survey placed particular emphasis on rare, protected or annexed habitats/species by reference to -

a) Irish Plant Red Data Book;
b) Habitats listed on Annex I of the EU Habitats Directive;
c) Species listed on Annex II of the EU Habitats Directive; and
d) Ecological stepping stones and ecological corridors (as covered under Article 10 of the EU Habitats Directive.

An evaluation of the ecological significance of flora and habitats occurring within the site relative to surrounding habitats was also undertaken.

2.2.2 Habitat Mapping

Field maps were prepared utilising ESRI Digital Globe Satellite Imagery. Field maps were prepared prior to surveys, allowing the surveyor to mark pertinent information (habitat type, location of unusual species, etc.) on field maps. These field maps were then utilised to generate a habitat map in ArcGIS 10.2. Habitat mapping was carried out based on “Best Practice Guidance for Habitat Survey and Mapping” (Smith *et al* 2011).

2.2.3 General Bird Survey – summer bird surveys

Owing to limitations of the survey period, a breeding bird survey identifying territories, etc. was not possible. It should be noted, however, that where there was evidence of breeding (such as chicks, egg-shells, etc.) this evidence was noted. Bird Watch Ireland and the RSPB NI have agreed a list of priority bird species for conservation action on the island of Ireland. These Birds of Conservation Concern in Ireland are published in a list known as the BoCCI List. In this BoCCI List, birds are classified into three separate lists (Red, Amber and Green), based on the conservation status of the bird and hence conservation priority. The Red List birds are of high conservation concern, the Amber List birds are of medium conservation concern and the Green List birds are not considered threatened. Bird surveys

were carried on 9th October 2017 following a modified common bird census or Brown & Shepherd survey.

The purpose of bird survey was to:

- Record any priority species (Annex I, Red or Amber listed) occurring within or adjacent to the proposed development site during the survey; and
- Identify any areas of habitat of particular interest with regard to avian biodiversity.

2.2.4 General Mammal Survey (including Badger)

A general mammal survey was carried out on the 9th of October 2017. This survey was carried out based on direct observations (seeing the animal), observation of faeces, prey remains, shelters, hair, etc.

2.2.5 Evaluation of the potential for bat roosts on site

All Irish bat species are listed on Annex IV of the EU Habitats Directive and as such must be afforded protection wherever they occur. In the cooler climate of Ireland and many other temperate countries, bats eat exclusively invertebrates (insects, spiders, etc.), which they actively hunt, catching them in flight or plucking them from foliage or off the ground/water. Different species of bat specialise in catching different types of invertebrates (for example the relatively large Leisler's bat (*Nyctalus leisleri*) feeds on larger invertebrates, whilst the Common Pipistrelle (*Pipistrellus pipistrellus*) concentrates on smaller prey, such as midges). Bats gather to feed wherever there are large invertebrate populations. During the winter in Ireland, when there are few invertebrates available for feeding bats, they hibernate. Under Irish law (the Wildlife Act 1976 and Wildlife (amendment) Act 2000), it is a criminal offence to harm or disturb a bat in its place of rest. Bats are at their most vulnerable when roosting, and form different roost types at different times of the year as outlined in Figure 7 (from Irish Wildlife Manuals No. 25, Bat Mitigation Guidelines for Ireland) for the "Bat year".

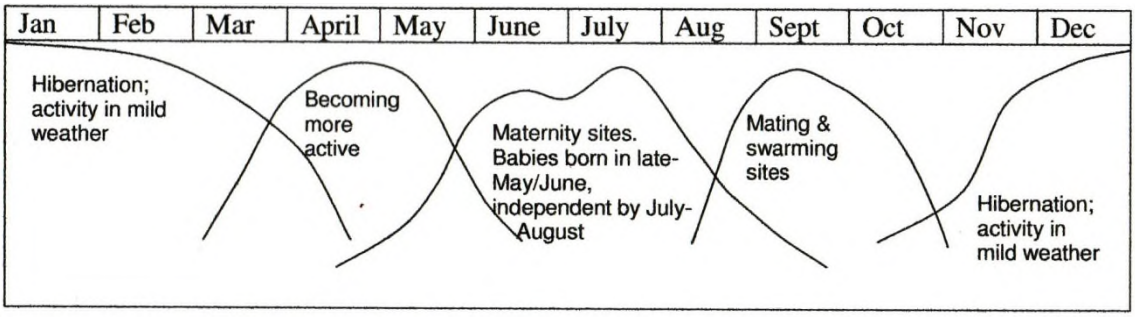

Figure 7: The "Bat Year", outlining the major phases of life.

Owing to their metabolic and social requirements, which vary throughout the year, most bats will utilise a variety of roost types depending on the time of year. For instance the Brown long eared bat (*Plecotus auritus*) has a high affinity for utilising trees as both maternity and hibernation roosts, while the Common Pipistrelle (*P. pipistrellus*) is more likely to seek out buildings for both maternity and hibernation roosts. Most of the bat species occurring in Ireland, however, will utilise trees as maternity roosts.

During the site visit on October 9th 2017, a visual inspection was carried out in order to determine the general suitability of habitat present within the site for use by roosting bats.

3 Receiving Environment and assessment of ecological value

3.1 Desk Study

3.1.1 Designated sites assessed from NPWS

An assessment of the proximity of the general survey area to any sites designated for ecological conservation, namely Special Areas of Conservation (SAC), Special Protection Area (SPA), Natural Heritage Area (NHA) or Proposed Natural Heritage Area (pNHA) was undertaken utilising ArcGIS 10.2 in combination with GIS datasets available from the National Parks and Wildlife Service. A buffer of 5km was utilised. Within the 5km buffer, there occurred four pNHA's and one SAC.

3.1.2 pNHA

There are four pNHA's occurring within a 5 km buffer of the industrial estate site; Dodder Valley pNHA - site code 000991, Glenasmole Valley pNHA – site code 001209, Lugmore Glen pNHA – site code 001212 and Grand Canal pNHA - site code 002104. The location of these pNHAs relative to the survey area is illustrated in Figure 8.

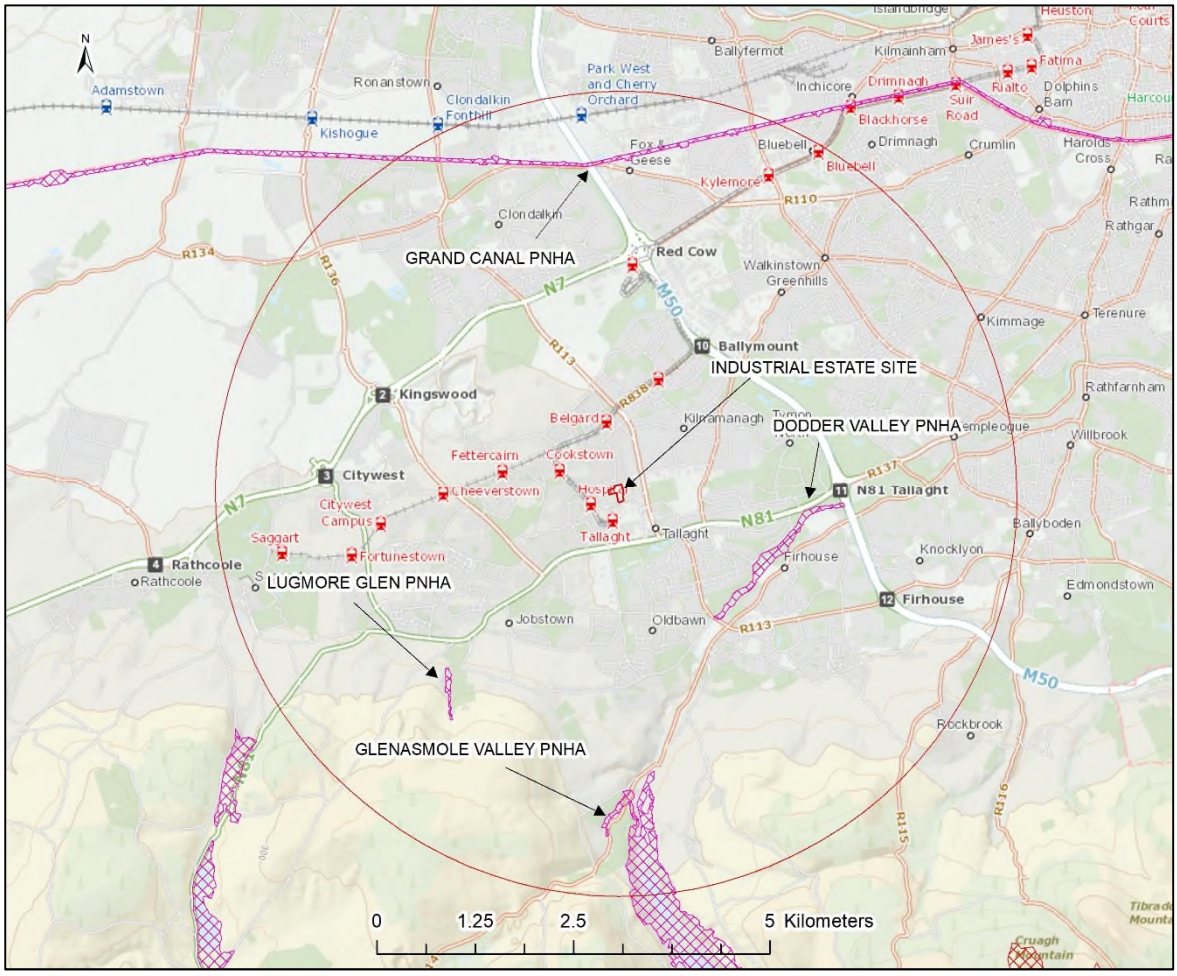

Figure 8: Location of survey area relative to pNHAs

There is one SAC occurring within a 5km buffer of the industrial estate site – the Glenasmole Valley SAC, site code 001209. The location of this SAC relative to the industrial estate site is indicated in Figure 9.

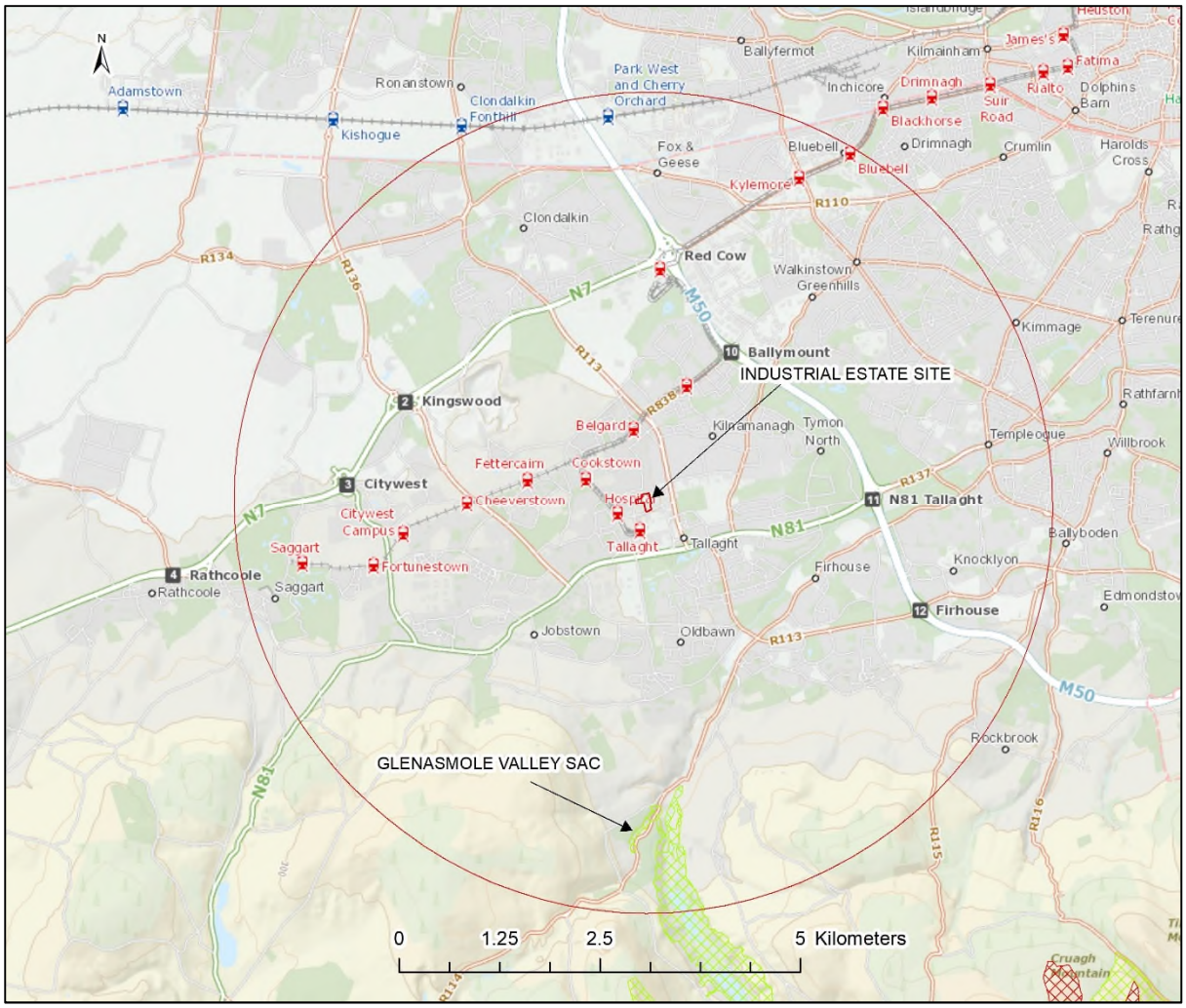

Figure 9: Location of survey area relative to SACs

3.1.3 Records of species of conservation concern within 2 km (NBDC)

The NBDC database was accessed on the 10th of October 2017 and a search for species of conservation concern within the 1km grid(s) in which the survey area occurs undertaken (O0827 and O0828). The survey area is split over two 1km squares. Those species of conservation concern recorded within these 1km squares are outlined in Table 1, and include three species of bird, one amphibian and one mammal.

Table 1: Species of conservation concern recorded in NBDC database occurring in vicinity of survey area

Common Name	Latin Name
Common Wood Pigeon	*Columba palumbus*
House Sparrow	*Passer domesticus*
Common Starling	*Sturnus vulgaris*
Common Frog	*Rana temporaria*
Pine Marten	*Martes martes*

3.1.4 Map/Aerial imagery review

From a review of aerial imagery, it is clear that the majority of the survey area has, until recently consisted of the habitat type "Buildings and Artificial Surfaces, BL3". Aerial imagery from 2000, 2005, 2013 and 2017 indicate that the disused site has undergone succession, with scrub and grassland habitats beginning to occur. Images of the approximate area of the industrial estate area, within which the study area was located from 2000, 2005, 2013 and 2017 are illustrated in Figure 10, Figure 11, Figure 12 and Figure 13. Aerial imagery from 2017 (Google Earth) of the proposed road corridor and area to be surveyed is presented in Figure 14.

Figure 10: Aerial imagery from approximately 2000 of the industrial estate area (OSI)

Figure 11: Aerial imagery from approximately 2005 of the industrial estate area (OSI)

Figure 12: Aerial imagery from approximately 2013 of the industrial estate area (Digital Globe)

Figure 13: Aerial imagery from approximately 2017 of the industrial estate area (Google Earth))

Figure 14: Aerial imagery illustrating proposed road corridor and area to be surveyed (2017 Google Earth)

3.2 Field Survey –

A site visit was carried out on October 9th 2017 by Dr Emma Reeves for the purpose of:

- Establishing baseline habitat details regarding the natural, semi-natural, and modified habitats in the study area;
- Establishing baseline details of the numbers and types of flora and fauna species, in particular, the presence and/or use of the area by species that are projected under the Wildlife and Birds Directives, and invasive species of flora and fauna;
- Establishing the flora species present within the study area and in particular any species protected under the 1999 Flora Protection Order or listed on the Red Data List of Irish Plants. These are to be mapped and recorded. The presence of pest species is to be mapped and recorded with recommendations for their control to be included in the report;
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- Preparation of a general habitat map, compatible with ArcGIS, presenting the distribution of all habitat types within the study area to Level 3 habitat category; and
- Identification and highlighting of specific areas of high potential biodiversity or conservation interest, identifying those areas which could act as important ecological corridors both within and outside of the study area.

3.2.1 Baseline habitat details regarding habitats present within the study area

The survey area as outlined in Figure 14 is comprised of three habitats:

- Grassland best described as “Dry meadow and Grassy Verges (GS2)”;
- Developing scrub (WS1); and
- Artificial surfaces and Buildings (BL3).

A general habitat map (generated in ArcGIS 10.2) presenting the distribution of habitat types within the study area to Fossitt Level 3 is presented in Figure 15.

Figure 15: Habitat map of survey area overlain on digital globe satellite imagery

3.2.2 GS2 habitat

There is, adjacent to the roadway within the southern section of the survey area a grassland habitat best described as "Dry Meadow and Grassy Verge (GS2)". According to Fossitt "…*Dry meadows that are rarely fertilised or grazed, and are mown only once or twice a year for hay are now rare in Ireland. Most have been improved for agriculture and this type of grassland is now best represented on grassy roadside verges, on the margins of tilled fields, on railway embankments, in churchyards and cemeteries, and in some neglected fields or gardens. These areas are occasionally mown (or treated with herbicides in the case of some railway embankments), and there is little or no grazing or fertiliser application. This pattern of management produces grasslands with a high proportion of tall, coarse and tussocky grasses such as False Oat-grass (Arrhenatherum elatius) and Cock's-foot (Dactylis glomerata). Other grasses may include Yorkshire-fog (Holcus lanatus), Smooth Meadow-grass (Poa pratensis), Barren Brome (Anisantha sterilis) and Meadow Foxtail (Alopecurus pratensis). The broadleaved herb component is characterised by a range of species that either grow tall, such as Cow Parsley (Anthriscus sylvestris), Hogweed (Heracleum sphondylium), Goat's-beard (Tragopogon pratensis), Nettle (Urtica dioica) and Common Knapweed (Centaurea nigra), or climb the stems of*

others, as in the case of Bush Vetch (Vicia sepium) and Meadow Vetchling (Lathyrus pratensis). Grassy verges may support other smaller broadleaved herbs such as Pignut (Conopodium majus), Creeping Cinquefoil (Potentilla reptans) and clovers (Trifolium spp.)…". The Annexed habitat "Lowland Hay Meadows (6510)", is a form of GS2, but the habitat occurring here is not such a habitat. The grassland habitat is dominated by grasses typical of GS2 such as *Arrhenatherum elatius, Dactylis glomerata* and *Agrostis stolonifera*. Herbs included *Senecio erucifolia, Potentilla reptans, Plantago lanceolata* and *Veronica chamaedrys*. This grassland habitat grades into, and occurs within the understorey of the scrub habitat.

No protected or rare species of flora were observed during the field survey within this habitat. No Alien Invasive Plant Species listed on Part (1) of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 were observed to be present within this habitat.

Figure 16: Photograph illustrating grassland habitat occurring

Table 2: Species observed occurring within grassland habitat

Species occurring within GS2 habitat
Agrostis stolonifera
Arrhenatherum elatius
Brachythecium rutabulum
Centaurea nigra
Cirsium arvense
Dactylis glomerata
Dipsacus fullonum
Elytrigia repens
Epilobium cilliatum
Epilobium hirsutum
Festuca rubra
Geranium mollis
Hedera helix
Holcus lanatus
Hypochaeris radicata
Kindsbergia praelongum
Leontedon autumnalis
Malus domestica
Medicago lupulina
Plantago lanceolata
Potentilla reptans
Pyracantha spp
Rhytidiadelphus squarrosus
Rosa canina
Rubus fruticosus agg
Salix spp
Senecio erucifolia
Senecio jacobaea
Sorbus aucuparia
Taraxacum officinale agg.
Trifolium pratense
Trifolium repens
Tussilago farfara
Urtica dioica
Veronica chamaedrys
Vicia cracca
Vicia sepium

3.2.3 WS1 habitat

Much of the northern section of the survey area, and indeed the abandoned industrial estate in general, is comprised of scrub habitat developing over BL3 habitat, with grassland elements in the understorey. According to Fossitt "…*This broad category includes areas that are dominated by at least 50% cover of shrubs, stunted trees or brambles. The canopy height is generally less than 5 m, or 4 m in the case of wetland areas. Scrub frequently develops as a precursor to woodland and is often found in inaccessible locations, or on abandoned or marginal farmland. In the absence of grazing and mowing, scrub can expand to replace grassland or heath vegetation. Trees are included as components of scrub if their growth is stunted as a result of exposure, poor soils or waterlogging. If tall trees are present, these should have a scattered distribution and should not form a distinct canopy…*"

It is of note that there was abundant evidence of use of the area for antisocial behaviour, with evidence for alcohol and drug abuse. The disturbance associated with the use of the area likely limits the use of the habitat by wildlife such as Badger and Fox. In addition, the habitat comprises an "Island" and the BL3 habitat upon which the scrub is developing is not conducive to burrowing animals. The scrub habitat is dominated by Buddleja, Rowan and Willow, with occasional Apple and Firethorn. Much of the scrub habitat has an understorey of Bramble, but in areas of less developed scrub, grassland elements are common in the understorey.

No protected or rare species of flora were observed during the field survey within this habitat. No Alien Invasive Plant Species listed on Part (1) of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 were observed to be present within this habitat. Although several non-native species such as Buddleja are present here, such species are not typically aggressively invasive, and provide a valuable food source in an urban habitat for nectar-feeding insects.

A complete species list of those species observed within this habitat is provided in Table 3.

Figure 17: Grassland habitat grading into scrub

Figure 18: Well established scrub habitat, with young fruiting apple tree

Table 3: Species observed occurring within scrub habitat

Species occurring within scrub habitat
Agrostis stolonifera
Agrostis capillaris
Arrhenatherum elatius
Betula pubescens
Blackstonia perfoliata
Brachythecium rutabulum
Bryum spp
Buddleja japonica
Catapodium rigidum
Centranthus ruber
Chamerion angustifolium
Cirsium arvense
Cornus spp
Cotoneaster horizontalis
Cynosurus cristatus
Dactylis glomerata
Dipsacus fullonum
Elytrigia repens
Epilobium montanum
Erigeron canadensis
Festuca rubra
Geranium robertianum
Hedera helix
Holcus lanatus
Hypericum calycinum
Leontedon autumnalis
Linaria spp
Linum catharticum
Malus domestica
Medicago lupulina
Odontites vernus
Phormium tenax
Plantago lanceolata
Plantago major
Populus tremuloides
Potentilla reptans
Potentilla anserina
Prunus spp
Pseudoschleropodium purum
Pyracantha spp
Reseda luteola
Ribes sanguineum

Species occurring within scrub habitat
Rosa canina
Rubus fruticosus agg
Rumex crispus
Rumex obtusifolius
Salix spp
Sambucus nigra
Senecio erucifolia
Senecio jacobaea
Sorbus aucuparia
Sorbus spp
Taraxacum officinale agg
Trifolium pratense
Trifolium repens
Tripleurospermum inodorum
Tussilago farfara
Urtica dioica
Vicia sepium

3.2.4 BL3 Habitat

There is a significant area of BL3 habitat present, and indeed much of the area was previously BL3 habitat that has undergone succession. There are areas in which there is no vegetation, but other areas in which vegetation is encroaching upon the BL3 habitat as indicated in Figure 19. A separate species list is not provided for BL3 habitat, as BL3 exists as a mosaic with grassland and scrub habitats, or where BL3 habitat is intact, without any vegetation cover. No protected or rare species of flora were observed during the field survey within this habitat. No Alien Invasive Plant Species listed on Part (1) of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 were observed to be present within this habitat.

Figure 19: Vegetation recolonising BL3 habitat

3.2.4.1 General bird survey

It must be noted that October is not the optimal time of year for undertaking bird surveys. It is likely that during the breeding season, numerous species would utilise the scrub habitat for nesting. Only four species of bird were observed during the site survey on the 9th of October. Of note, one of these species was Peregrine Falcon (*Falco peregrinus*), which was observed hunting Feral Pigeon over the site. Having consulted with Terry Shaw, NPWS Ranger for the area, Peregrine Falcon are, in fact commonly observed in this area of Tallaght. Although a species listed on Annex I of the EU Birds Directive, Peregrine Falcon are green-listed on the BOCCI list. Species observed and their BOCCI listing are listed in Table 4.

Table 4: Birds observed at/near site and BOCCI status

COMMON NAME	LATIN NAME
Feral Pigeon	*Columba livia domestica*
Peregrine Falcon	*Falco peregrinus*
Magpie	*Pica pica*
Wren	*Troglodytes troglodytes*

3.2.4.2 General Mammal surveys (including badger)

A general mammal survey was carried out on the 9th October 2017. Evidence was observed for Fox on site, with tracks and the remains of prey (feathers with chewed quills). The occurrence of the scrub habitat over BL3 habitat is not conducive to burrowing mammals, and there was little evidence for a significant mammal population.

3.2.4.3 Suitability of habitats for roosting bats

There was not present any habitat within the survey area suitable for roosting bats.

3.2.4.4 Other notable species

There was no evidence observed for Common Frog, Smooth Newt or Common Lizard observed during the site visit, and given the nature of the habitats present, these species are unlikely to occur within the habitats present.

4 Assessment of ecological value of sites

The assessment of the ecological value of the site comprised:

- Identification and highlighting of specific areas of high potential biodiversity or conservation interest; and
- Identification of those areas which could act as important ecological corridors both within and outside of the study area.

The survey area, and indeed the disused industrial estate in general, is dominated by transitionary habitats. The grassland present requires management in order to be maintained as grassland. This habitat requires mowing once or twice a year in order to maintain the grassland habitat. The scrub habitat is by its nature transitory and successional. If left unmanaged, this habitat will revert to climax vegetation, which is woodland. The succession may be hampered by the underlying BL3 habitat, which will also impact on the ability of burrowing mammals to colonise the site.

Given the location and scale of the area of habitat and the levels of disturbance, the site is unlikely to ever be of high potential biodiversity or conservation interest.

4.1 Assessment of conservation priorities and ecosystem services

While the habitats present within the survey area and within the disused industrial estate in general do provide a stepping stone of habitat for both flora and fauna, they are of limited value as regards conservation and ecosystem services. The habitat is largely isolated, and while easily accessed by plants, birds and flying insects, is not easily colonised by smaller terrestrial mammals. In addition, the underlying BL3 habitat makes colonisation by burrowing mammals difficult. The entire industrial estate itself is just over 2.5 Ha in area. The survey area itself is approximately 0.5 Ha in area.

5 Conclusions

The habitats present within the survey area, while of some ecological value in the context of the surrounding, largely urbanised landscape, is of limited ecological importance overall. The habitats present are transitory and are isolated. The habitats present are of some conservation interest as regards nesting birds, which will almost certainly utilise the scrub habitat occurring. The proximity of a high number of human residences, likely associated with a relatively high cat population, however, limits the conservation value of the habitats present even from the point of view of nesting birds.

In conclusion:

(1) There are no Annex I habitats occurring within the survey area;
(2) There are no Flora Protection Order Species of plants occurring within the survey area;
(3) There are no Red-listed species of flora present on the site;
(4) There were no Alien Invasive Plant Species listed on Part (1) of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 were observed to be present on site;
(5) There are no Annex II species (EU Habitats Directive) occurring within the survey area;
(6) There are no areas of habitat suitable for roosting bats (all of which are listed on Annex IV of the EU Habitats Directive); and
(7) Although Peregrine Falcon, a species listed on Annex I of the EU Birds Directive (although Green-listed on the BOCCI list) was observed hunting in the vicinity of the site, the proposed development will have no impact on this species.

In summary, the proposed development will have no significant impact on the local ecological resource.

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